American Health Economy Illustrated

By:

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Medical Industry Leadership Institute Open Education Hub

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Chapter 1

Chapter 1: Rise of a Massive Health Sector

1.1 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
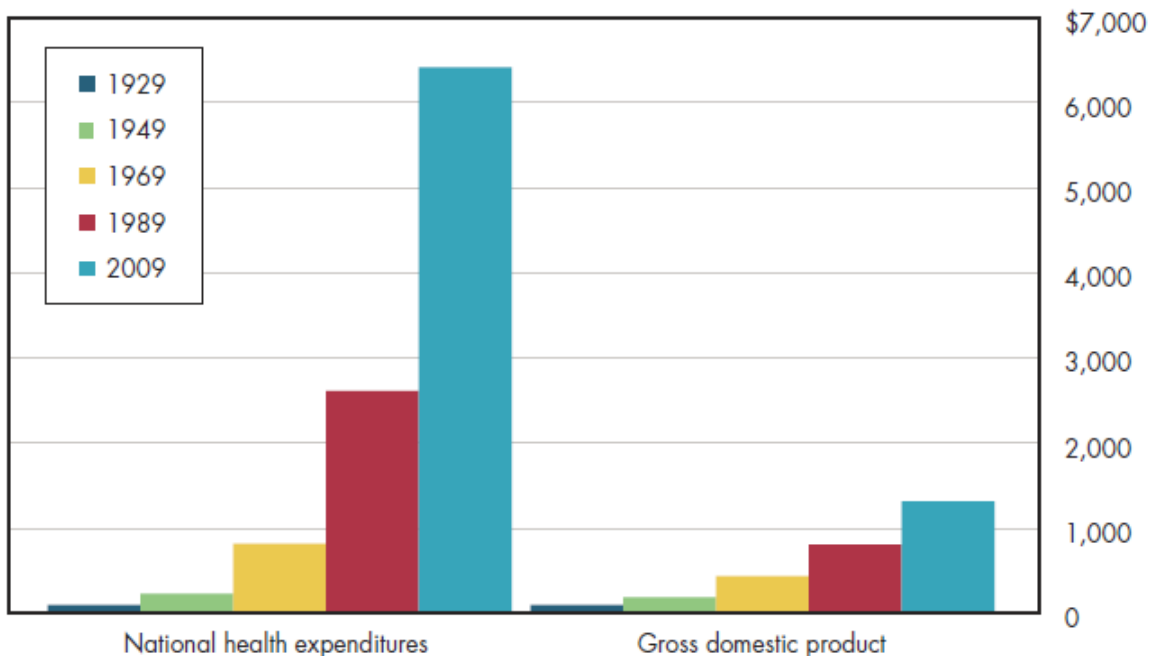
National health expenditures (NHE) and NHE per capita are the best available single measures of the size of the health sector.[4] NHE reflects the total amount of spending on health care, including goods and services having to do with personal health care, public health activities, public and private 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
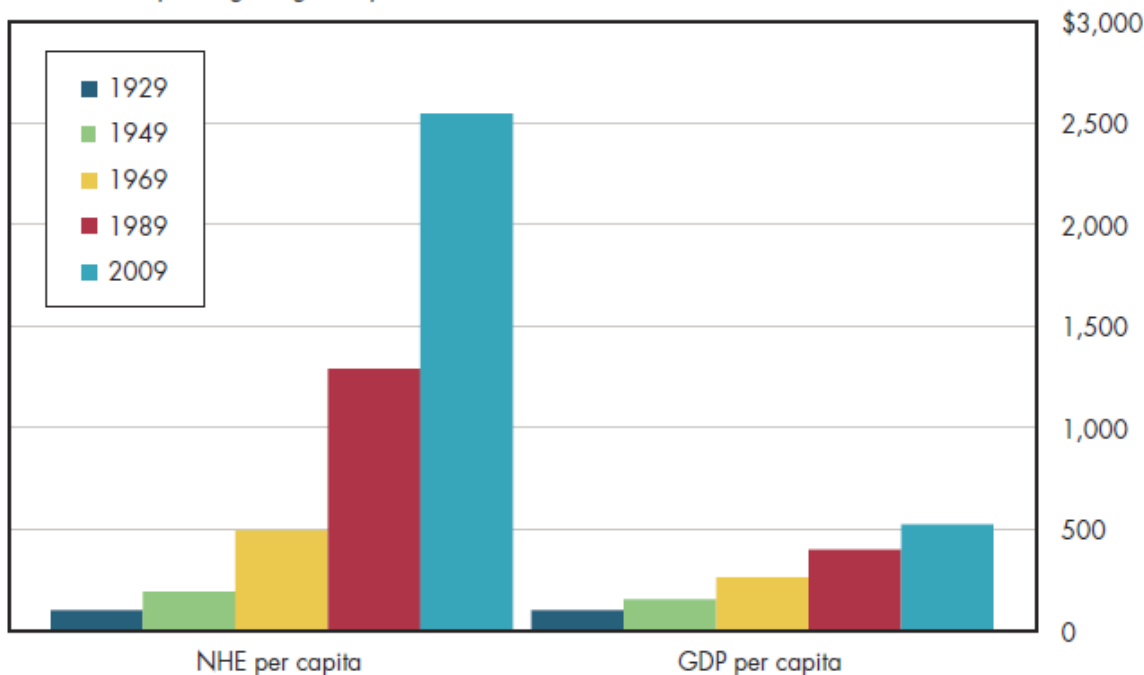
The GDP implicit price deflator is the most comprehensive measure of pure price inflation for the economy as a whole. The Consumer Price Index (CPI) is better known but covers only approximately 60 percent of the economy, omitting rural areas, government purchases, and investment goods. Because half 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.

1.1.1 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]
- Figure 1.1b Editable Slide (can be formatted as desired)[11]

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

1.1.2 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).

1.2 1.2 Growth in Inflation-Adjusted Health Output per Capita over 80 Years[12]

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.[13] 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.[14]

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.[15]

Both the health care deflator for personal consumption expenditures (PCE) and the CPI for medical care have limitations.[16] The PCE health care deflator counts all household medical care use regardless of

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

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

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

[15]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.

[16]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

how it is financed.[17] Therefore, it is a more complete measure of price changes across the entire medical market. The medical CPI is intended to reflect household out-of-pocket prices.[18] Consequently, it places a smaller weight on expensive services disproportionately paid by insurance, such as hospital care.[19] 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
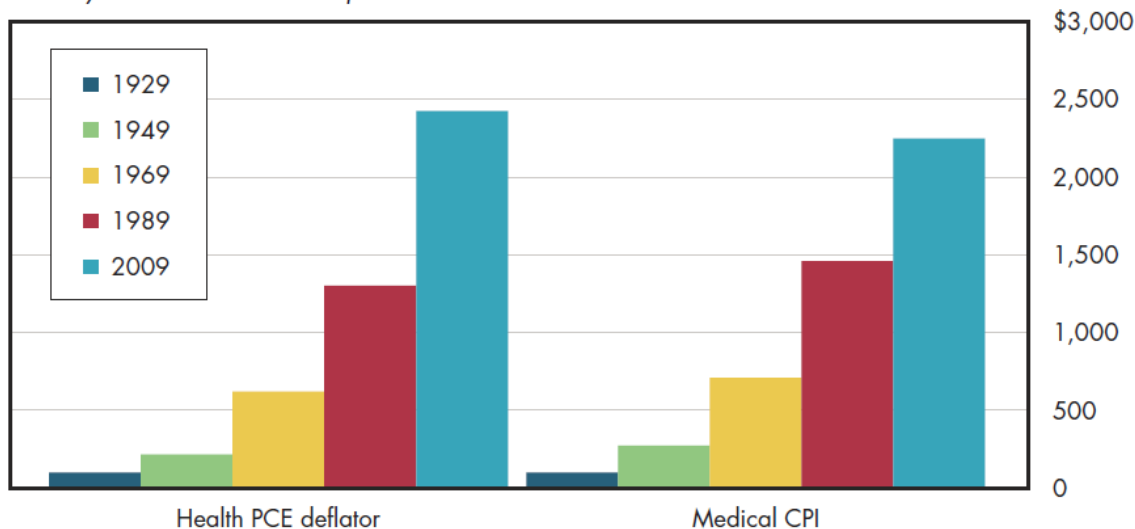
Note: Price index used to estimate real (inflation-adjusted) output of health care goods and services.

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.[20] 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.

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.

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

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

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

[20]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
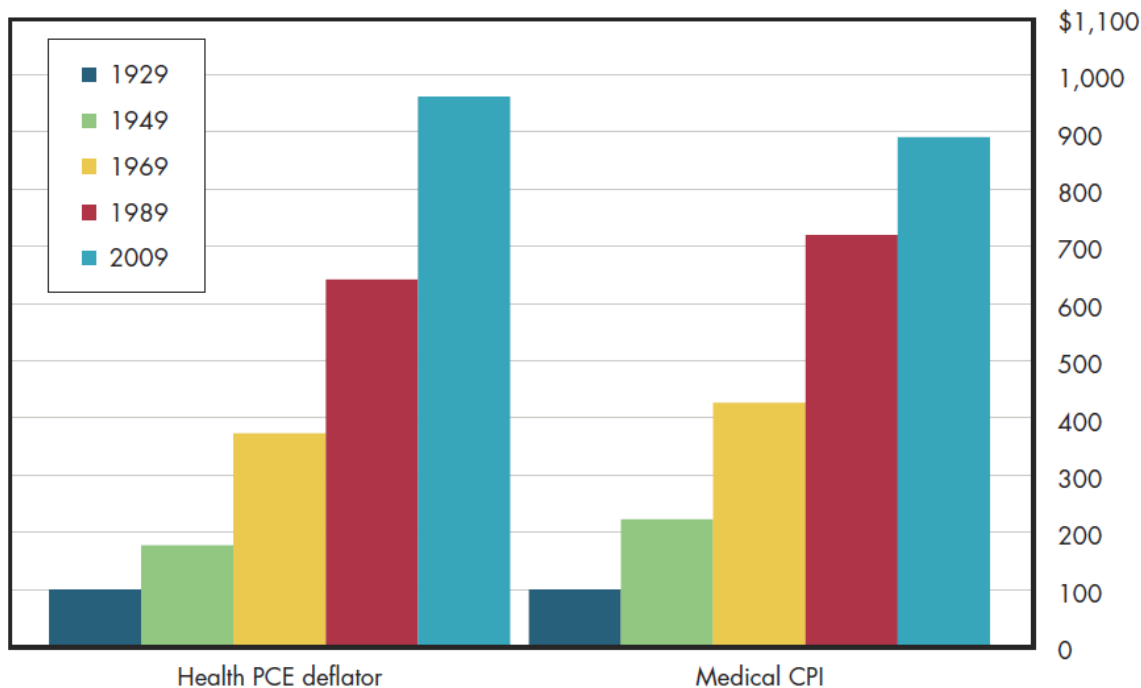
Note: Price index used to estimate real (inflation-adjusted) output of health goods and services.

1.2.1 Downloads

Download Excel tables used to create both figures: Figures 1.2a/1.2b Tables[21] . 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)[22]
- Figure 1.2a Editable Slide (can be formatted as desired)[23]
- Figure 1.2b Image Slide (as it appears above)[24]
- Figure 1.2b Editable Slide (can be formatted as desired)[25]

1.2.2 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.

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[21]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2TAB.xls
[22]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2a.pptx
[23]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2aDATA.pptx
[24]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2b.pptx
[25]https://hub.mili.csom.umn.edu/content/m10003/latest/1.2bDATA.pptx

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).

1.3 1.3 Ever-Growing Health Share of Economy[26]

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[27] (figure 1.3a).

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

Percentage of total expenditures

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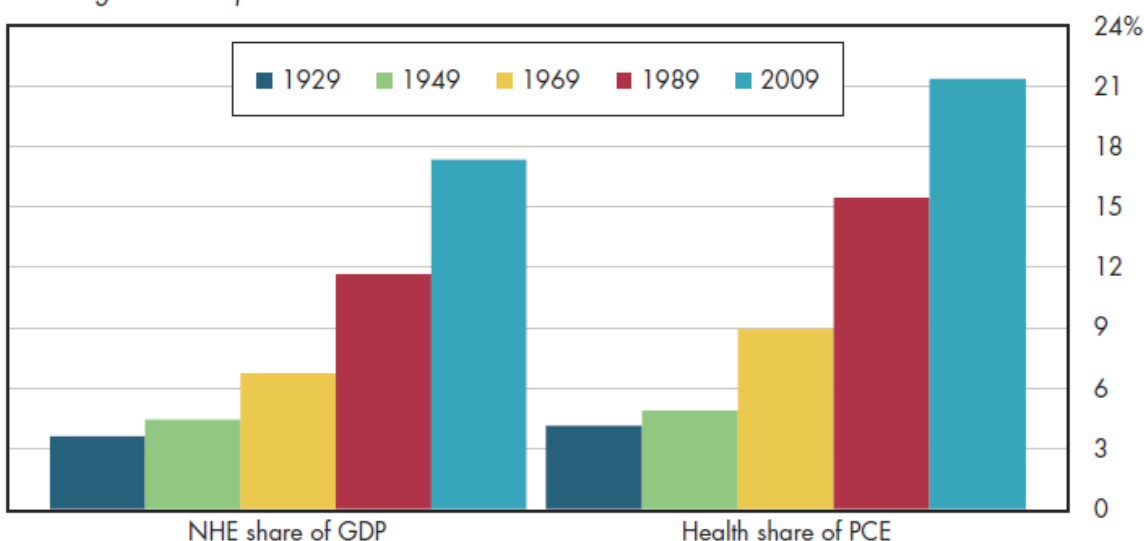
[26]This content is available online at <https://hub.mili.csom.umn.edu/content/m10004/1.3/>.
[27]The figure shown is based on personal consumption expenditures on health adjusted to include expenditures on net health insurance.

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

Percentage of total spending or revenue
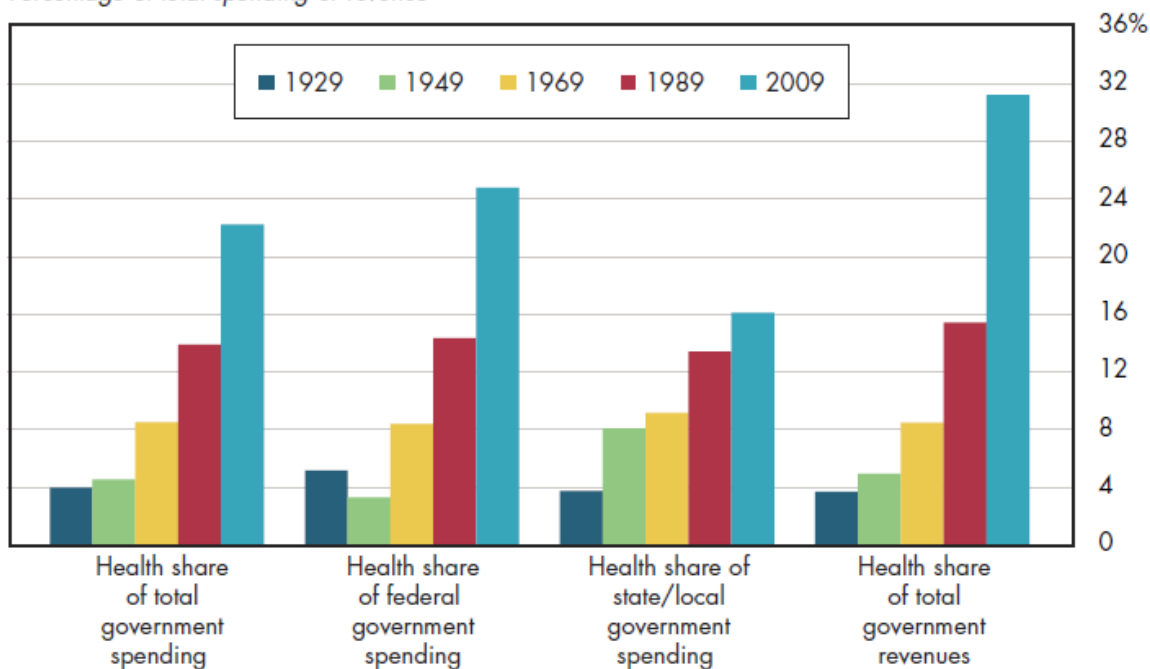
Note: In this NHE Accounts framework, federal government health spending includes all of Medicare (including components financed privately, such as Parts B and D premiums), the federal share of Medicaid spending, and other public health-related programs such as Department of Defense (DOD) and Veterans 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.

1.3.1 Downloads

Download Excel tables used to create both figures: Figures 1.3a/1.3b Tables[28] . 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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[28]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)[29]
- Figure 1.3a Editable Slide (can be formatted as desired)[30]
- Figure 1.3b Image Slide (as it appears above)[31]
- Figure 1.3b Editable Slide (can be formatted as desired)[32]

1.3.2 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.

1.4 1.4 US Spends the Most on Health among Countries[33]

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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[29]https://hub.mili.csom.umn.edu/content/m10004/latest/1.3a.pptx

[30]https://hub.mili.csom.umn.edu/content/m10004/latest/1.3aDATA.pptx

[31]https://hub.mili.csom.umn.edu/content/m10004/latest/1.3b.pptx

[32]https://hub.mili.csom.umn.edu/content/m10004/latest/1.3bDATA.pptx

[33]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)
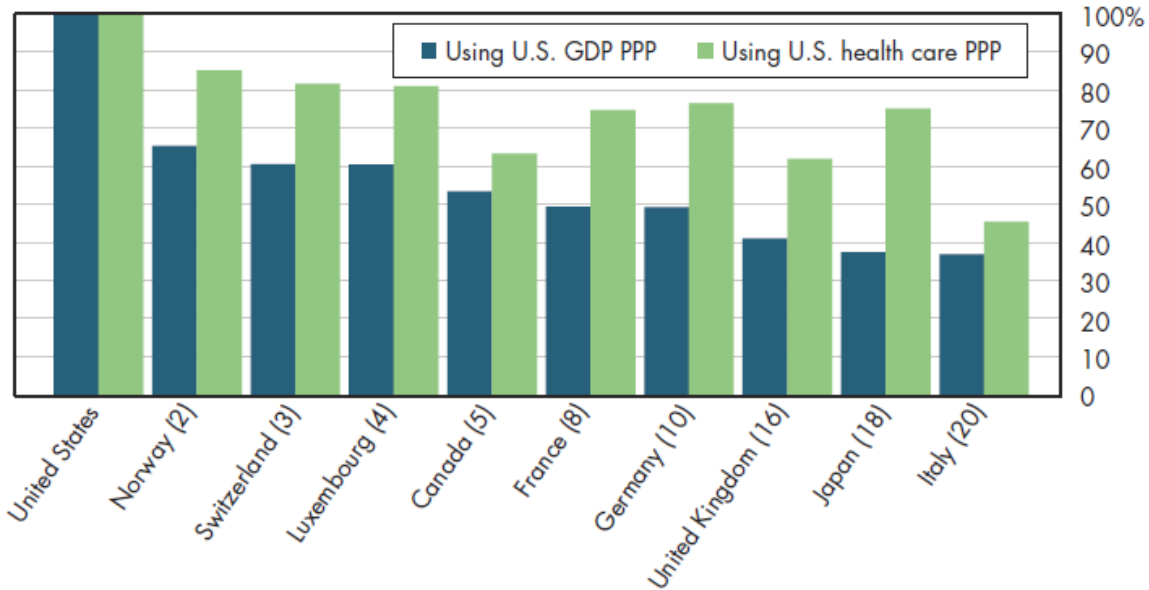
Note: Numbers in parentheses show OECD country ranking on health spending per capita using GDP PPP index. The GDP purchasing power index (PPP) standardizes health spending in terms of its general purchasing power in the U.S. economy. The health care PPP standardizes spending in terms of its power to 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)
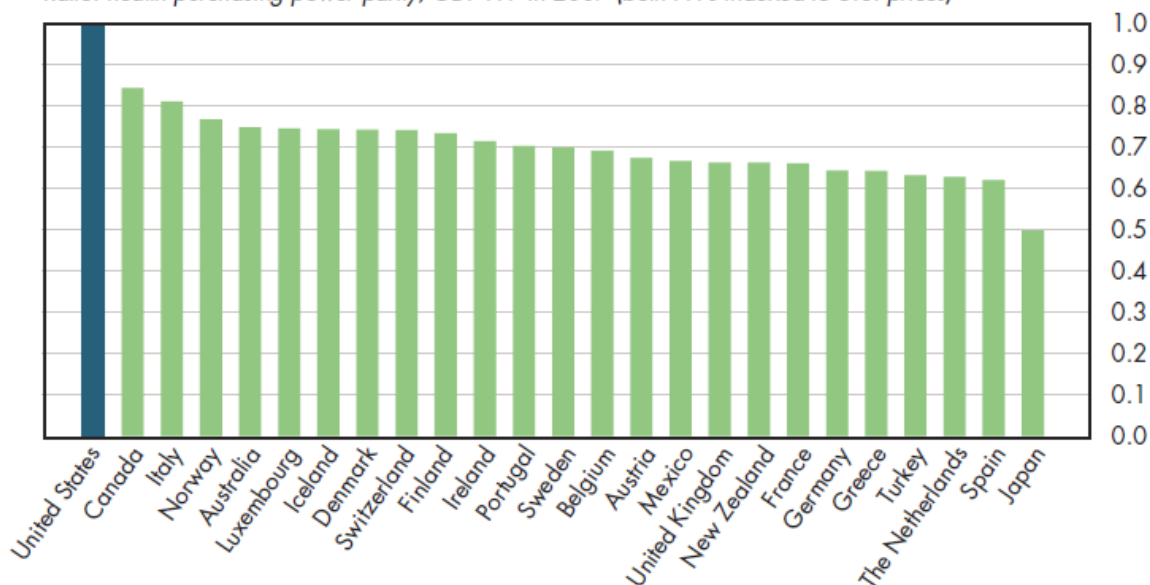
Note: The lower the ratio of health PPP to GDP PPP, the more the traditional measure of per capita spending (based on GDP PPP) exaggerates the actual difference in real health spending between a given country and the United States in terms of constant health purchasing power.

1.4.1 Downloads

Download Excel tables used to create both figures: Figures 1.4a/1.4b Tables[34] . 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)[35]
- Figure 1.4a Editable Slide (can be formatted as desired)[36]
- Figure 1.4b Image Slide (as it appears above)[37]
- Figure 1.4b Editable Slide (can be formatted as desired)[38]

1.4.2 References

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

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[34]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4TAB.xls
[35]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4a.pptx
[36]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4aDATA.pptx
[37]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4b.pptx
[38]https://hub.mili.csom.umn.edu/content/m10005/latest/1.4bDATA.pptx

1.5 1.5 Health Spending Outgrew Economy[39]

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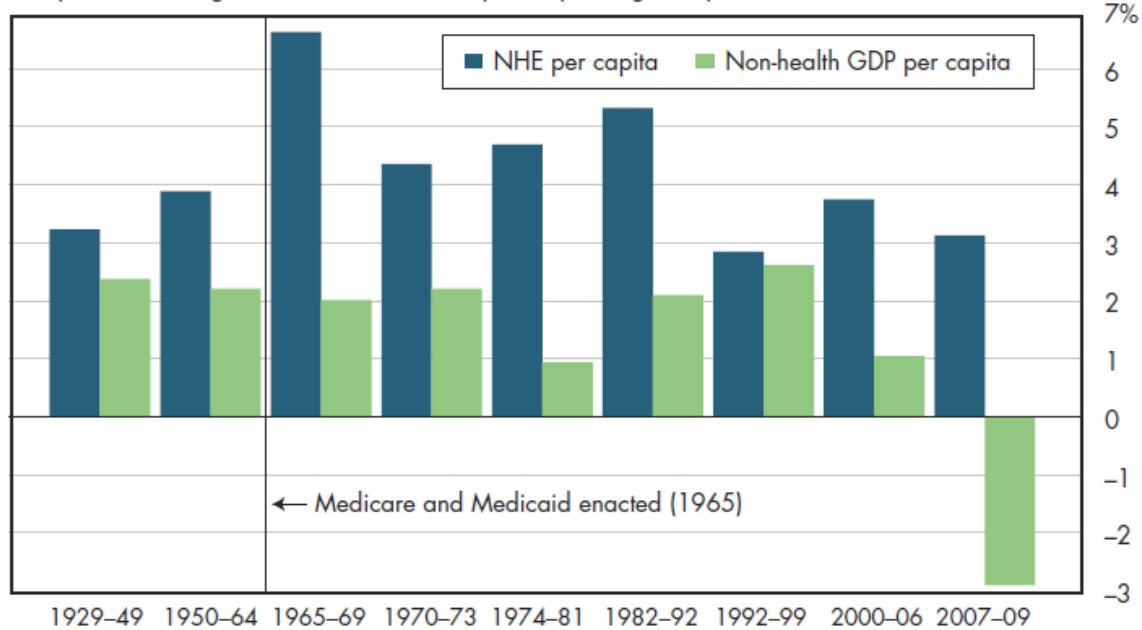
Note: Non-health GDP = GDP minus NHE. Growth rates calculated from real GDP per capita (chained 2005 dollars) and real NHE per capita (calculated in 2005 dollars from GDP price deflator).

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.

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

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

Annual percentage change
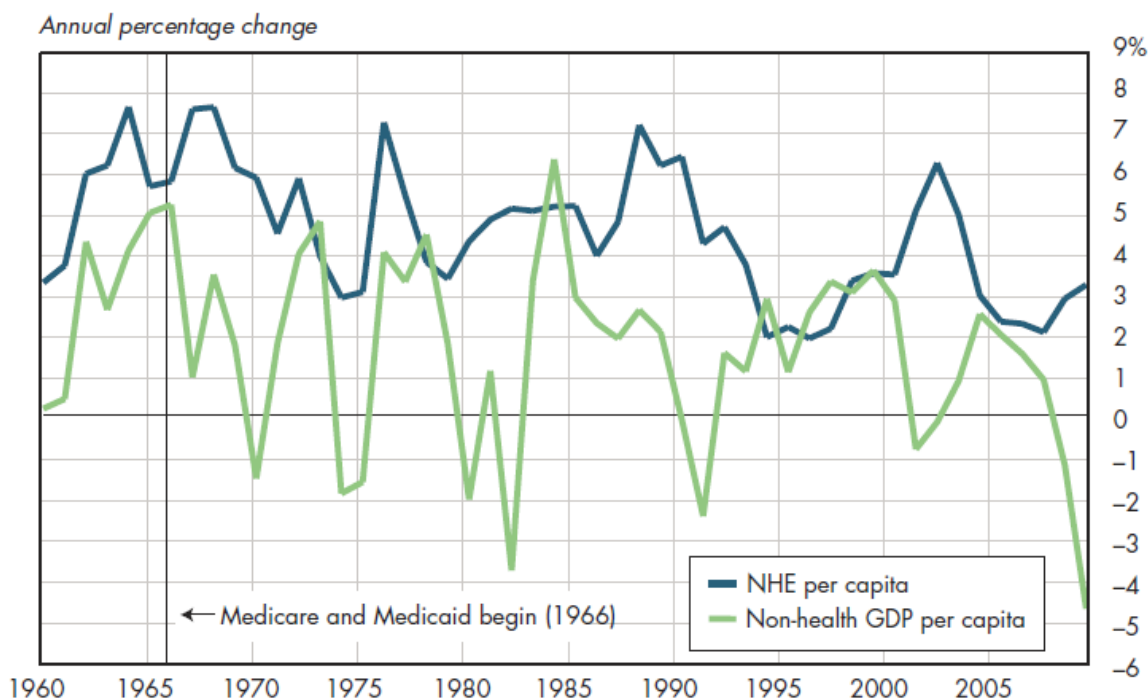
It is worth emphasizing from the previous discussion what these trends do (and do not) imply. Both sets of growth rates have been calculated from "real" (inflation- adjusted) per capita estimates of NHE and non-health sector GDP (that is, GDP minus NHE), using the GDP deflator to remove the effects of 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.

1.5.1 Downloads

Download Excel tables used to create both figures: Figures 1.5a/1.5b Tables[40] . 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
- 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

Download PowerPoint versions of both figures.

- Figure 1.5a Image Slide (as it appears above)[41]

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[40]https://hub.mili.csom.umn.edu/content/m10006/latest/1.5TAB.xls
[41]https://hub.mili.csom.umn.edu/content/m10006/latest/1.5a.pptx

- Figure 1.5a Editable Slide (can be formatted as desired)[42]
- Figure 1.5b Image Slide (as it appears above)[43]
- Figure 1.5b Editable Slide (can be formatted as desired)[44]

1.5.2 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).

B. Centers for Medicare and Medicaid Services (CMS). Quick Definitions for National Health Expenditure Accounts (NHEA) Categories. 2011b. 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. 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. Compendium of National Health Expenditures Data. DHEW Pub No (SSA) 73-11903. Office of Research and Statistics. 1973.

E. Hartman MB, RJ Kornfeld, and AC Catlin. 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).

1.6 1.6 Health Spending Rose in All Advanced Countries[45]

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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[42]https://hub.mili.csom.umn.edu/content/m10006/latest/1.5aDATA.pptx
[43]https://hub.mili.csom.umn.edu/content/m10006/latest/1.5b.pptx
[44]https://hub.mili.csom.umn.edu/content/m10006/latest/1.5bDATA.pptx
[45]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)
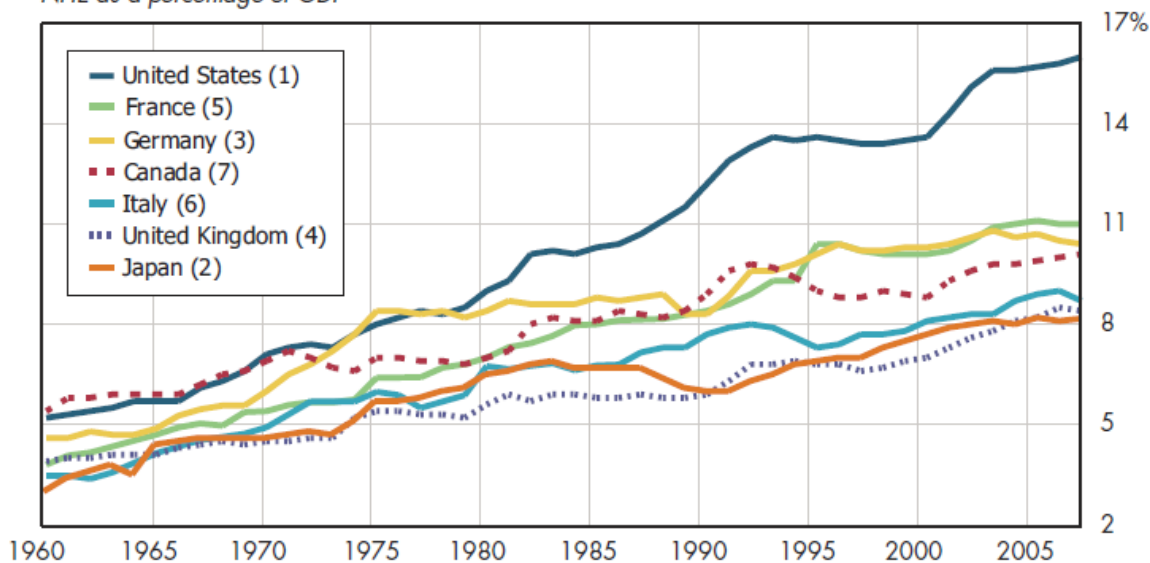
Note: Numbers in parentheses show country ranking within G7 based on size of GDP in 2007.

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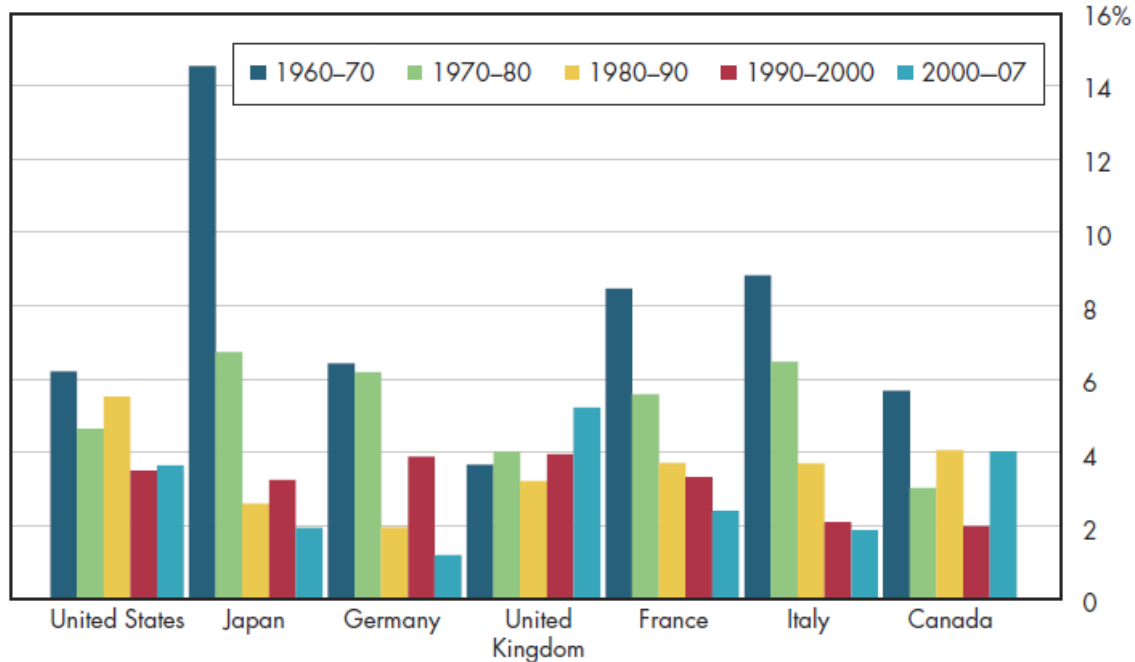
Note: Countries listed (left to right) in order of the size of their GDP in 2007. Growth rates estimated from real NHE per capita (calculated in chained 2005 U.S. dollars using a GDP price deflator).

1.6.1 Downloads

Download Excel workbooks used to create Figure 1.6a Tables[46] and Figure 1.6b Tables[47] . [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

 Download PowerPoint versions of both figures.

- Figure 1.6a Image Slide (as it appears above)[48]
- Figure 1.6a Editable Slide (can be formatted as desired)[49]
- Figure 1.6b Image Slide (as it appears above)[50]
- Figure 1.6b Editable Slide (can be formatted as desired)[51]

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[46]https://hub.mili.csom.umn.edu/content/m10007/latest/1.6aTAB.xls
[47]https://hub.mili.csom.umn.edu/content/m10007/latest/1.6bTAB.xls
[48]https://hub.mili.csom.umn.edu/content/m10007/latest/1.6a.pptx
[49]https://hub.mili.csom.umn.edu/content/m10007/latest/1.6aDATA.pptx
[50]https://hub.mili.csom.umn.edu/content/m10007/latest/1.6b.pptx
[51]https://hub.mili.csom.umn.edu/content/m10007/latest/1.6bDATA.pptx

1.6.2 References

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

1.7 1.7 Big and Increasing Gap in Health Spending between US and Rest of the World[52]

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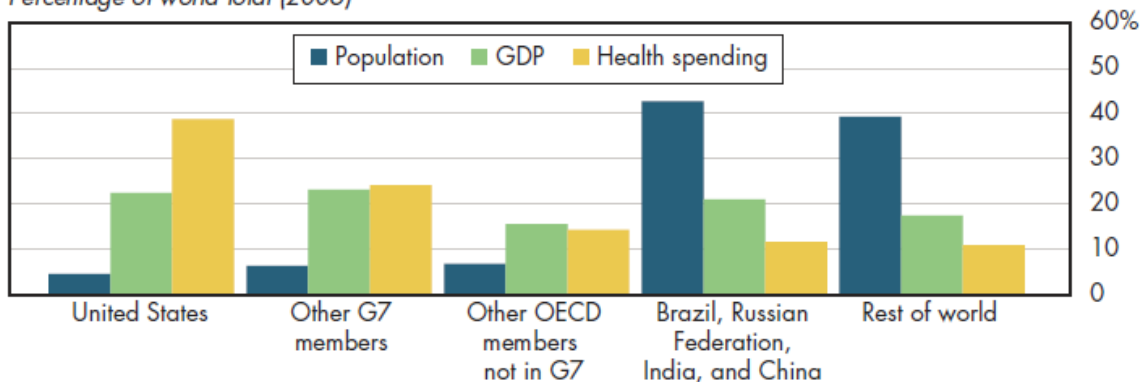
The concentration of world population in the group with fewer than 10 percent of U.S. per capita income and health spending is magnified by the inclusion of China and India, where almost 40 percent of the world's population reside (figure 1.7b). This group also includes four of the world's most populated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

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

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
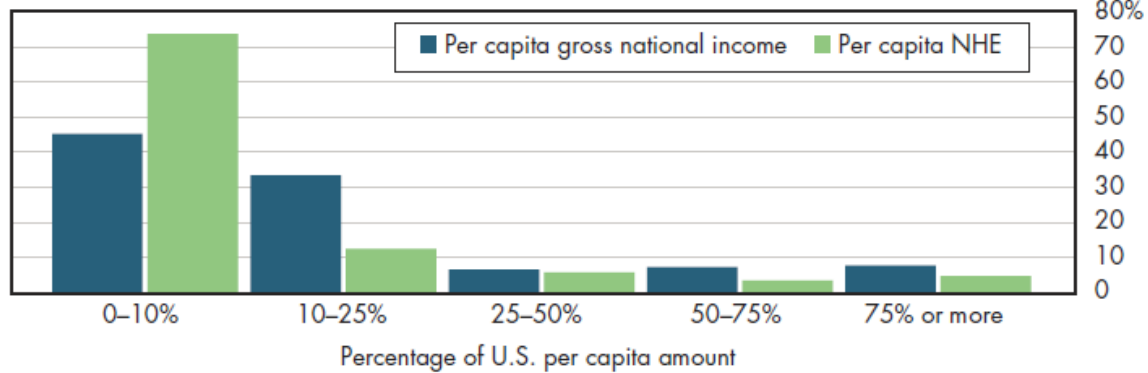
Among the world's 10 most populated countries, recent growth in per capita income has exceeded that in the United States, implying a shrinking income gap. In contrast, with the exception of Indonesia, China, and the Russian Federation, NHE per person has grown less rapidly in all of these nations compared 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
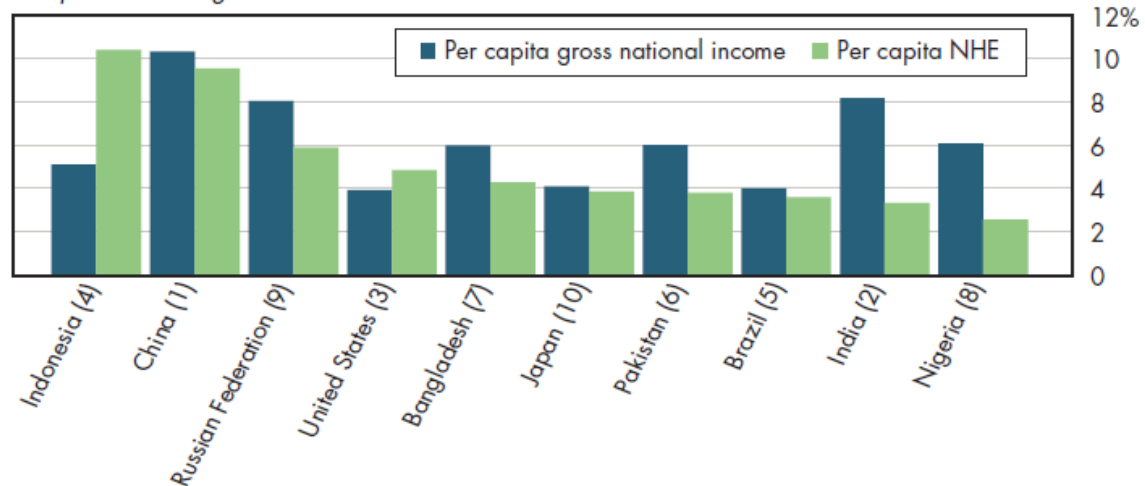
Note: Countries ranked by NHE per capita. Numbers in parentheses show ranking by size of population in 2007. Growth rates estimated from real NHE per capita (calculated in chained 2005 U.S. dollars using a GDP price deflator).

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.

1.7.1 Downloads

Download Excel tables used to create both figures: Figures 1.7a/1.7b Tables[53] . 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

 Download PowerPoint versions of all figures.

- Figure 1.7a Image Slide (as it appears above)[54]
- Figure 1.7a Editable Slide (can be formatted as desired)[55]
- Figure 1.7b Image Slide (as it appears above)[56]
- Figure 1.7b Editable Slide (can be formatted as desired)[57]
- Figure 1.7c Image Slide (as it appears above)[58]
- Figure 1.7c Editable Slide (can be formatted as desired)[59]

1.7.2 References

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

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[53]https://hub.mili.csom.umn.edu/content/m10009/latest/1.7TAB.xls
[54]https://hub.mili.csom.umn.edu/content/m10009/latest/1.7a.pptx
[55]https://hub.mili.csom.umn.edu/content/m10009/latest/1.7aDATA.pptx
[56]https://hub.mili.csom.umn.edu/content/m10009/latest/1.7b.pptx
[57]https://hub.mili.csom.umn.edu/content/m10009/latest/1.7bDATA.pptx
[58]https://hub.mili.csom.umn.edu/content/m10009/latest/1.7c.pptx
[59]https://hub.mili.csom.umn.edu/content/m10009/latest/1.7cDATA.pptx

Chapter 2

Chapter 2: How Is Each Health Dollar Spent?

2.1 2.1 Most Health Spending Is for Personal Services[1]

Different methods exist to measure spending for health care. One measure — the NHE — encompasses all private and public spending having to do with health care. However, 1 in 15 dollars of NHE includes what might be regarded as investment, including expenditures for medical research, construction of new facilities, and purchases of new major equipment (figure 2.1a).

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10002/1.2/>.

2.1a Five-sixths of NHE is devoted to PHCE
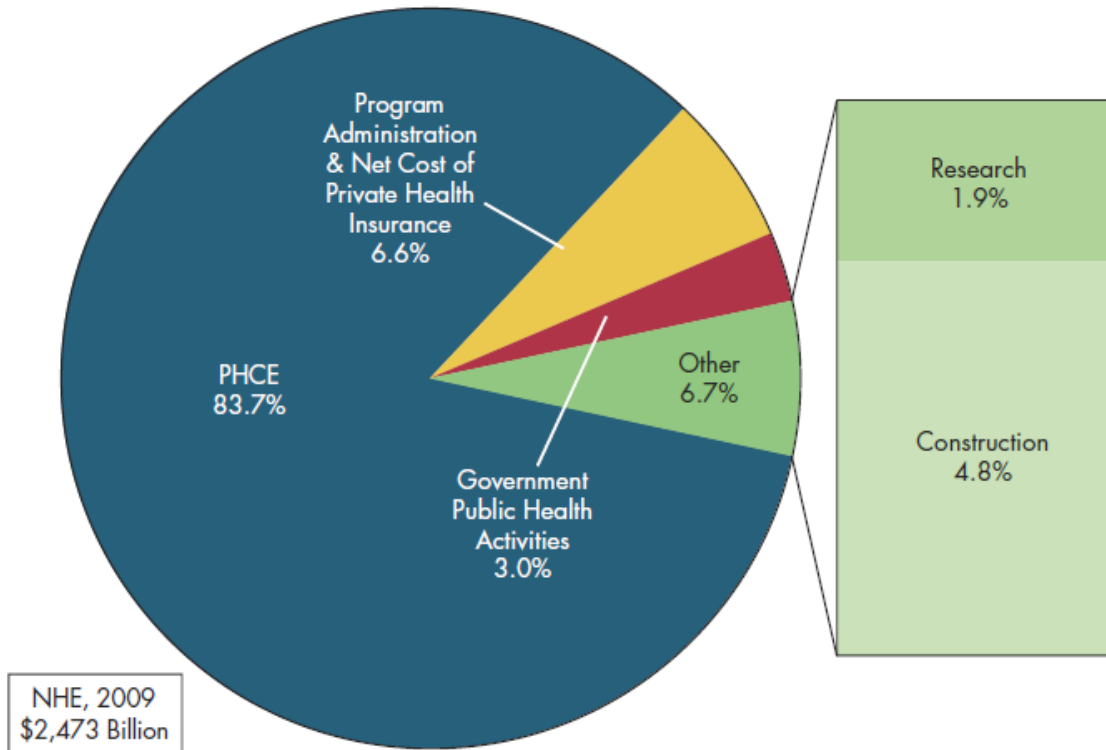
Administrative costs associated with public programs such as Medicare and Medicaid, and private health insurance plans, amount to only 1/16 of NHE. This might seem low in light of the purportedly high administrative costs associated with U.S. health care. A main reason is that it excludes large provider-related administrative costs embedded in various health services that make up personal health care expenditures (PHCE).

Government public health activity includes spending for surveillance, inoculations, immunizations and vaccinations, disease prevention activities, and public health laboratories. Currently, fewer than three cents of every health dollar goes to public health. This total should not be interpreted as a measure of all preventive health spending. As with administrative costs, the providers of various health services included under PHCE also engage in clinical preventive services. Public health spending does not capture these costs.

The remainder, PHCE, constitutes 5/6 of all health spending. This includes the full continuum of health care services ranging from primary care through long-term care (for example, nursing homes and home health care). PHCE includes inpatient care (for example, in hospitals, nursing homes, and intermediate-care facilities), and all services by medical professionals (for example, doctors, mid-level practitioners, allied health personnel). Finally, it includes ancillary services such as medical and dental laboratories, medications (prescription and non-prescription), durable medical equipment (for example, wheelchairs), non-durable medical products (for example, bandages), and even medical care provided at worksite clinics. The PHCE share of health spending has exceeded 80 percent of NHE for more than 40 years (figure 2.1b).

2.1b For 40 years, spending on personal health care has exceeded 80 percent of national health outlays

Percentage of NHE
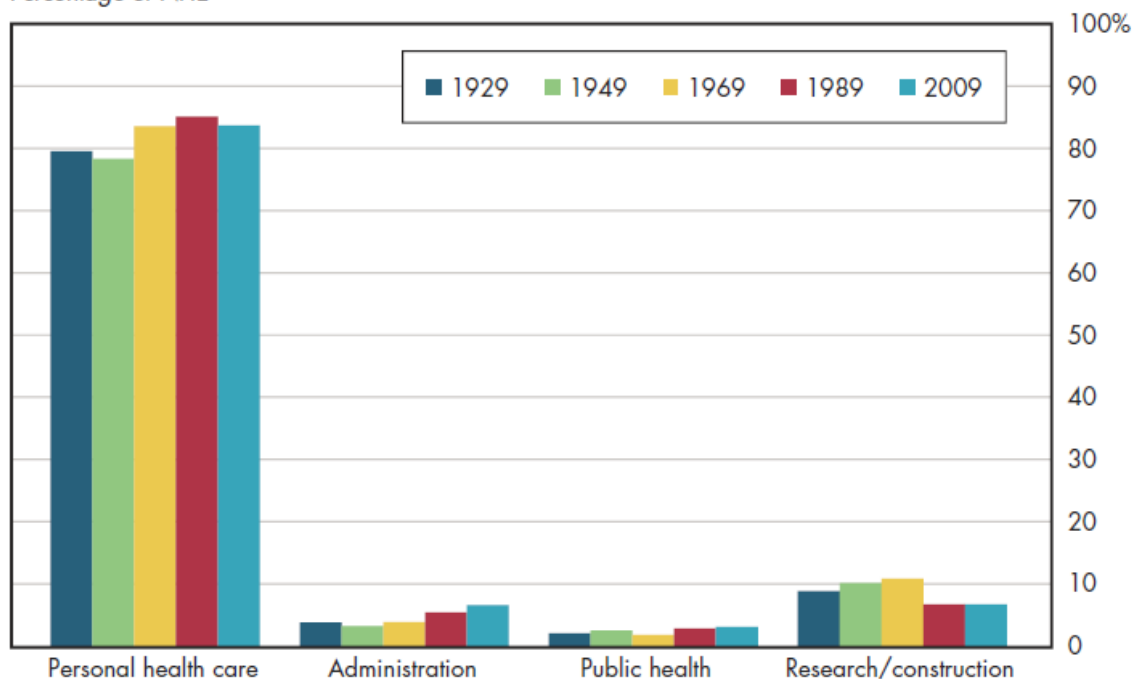
2.1.1 Downloads

Download Excel tables used to create both figures: Figures 2.1a/2.1b Tables[2] . Figures 2.1a and 2.1b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 2.1. U.S. National Health Expenditures by Type of Expenditure: 1929 to 2021

  Download PowerPoint versions of both figures.

- Figure 2.1a Image Slide (as it appears above)[3]
- Figure 2.1a Editable Slide (can be formatted as desired)[4]
- Figure 2.1b Image Slide (as it appears above)[5]
- Figure 2.1b Editable Slide (can be formatted as desired)[6]

2.1.2 References

A. Author's calculations.
B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.
C. 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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[2]https://hub.mili.csom.umn.edu/content/m10002/latest/2.1TAB.xls
[3]https://hub.mili.csom.umn.edu/content/m10002/latest/2.1aIMG.ppt
[4]https://hub.mili.csom.umn.edu/content/m10002/latest/2.1aDATA.ppt
[5]https://hub.mili.csom.umn.edu/content/m10002/latest/2.1bIMG.ppt
[6]https://hub.mili.csom.umn.edu/content/m10002/latest/2.1bDATA.ppt

2.2 2.2 Personal Health Spending Doubled Every 25 Years[7]

In terms of the constant purchasing power of health care, today's per capita spending on personal health care is 9.2 times as large as in 1929—an annual increase of 2.8 percent. Although the PCE denotes spending by individuals and households excluding goods and services used by government and business, PHCE reflects all spending on health services, including those paid by government and business.

Recall that PHCE excludes current investment in research, new construction, and equipment because their payoffs occur in the future and last more than one year. Realistically, some of the annualized costs of past investments are embedded in the prices paid to medical providers—reflecting funds borrowed to make such investments or funding of depreciation to finance replacement of aging plants and equipment. However, even these costs are understated if they were publicly subsidized.

That said, the measured total of PHCE is the best indication of the extent to which the output of the health sector contributes to the satisfaction of the wants of millions of individuals for medical services. However, PHCE surely is a lower bound on annual expenditures whose motivation is to improve health. For many other purchases (for example, food or even automobiles), health and safety considerations can play an important role. In contrast, PHCE-related purchases typically are motivated solely by considerations of health: Patients do not rely on ambulances to commute to work, nor do they seek a doctor's care to satisfy an empty stomach.

On a per capita basis, real PHCE (that is, inflation-adjusted using the GDP price deflator) has grown over the last 80 years at an annualized rate of 4.1 percent. This implies a doubling of real PHCE every 18 years. Whereas real GDP per capita was approximately 5.3 times as large in 2009 as in 1929, real PHCE per capita grew 24-fold during the same period (figure 2.2). Thus, in terms of what can be purchased in the rest of the economy, PHCE grew more than four times as fast as output.

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[7]This content is available online at <https://hub.mili.csom.umn.edu/content/m10010/1.2/>.

2.2 The rate of growth in PHCE per capita is much slower when adjusted for the effect of increasing health prices or general inflation

PHCE per capita
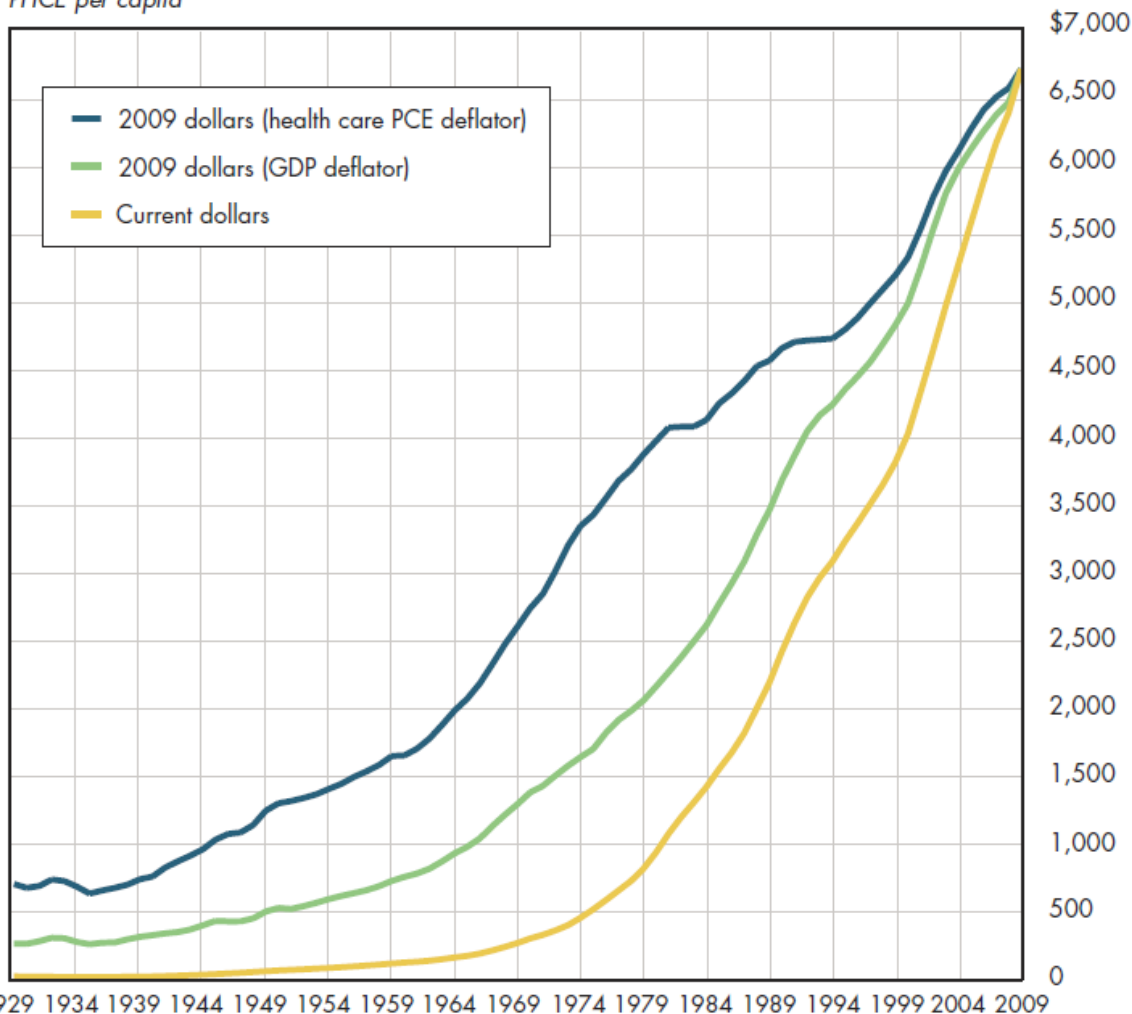
Because health prices have gone up much faster than general prices, this is not the same as saying that real resources devoted to PHCE have grown at that rate. Using the PCE deflator for health care to adjust for prices, today's real per capita PHCE is "only" 9.2 times as large as in 1929.

2.2.1 Downloads

Download Excel table used to create figure: Figure 2.2 Table[8] . Figure 2.2 was created from the following table (the workbook includes all supporting tables used to create this table):

- Table 2.2. U.S. National Health Expenditures by Type of Expenditure: 1929 to 2021

Download PowerPoint versions of figure.

- Figure 2.2 Image Slide (as it appears above)[9]
- Figure 2.2 Editable Slide (can be formatted as desired)[10]

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[8]https://hub.mili.csom.umn.edu/content/m10010/latest/2.2TAB.xls
[9]https://hub.mili.csom.umn.edu/content/m10010/latest/2.2IMG.ppt
[10]https://hub.mili.csom.umn.edu/content/m10010/latest/2.2DATA.ppt

2.2.2 References

A. Department of Commerce. Bureau of Economic Analysis.
B. Department of Commerce. Bureau of the Census.
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.

2.3 2.3 Insurer Administrative Costs Decline in Group Size[11]

Many misconceptions about insurer administrative expenses are grounded in some kernels of truth. For example, there certainly are economies of scale in the administration of health benefits, although their extent is often exaggerated. Although the unit costs of administering claims varies little across different size groups, the administrative loading factor is much higher for individual (non-group) policies compared with large group policies. For example, an insurance agent might have to spend somewhat more time to market a plan to a large group compared with marketing to an individual. But because this cost can be spread over so many lives, the unit costs of marketing are much lower for the group policy.

The administrative costs for small groups (2-50 employees in figure 2.3a) therefore fall in between those for individuals and large groups. The weighted average— accounting for the far larger number of individuals covered by large groups relative to small groups or non-group policies—is slightly more than nine cents of every premium dollar.

2.3a Because of economies of scale, administrative costs in the individual insurance market are at least twice as much as in the large group market

Administrative costs as a percentage of health insurance premiums
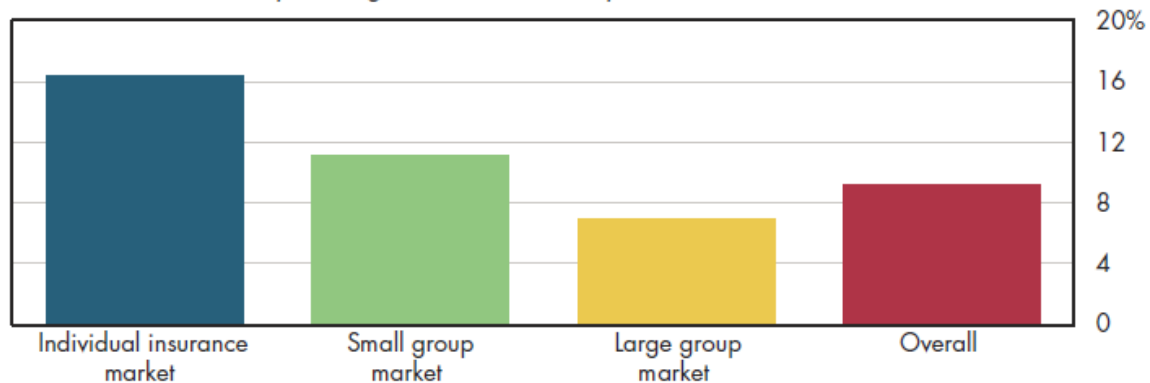
This amount is much higher than the administrative share of costs ascribed to traditional Medicare (where services are paid on a fee-for-service basis). However, that is an apples-to-oranges comparison for two reasons. First, administrators of Medicare's private health plans do not have to perform as many functions as do their private counterparts (for example, marketing and provider rate negotiations). When only Medicare administrative services are taken into account, the administrative costs for private plans are cut approximately in half (figure 2.3b). The second reason is that the average dollar amount per Medicare claim is much higher than for private insurance because the elderly and disabled use hospital and nursing home services far more than do children or non-elderly adults.

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[11]This content is available online at <https://hub.mili.csom.umn.edu/content/m10011/1.2/>.

2.3b If private health insurance covered a similar mix of services as Medicare does, this alone would cut average administrative costs by half

Administrative costs as a percentage of health insurance premiums/health spending (2009)

	10%
	8
	6
	4
	2
	0

Private,
commercial   Private, commercial, Medicare services   Traditional Medicare (CBO)   Traditional Medicare (MedPAC)
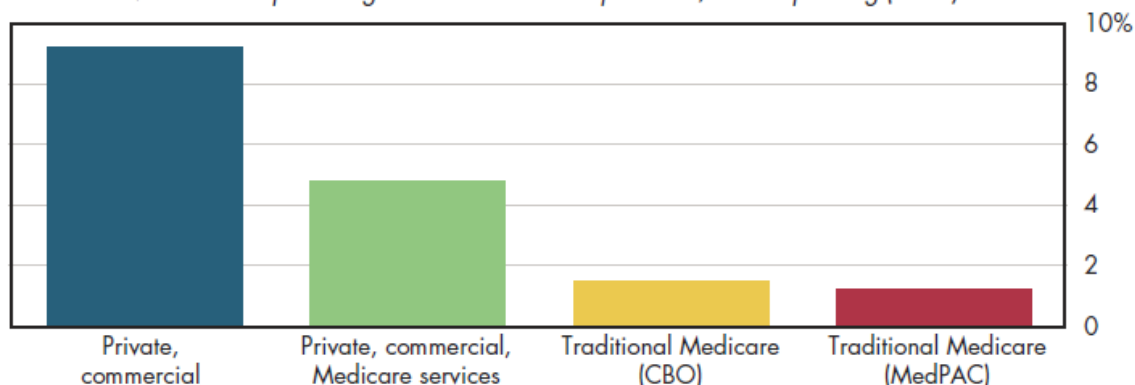
Thus, an alternative way of assessing administrative costs compares administrative costs per member per month. On average, private commercial health plans spend a little less than $25 monthly — approximately twice the amount for traditional Medicare (figure 2.3c). However, when only Medicare-comparable administrative costs are taken into account, the private plans have administrative costs per member per month almost indistinguishable from those experienced by Medicare carriers.

2.3c On a per-member per-month basis, Medicare's purported cost advantage over private plans is small or non-existent

Administrative costs per member per month (2009)

	$25
	20
	15
	10
	5
	0

Private,
commercial   Private, commercial, Medicare services   Traditional Medicare (CBO)   Traditional Medicare (MedPAC)
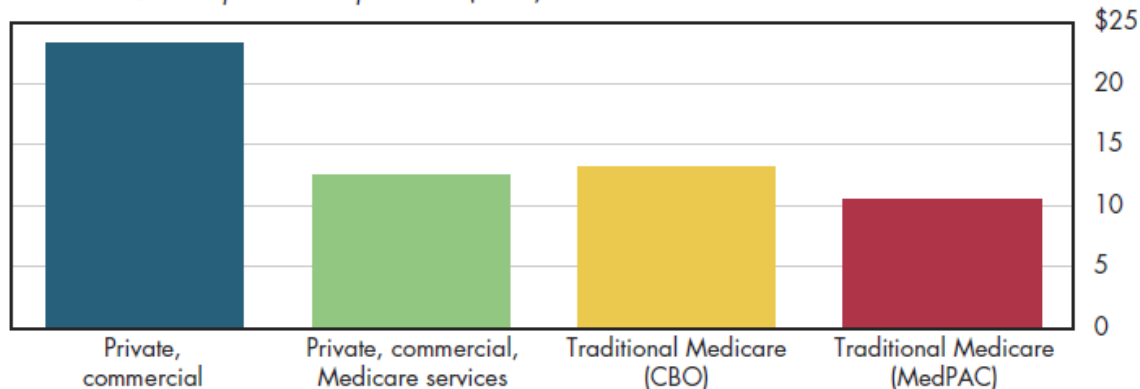
Note: Both the Congressional Budget Office (CBO) and the Medicare Payment Advisory Commission (MedPAC) have done analyses of Medicare administrative costs that are reflected in the figures above.

2.3.1 Downloads

Download Sherlock (2009)[12] used to create Figures 2.3a, 2.3b, and 2.3c:

- Figure 2.3a: Figure 5
- Figure 2.3b: Figure 8
- Figure 2.3c: Figure 7

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[12]http://s3.amazonaws.com/zanran_storage/www.bcbs.com/ContentPages/25302966.pdf

- Figure 2.3a Image Slide (as it appears above)[13]
- Figure 2.3a Editable Slide (can be formatted as desired)[14]
- Figure 2.3b Image Slide (as it appears above)[15]
- Figure 2.3b Editable Slide (can be formatted as desired)[16]
- Figure 2.3c Image Slide (as it appears above)[17]
- Figure 2.3c Editable Slide (can be formatted as desired)[18]

2.3.2 References

A. Sherlock DB. Administrative Expenses of Health Plans. Prepared for the Blue Cross Blue Shield Association. http://www.bcbs.com/issues/uninsured/Sherlock-Report-FINAL.pdf (accessed February 2010).

2.4 2.4 Trends for Components of Health Spending, 1929 to 2009[19]

The dominance of health facilities during the 1960s through 1980s has given way to a shift toward outpatient care in recent decades. Hospital care accounted for just slightly more than 20 percent of PHCE in 1929, but this share peaked at 48 percent in 1982 and has declined to less than 40 percent today (figure 2.4a). Nursing home care accounted for only slightly more than a penny per PHCE dollar in 1929, but this amount peaked in 1998 at 8.9 cents, after which it now has declined to seven cents. Combined "institutional" spending on hospitals and nursing homes was less than 25 percent of spending in 1929, but it too peaked at 56 cents per dollar of PHCE in 1982, declining to approximately 44 cents today.

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[13]https://hub.mili.csom.umn.edu/content/m10011/latest/2.3aIMG.ppt
[14]https://hub.mili.csom.umn.edu/content/m10011/latest/2.3aDATA.ppt
[15]https://hub.mili.csom.umn.edu/content/m10011/latest/2.3bIMG.ppt
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[17]https://hub.mili.csom.umn.edu/content/m10011/latest/2.3cIMG.ppt
[18]https://hub.mili.csom.umn.edu/content/m10011/latest/2.3cDATA.ppt
[19]This content is available online at <https://hub.mili.csom.umn.edu/content/m10012/1.1/>.

2.4a Professional services, once accounting for almost half of all health costs, currently account for the largest single share of spending

Percentage of PHCE
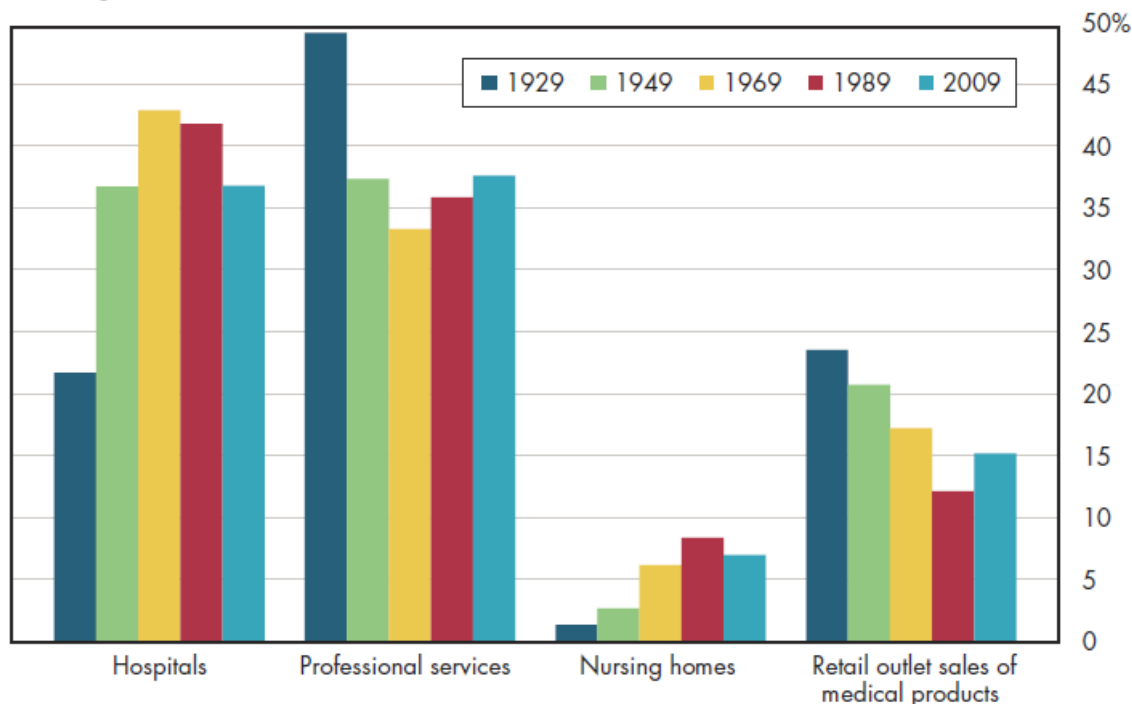
The services of health professionals, in contrast, declined from almost half of all spending in 1929 to a low of 31 cents per PHCE dollar in 1982, followed by a subsequent rise to 38 percent. Medicare began paying a flat rate per hospital stay that varied based on a patient's diagnosis in 1983. This so-called prospective payment system (PPS) provided a strong incentive to discharge patients early, resulting in a sizable decline in hospital use among the elderly in the years that followed.

Sales of non-durable medical products such as band-aids declined steadily from almost 25 percent of PHCE in 1929 to slightly more than 10 percent by 1989, but then rose to 15 percent by the year 2009. In contrast to the other medical services shown, where pricing often is far from transparent and health insurance coverage far more common, these medical products generally are sold in retail outlets such as drugstores or grocery stores, where pricing is transparent and competition fierce.

Although physician and clinical services hovered for decades at approximately 25 percent of PHCE, the dental services share of spending declined steadily (figure 2.4b). Although dental insurance coverage has expanded gradually, the out-of-pocket share of dental care is more than four times the corresponding share (less than 10 percent) of physician and clinical services that is not financed through third-party payers. Similarly, 60 percent of pharmaceuticals were paid for out-of-pocket as of 1988, compared with 20 percent by 2009. This helps explain the patterns shown.

2.4b Although the share of PHCE accounted for by dental services has declined steadily, trends for other components are mixed

Percentage of PHCE
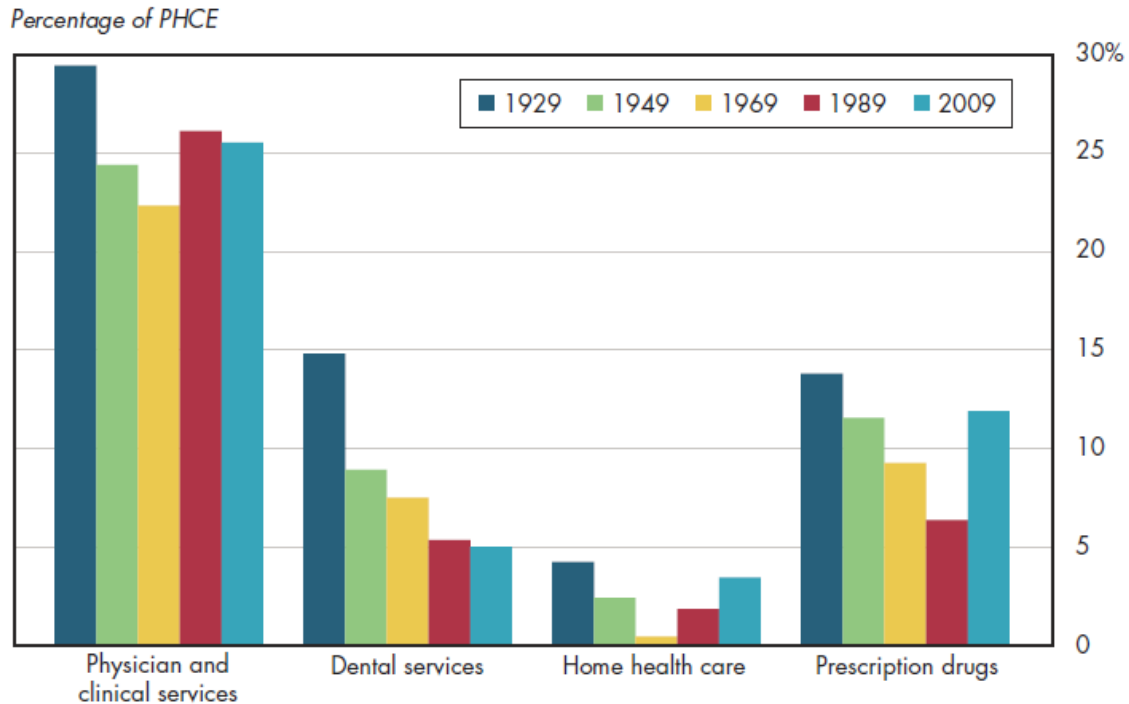
2.4.1 Downloads

Download Excel tables used to create both figures: Figures 2.4a/2.4b Tables[20] . Figures 2.4a and 2.4b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 2.1. U.S. National Health Expenditures by Type of Expenditure: 1929 to 2021

  Download PowerPoint versions of both figures.

- Figure 2.4a Image Slide (as it appears above)[21]
- Figure 2.4a Editable Slide (can be formatted as desired)[22]
- Figure 2.4b Image Slide (as it appears above)[23]
- Figure 2.4b Editable Slide (can be formatted as desired)[24]

2.4.2 References

A. Author's calculations.
B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.
C. 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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[20]https://hub.mili.csom.umn.edu/content/m10012/latest/2.4TAB.xls
[21]https://hub.mili.csom.umn.edu/content/m10012/latest/2.4aIMG.ppt
[22]https://hub.mili.csom.umn.edu/content/m10012/latest/2.4aDATA.ppt
[23]https://hub.mili.csom.umn.edu/content/m10012/latest/2.4bIMG.ppt
[24]https://hub.mili.csom.umn.edu/content/m10012/latest/2.4bDATA.ppt

2.5 2.5 Chronic Diseases Account for Big and Increasing Share of Health Spending[25]

Just over half of adult health spending pays for chronic conditions. However, this average masks a lot of variation across age groups. For adults younger than age 35, just less than 30 percent of spending is specifically attributable to treating chronic conditions. In contrast, among the elderly, the share of PHCE having to do with chronic conditions is approximately double this level (figure 2.5a).

2.5a Approximately half of adult health spending is for chronic conditions; 90 percent of spending is for adults who have at least one such condition
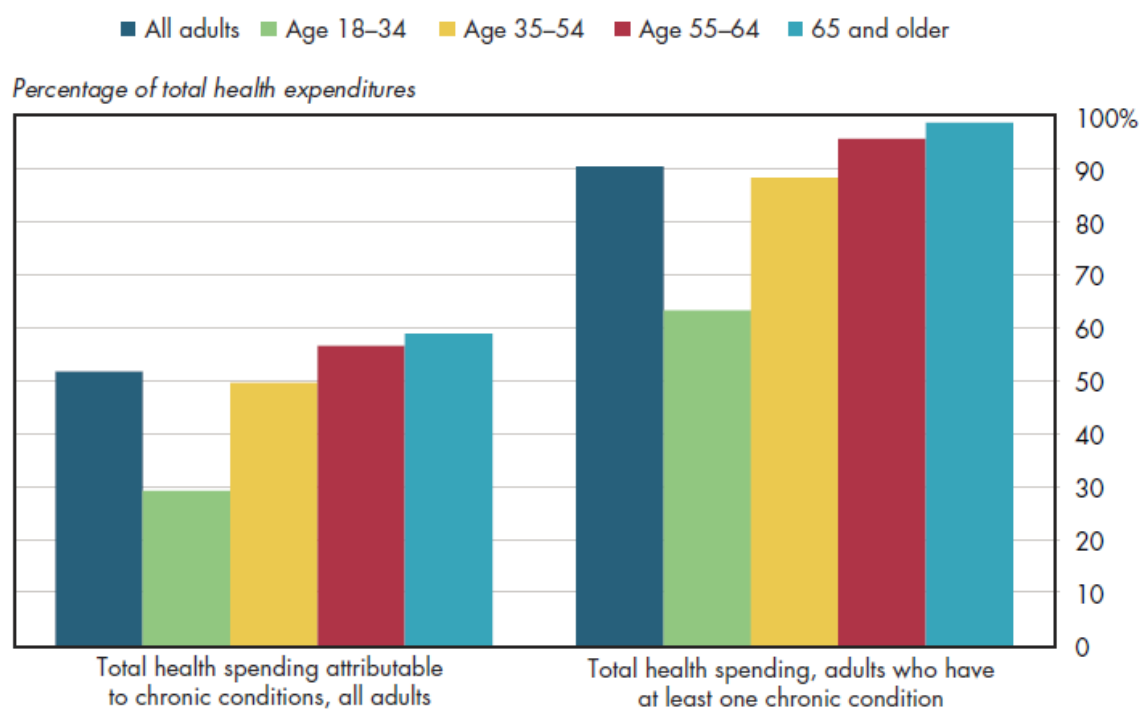
Approximately 60 percent of civilian adults not living in institutions have at least one chronic condition. Again, this ranges from a low of 36 percent of young adults to approximately 92 percent of the elderly. Consequently, those with at least one chronic condition account for more than 60 percent of total PHCE among young adults and 99 percent among the elderly.

Chronic conditions are one reason that health expenditures increase so dramatically by age — something that will be examined in more detail (refer to figure 12.4a). Among adults having no chronic conditions, annual health expenses in 2005 averaged less than $1,000 per person, with elderly individuals experiencing only slightly higher spending than their adult counterparts in the lowest age category.

Average spending for those who had one or more chronic conditions was approximately 2.5 times as high as for those who had no such conditions—ranging from approximately 1.5 for young adults to almost 3.5 for the elderly (figure 2.5b). This rising differential with age reflects two mutually reinforcing effects. First, average spending per person for a given number of conditions rises with age. Thus, among adults with just one chronic condition, per capita spending for elderly adults is more than triple the annual spending incurred by their counterparts in the young adult age group. Some of this difference reflects the high cost of dying.

[25]This content is available online at <https://hub.mili.csom.umn.edu/content/m10013/1.1/>.

2.5b Compared with those who have no chronic illness, annual health costs are two to three times as much for adults who do have one or more chronic conditions

Annual medical expenses per person (dollars)
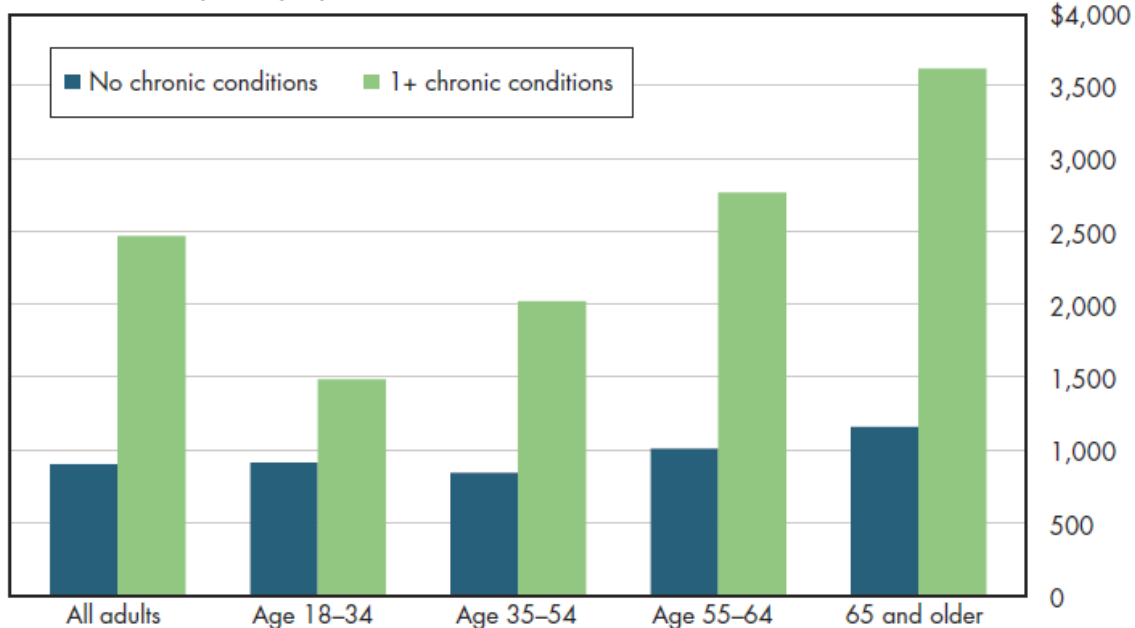
Note: Estimates exclude expenses for dental care, or other medical equipment and services.

Second, the average number of chronic conditions per person also rises with age. The prevalence of two or more chronic conditions is more than five times as large for elderly adults compared with young adults (hence the reason for pre-existing conditions to matter so much in accurately pricing health insurance coverage). Set- ting prices based solely on age captures some of the variation that arises because of age-related differences in the rate and cost of chronic conditions. However, even within a fixed age group, the number and nature of chronic conditions results in large cost differences.

2.5.1 Downloads

Download Excel tables used to create both figures: Figures 2.5a/2.5b Tables[26] . Figures 2.5a and 2.5b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 2.5. Adult Health Expenditures for Chronic Conditions, 2005

 Download PowerPoint versions of both figures.

- Figure 2.5a Image Slide (as it appears above)[27]
- Figure 2.5a Editable Slide (can be formatted as desired)[28]
- Figure 2.5b Image Slide (as it appears above)[29]
- Figure 2.5b Editable Slide (can be formatted as desired)[30]

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[26]https://hub.mili.csom.umn.edu/content/m10013/latest/2.5TAB.xls
[27]https://hub.mili.csom.umn.edu/content/m10013/latest/2.5aIMG.ppt
[28]https://hub.mili.csom.umn.edu/content/m10013/latest/2.5aDATA.ppt
[29]https://hub.mili.csom.umn.edu/content/m10013/latest/2.5bIMG.ppt
[30]https://hub.mili.csom.umn.edu/content/m10013/latest/2.5bDATA.ppt

2.5.2 References

A. Machlin S, JW Cohen and K Beauregard. Health Care Expenses for Adults with Chronic Conditions, 2005. Statistical Brief #203. May 2008. Agency for Health-care Research and Quality. Rockville MD. http://www.meps.ahrq.gov/mepsweb/data_files/publications/st203.pdf (accessed November 14, 2010).

2.6 2.6 Half or More of Personal Health Spending Is Avoidable[31]

Accounting for expenditures based on disease classification clouds the extent to which much health spending is avoidable. Consider the underlying causes of diseases that give rise to health spending. Figure 2.6 lists 15 such causes, together with estimates of the share of 2009 PHCE attributable to these causes. These are approximate estimates calculated by estimating the fraction of PHCE devoted to underlying causes in a reference year (usually 2000 or later, but in some cases as early as 1992). This fraction was assumed to be identical in 2009.

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[31]This content is available online at <https://hub.mili.csom.umn.edu/content/m10014/1.2/>.

2.6 Probably half or more of health spending has to do with behavior, lifestyle, or other avoidable causes

Attributable costs as a percentage of PHCE (2009)
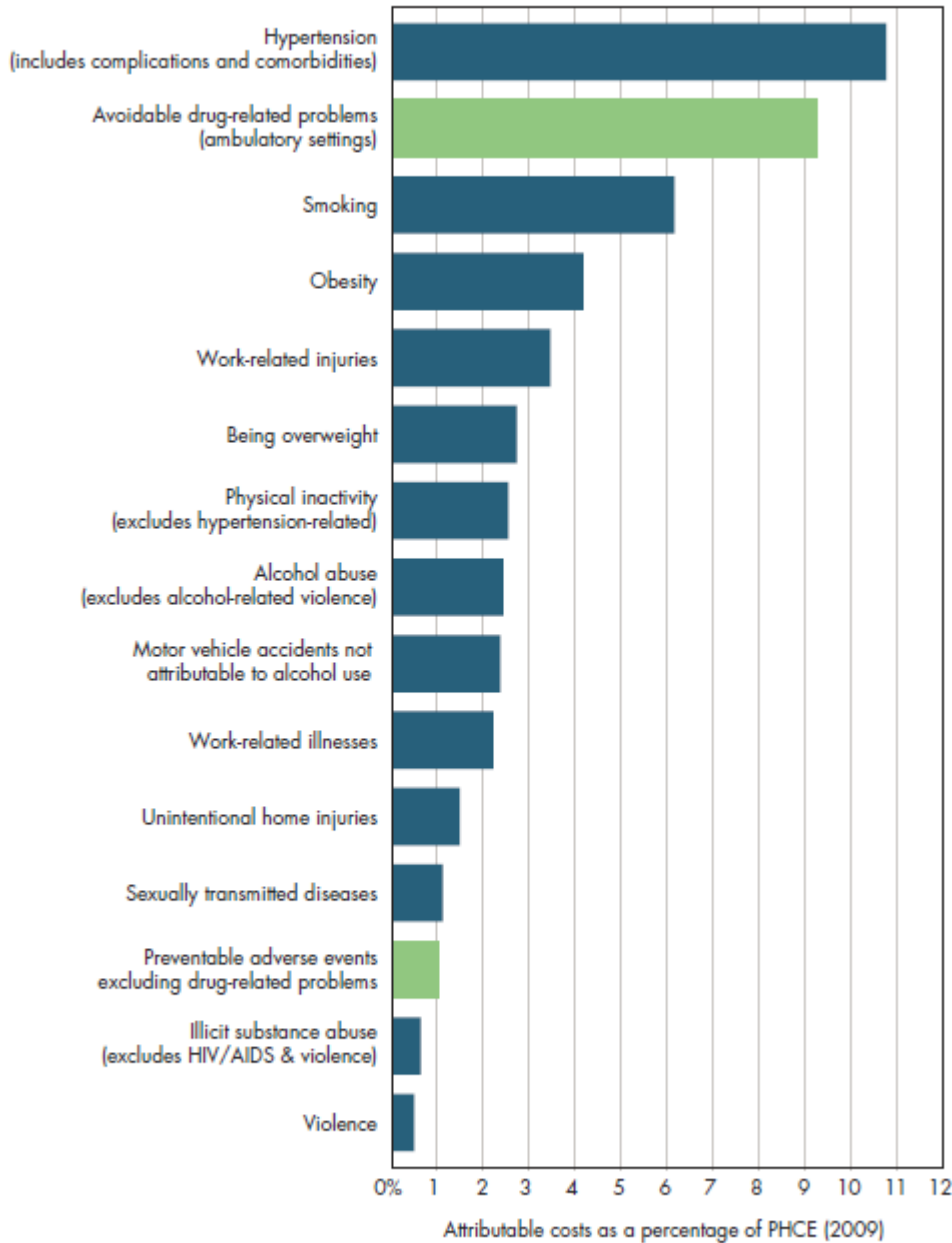
Note: Every effort has been made to create mutually exclusive categories, but in some cases, some duplication across categories is unavoidable.

Another caveat is that there might be some overlap between categories. Although every effort was made to create categories that were mutually exclusive, limitations in how data were reported sometimes precluded doing this in every case where it was needed. Taken at face value, these 15 categories collectively account for just over half of PHCE. In light of the minimal duplication that remains, it appears almost certain that these categories collectively account for a minimum of 40 percent of PHCE.

Figure 2.6 defines behavior broadly, including efforts by individual people to live healthier lives. It also

can include actions taken to improve health system performance (shown in green, for example, reducing medical errors), other worksite activities to improve worker safety, transportation safety efforts to improve the quality of roads and/or automobiles, or even efforts to improve nutrition for schoolchildren.

Note that the data represent the gross amount of health spending that hypothetically could be avoided in a perfect world. Because we do not live in a perfect world, it is not possible to eradicate every dollar of avoidable spending. Although individual efforts to "try harder" can yield fruitful results virtually without costs, any serious effort to influence spending of this magnitude would require an investment of resources to alter systems (for example, electronic medical records to reduce medication errors) or behaviors (for example, smoking cessation aids). Although it never would make sense to spend a dollar to save less than a dollar, some of these initiatives might well use a sizable fraction of the potential savings. Thus, it would be imprudent to spend hundreds of billions in potential savings before ascertaining the actual net savings attainable.

2.6.1 References

A. Colditz GA. Economic Costs of Obesity and Inactivity. Medicine and Science in Sports and Exercise 1999; 31(11):S663-S667.
B. Department of Health and Human Services. Centers for Disease Control and Prevention.
C. Department of Transportation. National Highway Traffic Safety Administration.
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G. Harwood H, D Fountain and G Livermore. The Economic Costs of Alcohol and Drug Abuse in the United States 1992. Report prepared for the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism. National Institutes of Health. Department of Health and Human Services. NIH Publication No 98-4327. Rockville MD. NIH 1998. http://www.nida.nih.gov/EconomicCosts/ (accessed March 28, 2010).
H. Harwood H. Updating Estimates of the Economic Costs of Alcohol Abuse in the United States: Estimates, Update Methods, and Data. Report prepared by the Lewin Group for the National Institute on Alcohol Abuse and Alcoholism. December 2000. http://pubs.niaaa.nih.gov/publications/economic-2000/alcoholcost.pdf (accessed March 28, 2010).
I. Zaloshnja E, TR Miller, BA Lawrence and E Romano. The Costs of Unintentional Home Injuries. American Journal of Preventive Medicine 2005; 28(1):88-94.

2.6.1.1 Downloads

Download Excel tables used to create figure: Figure 2.6 Table[32] . Figure 2.6 was created from the following table (the workbook includes all supporting tables used to create this table):

- Table 2.6. Distribution of U.S. Personal Health Expenditures (PHCE) Related to Selected Behavior, Lifestyle or Other Avoidable Causes, 2011 and 2013

Download PowerPoint versions of figure.

- Figure 2.6 Image Slide (as it appears above)[33]
- Figure 2.6 Editable Slide (can be formatted as desired)[34]

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[32]https://hub.mili.csom.umn.edu/content/m10014/latest/2.6TAB.xls
[33]https://hub.mili.csom.umn.edu/content/m10014/latest/2.6IMG.ppt
[34]https://hub.mili.csom.umn.edu/content/m10014/latest/2.6DATA.ppt

Chapter 3

Chapter 3: Who Pays for Health Services?

3.1 3.1 Role of Public Sector in US Health Financing Has Increased[1]

Examining health financing from the standpoint of who literally pays the final bills, a rather steady expansion in the public-sector share of NHE that goes back at least 80 years becomes obvious (figure 3.1a). Starting in the 1960s, when both Medicare and Medicaid first began, the public share of financing increased much more sharply than it had previously.

3.1a Since 1965, the increasing federal share of PHCE has displaced much private and state health spending
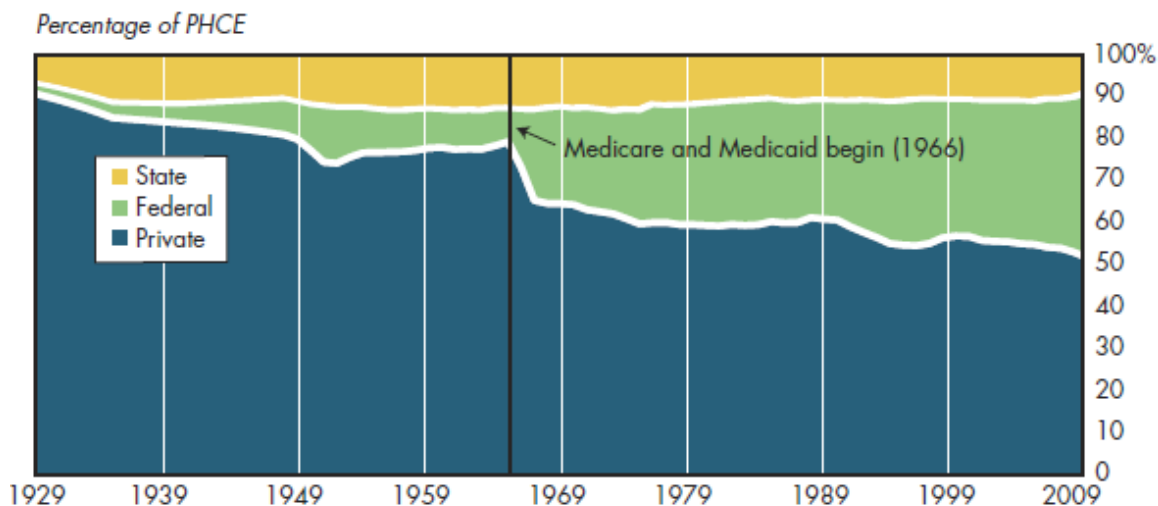
Note: In the NHE Accounts framework, federal government health spending includes all of Medicare (including components financed privately, such as Parts B and D premiums), the federal share of Medicaid spending, and other public health-related programs such as DOD and VA health. State/local government 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.

From this standpoint of government as payer, Medicare is a federal responsibility because all funds flow through the general treasury before distribution to private administrators who pay claims from providers.

[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10015/1.2/>.

This includes all the payroll taxes used to support Part A (inpatient hospital and nursing home services), together with the voluntary premiums for Part B (physician and other outpatient services) and Part D (prescription drugs). Medicaid—jointly financed by the federal and state governments —nominally increased state and local responsibility for care. In reality, the greatly expanded federal role in health care financing in 1965 displaced much of the traditional state and local government role in paying for care of the poor, disabled, and elderly. Consequently, the state and local share of health spending declined steadily since the 1960s as the federal share expanded. The federal displacement of private insurance and family out-of-pocket payments in this period was even greater.

An alternative way to view health spending is in terms of sources of revenue. Even though households ultimately incur the burden of all health spending, it is possible to differentiate revenues flowing from households, businesses, and various levels of government. In this so-called sponsor view, half of Medicare payroll taxes are assumed to be paid by employers and half paid by employees (households) rather than by the federal government. Conversely, the cost of the Federal Employee Health Benefits Plan (FEHBP) is shifted from private insurers (under the payer view) to the federal government (employer contributions) and households of covered members (premiums paid by federal employees/retirees).

From this sponsor view of health financing, the relative shares of spending paid by business, households, the federal government, and state and local governments have been remarkably stable over the past 20 years (figure 3.1b). Nevertheless, the public role in financing has grown slightly over this period.

3.1b Accounting for each sponsor's share of health revenues results in a much more stable federal share of spending over 20 years

Note: In the framework of "health sponsors," household health spending includes only components that are directly paid, including the employee share of group health insurance premiums, the employee share of Medicare Part A payroll taxes, voluntary premiums paid for Medicare Parts B or D and non-group health insurance, and any out-of-pocket spending not covered by public or private insurance. Business health expenditures include only the private employer share of health insurance premiums for workers and dependents, Medicare Part A and workers' compensation, and industrial in-plant health services.

3.1.1 Downloads

Download Excel workbooks used to create Figure 3.1a Tables[2] and Figure 3.1b Tables[3] . [Note that you'd have separate links for each set of tables] Figures 3.1a and 3.1b were created from the following tables (the workbook includes all supporting tables used to create this table):

- Fig. 3.1a: Table 3.1.1. U.S. Personal Health Expenditures by Source of Funds: 1929 to 2021
- Fig. 3.1b: Table 3.1.2. Distribution of National Health Expenditures by Sponsor: 1987 to 2011

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- Figure 3.1a Image Slide (as it appears above)[4]
- Figure 3.1a Editable Slide (can be formatted as desired)[5]
- Figure 3.1b Image Slide (as it appears above)[6]
- Figure 3.1b Editable Slide (can be formatted as desired)[7]

3.1.2 References

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

3.2 3.2 Private Health Insurance Pays Less Than Public[8]

Under the payer view, private health insurance pays for a somewhat smaller share of health spending than do Medicare and Medicaid combined (figure 3.2a). As noted earlier, the Medicare share includes all components paid by Medicare, regardless of source. These include Medicare payroll taxes from all employers (including state and local governments), all premium payments (including premiums paid by state governments under Medicaid for individuals dual-eligible for both programs), and all federal general funds used to finance Parts B, C (managed care plans), and D (prescription drugs).

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[2]https://hub.mili.csom.umn.edu/content/m10015/latest/3.1aTAB.xls
[3]https://hub.mili.csom.umn.edu/content/m10015/latest/3.1bTAB.xls
[4]https://hub.mili.csom.umn.edu/content/m10015/latest/3.1aIMG.ppt
[5]https://hub.mili.csom.umn.edu/content/m10015/latest/3.1aDATA.ppt
[6]https://hub.mili.csom.umn.edu/content/m10015/latest/3.1bIMG.ppt
[7]https://hub.mili.csom.umn.edu/content/m10015/latest/3.1bDATA.ppt
[8]This content is available online at <https://hub.mili.csom.umn.edu/content/m10016/1.2/>.

3.2a Private health insurance pays slightly less for personal health care than do Medicare and Medicaid combined
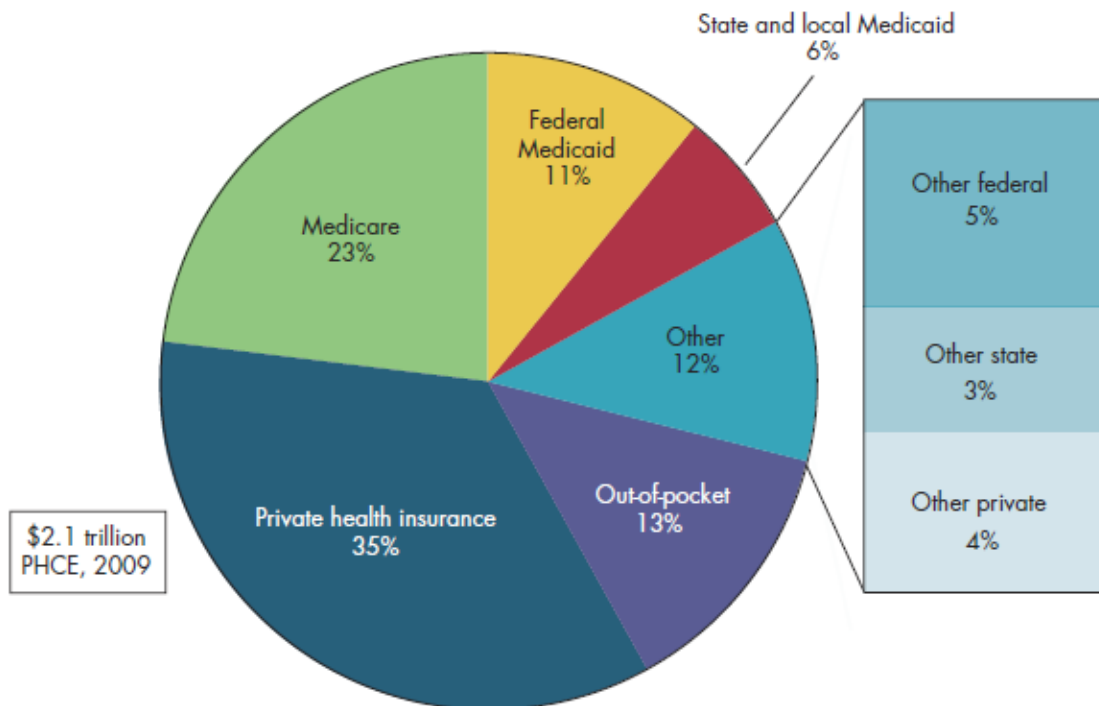
The federal government also covers approximately two-thirds of Medicaid benefits costs, with state and local governments picking up the balance. When all other federal and state programs for direct health services, such as community health centers, local health departments, and maternal and child health are taken into account, government currently finances slightly less than half of all PHCE.

Private health insurance includes all directly purchased health insurance (non-group plans) and all group plans such as employer-sponsored plans, including plans for public employees and self-insured plans typically offered by large employers. In the latter plans, the employer is at risk for most or all of the costs of health services for plan members. However, health claims under such plans usually are processed by private health insurers or third-party administrators.

Out-of-pocket spending (which includes only payments made at the time of service, but not premium payments for either private or public health insurance) accounts for only 14 percent of spending.

Although Medicare covers more than 90 percent of the elderly, public health plans cover fewer than half of children and younger adults (figure 3.2b). Employer-sponsored insurance covers a majority of both groups. Public insurance — notably Medicaid — is more common for children than for younger adults. In the entire population, Medicare and Medicaid constitute less than 30 percent of coverage (this will increase if health reform is implemented). The large mismatch between shares of spending and population illustrate that public plans already cover many of those who are most sick.

3.2b Children and the elderly rely much more on public health insurance than adults younger than age 65 do

Percentage of population who have coverage (March 2009)
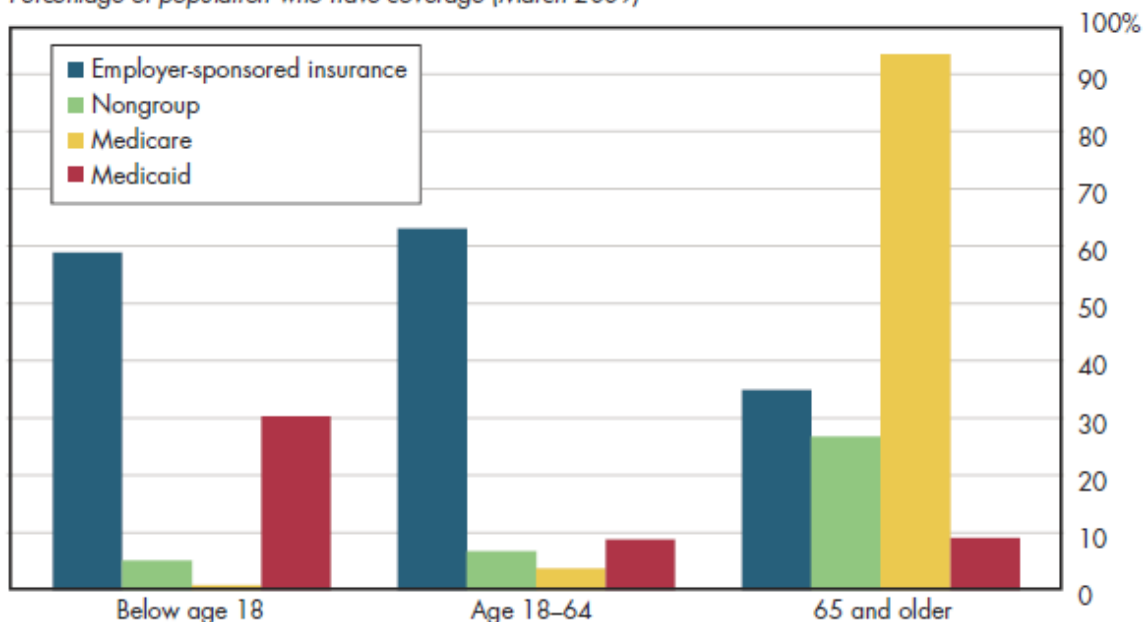
Note: Figures add to more than 100% for each age category because of individuals with more than one form of health insurance coverage.

3.2.1 Downloads

Download Excel workbooks used to create Figure 3.2a Tables[9] and Figure 3.2b Tables[10] . [Note that you'd have separate links for each set of tables] Figures 3.2a and 3.2b were created from the following tables (the workbook includes all supporting tables used to create this table):

- Fig. 3.2a: Table 3.1.1. U.S. Personal Health Expenditures by Source of Funds: 1929 to 2021
- Fig. 3.2b: Table 3.2. Distribution of Health Insurance Coverage by Type and Age, 2011

Download PowerPoint versions of both figures.

- Figure 3.2a Image Slide (as it appears above)[11]
- Figure 3.2a Editable Slide (can be formatted as desired)[12]
- Figure 3.2b Image Slide (as it appears above)[13]
- Figure 3.2b Editable Slide (can be formatted as desired)[14]

3.2.2 References

A. Department of Commerce. Bureau of the Census.

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[9]https://hub.mili.csom.umn.edu/content/m10016/latest/3.2aTAB.xls
[10]https://hub.mili.csom.umn.edu/content/m10016/latest/3.2bTAB.xls
[11]https://hub.mili.csom.umn.edu/content/m10016/latest/3.2aIMG.ppt
[12]https://hub.mili.csom.umn.edu/content/m10016/latest/3.2aDATA.ppt
[13]https://hub.mili.csom.umn.edu/content/m10016/latest/3.2bIMG.ppt
[14]https://hub.mili.csom.umn.edu/content/m10016/latest/3.2bDATA.ppt

B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.

3.3 3.3 Health Insurance Financed Growth in Health Spending[15]

Health spending as a percentage of GDP has more than tripled since 1949 (figure 3.3a). The share of GDP paid through out-of-pocket health spending has declined steadily during this same period (except in a handful of years). The growing share of expenditures paid by private insurance and public insurance has bankrolled the entire increase in the health sector share of the economy during this time.

3.3a Since 1949, all the growth in the personal health spending share of GDP has come from increased payments by third parties

PHCE as percentage of GDP
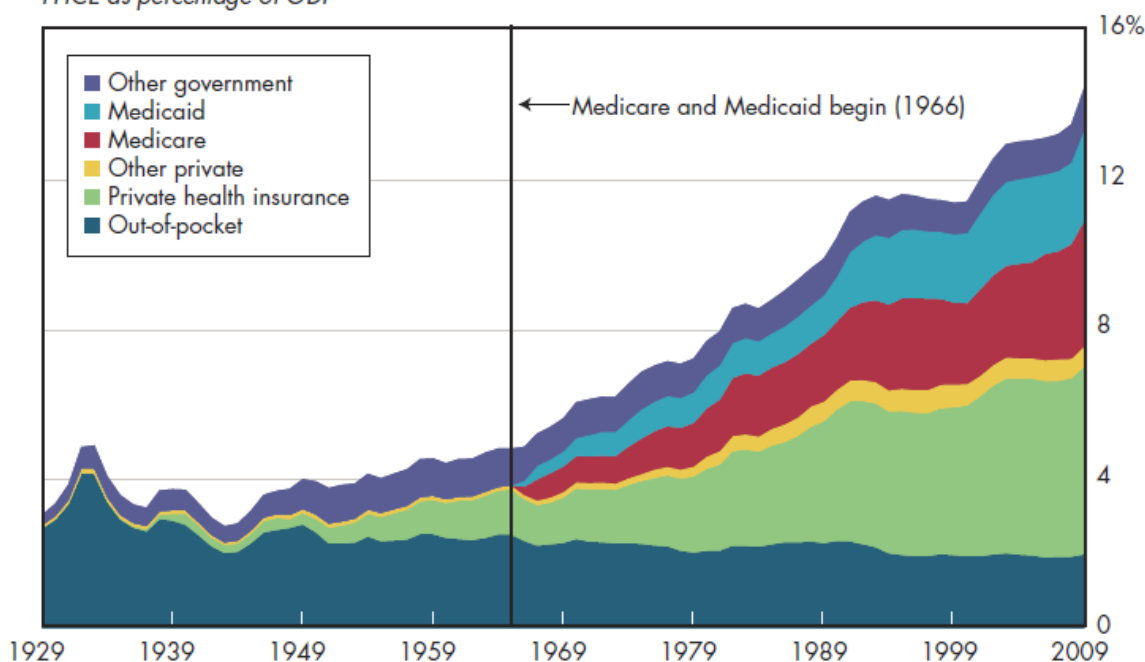
There was little private insurance in 1929, but it grew rapidly after World War II. This was fueled by an IRS decision (later codified into law) that employer-provided fringe benefits (including health insurance) would not be taxable. Thus, a dollar of employer-paid health insurance was more valuable to the employee than a dollar of wages from which taxes were deducted. In 1965, Medicare and Medicaid displaced what might have been continued growth in private insurance, as shown in figure 3.3a. In fact, for several years in the late 1960s, the private insurance share of GDP declined slightly. Even so, this share more than tripled between 1969 and 2009.

Spending on other government programs also declined slightly with the introduction of public health insurance coverage. This makes sense insofar as Medicaid in particular replaced many state and local programs that had provided direct medical services to indigent individuals. Even so, such other government spending subsequently grew for a period before declining rather steadily until today.

At a more fine-grained level, Medicare grew in size somewhat more rapidly than did Medicaid, while growth in Medicaid slightly outpaced the rate of growth in private insurance.

An alternative view of the same data shows more clearly how public spending grew as a share of personal health spending after World War II, but subsequently was eclipsed in importance by the rapid rise of private health insurance (figure 3.3b). However, this explosion in private health insurance also halted temporarily,

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[15]This content is available online at <https://hub.mili.csom.umn.edu/content/m10017/1.1/>.

starting in 1966 when both Medicaid and Medicare began. Even so, within a few years, although the Medicaid and Medicare shares of spending continued to grow, the role of private health insurance also began to increase.

3.3b Tax-financed health spending expanded more rapidly than private health insurance did after 1965

Percentage of PHCE
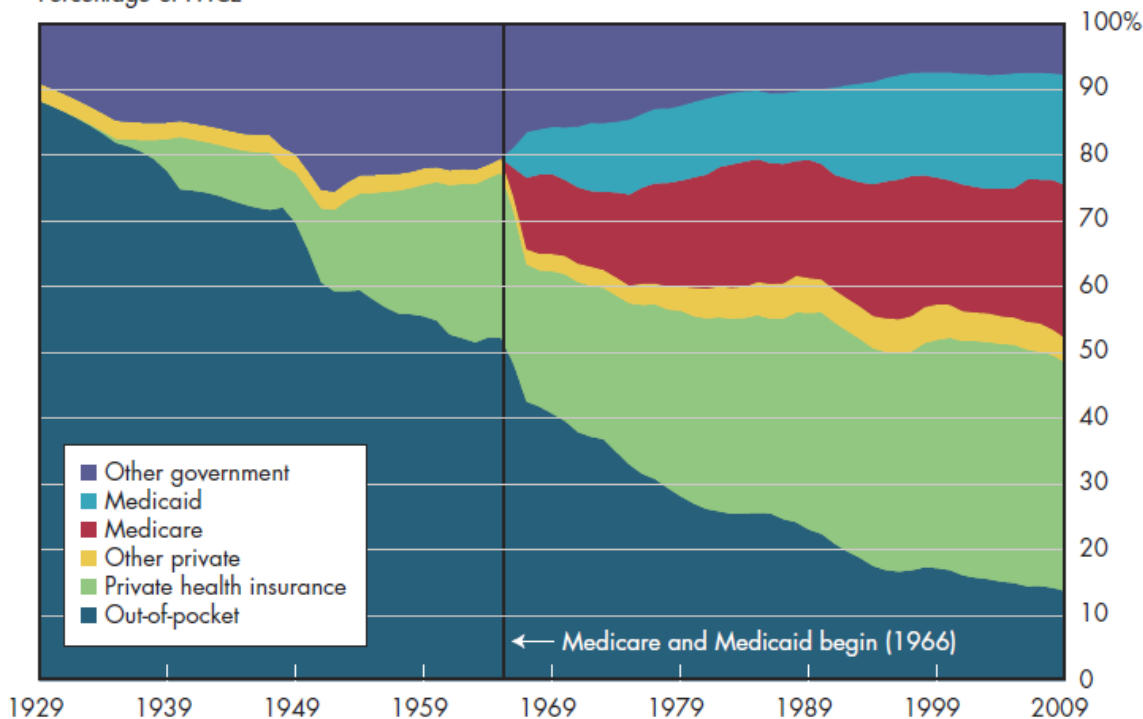
3.3.1 Downloads

Download Excel tables used to create both figures: Figures 3.3a/3.3b Tables[16] . Figures 3.3a and 3.3b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 3.3. U.S. Personal Health Expenditures by Selected Source of Funds: 1929 to 2021

  Download PowerPoint versions of both figures.

- Figure 3.3a Image Slide (as it appears above)[17]
- Figure 3.3a Editable Slide (can be formatted as desired)[18]
- Figure 3.3b Image Slide (as it appears above)[19]
- Figure 3.3b Editable Slide (can be formatted as desired)[20]

3.3.2 References

A. Author's calculations.

[16]https://hub.mili.csom.umn.edu/content/m10017/latest/3.3TAB.xls
[17]https://hub.mili.csom.umn.edu/content/m10017/latest/3.3aIMG.ppt
[18]https://hub.mili.csom.umn.edu/content/m10017/latest/3.3aDATA.ppt
[19]https://hub.mili.csom.umn.edu/content/m10017/latest/3.3bIMG.ppt
[20]https://hub.mili.csom.umn.edu/content/m10017/latest/3.3bDATA.ppt

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.

3.4 3.4 Federal Tax Subsidies for Health Exceed Federal Spending on Medicaid[21]

3.4a More than 90 percent of tax expenditures used to subsidize health care is from the tax exclusion for employee health benefits
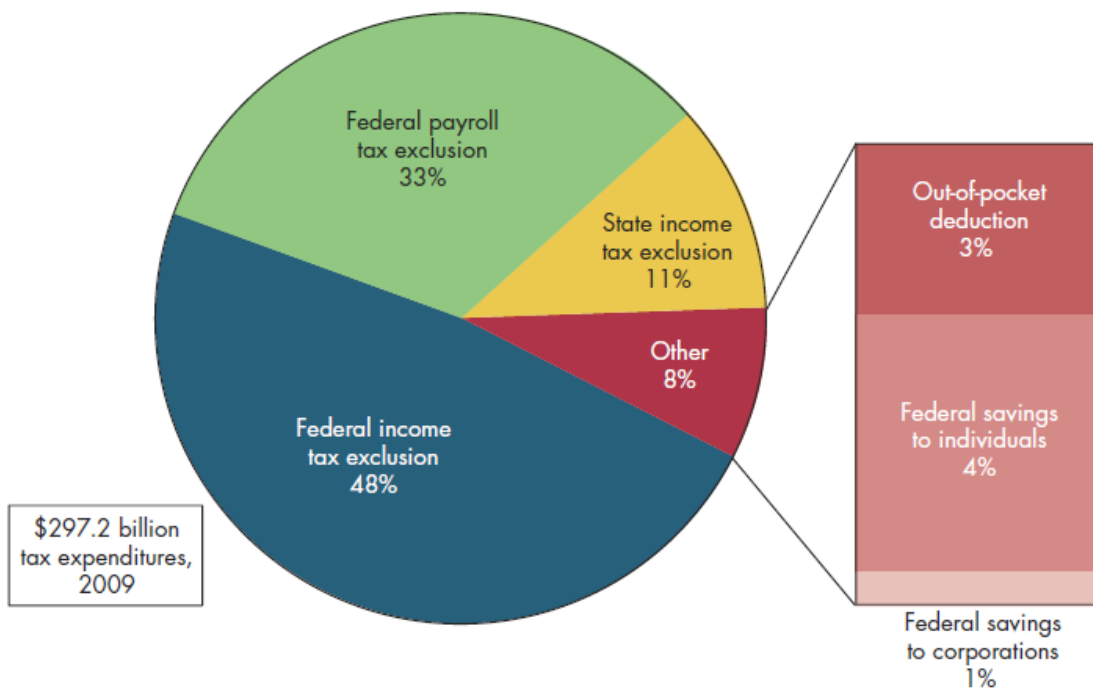
Tax subsidies having to do with health care now amount to approximately $300 billion a year. The federal share of this total is more than the federal government now pays for its share of Medicaid. Thus, ironically, the federal government in 2009 paid more to encourage employer-based health insurance than it spent on public health insurance for those who have low incomes, although this no longer will be true whether or not health reform is implemented.

Tax expenditures represent the lost tax revenue associated with giving more favorable treatment to particular actions or activities. Unlike Medicare and Medicaid, such subsidies do not show up as a line item in the federal budget either as expenditures or as deductions from expected revenue. For this reason, tax expenditures are far less visible to most Americans than are the direct expenditures financed by the national treasury.

Health-related tax expenditures take many forms, but more than 90 percent of costs attributable to them relate to the previously mentioned tax exclusion. This tax exclusion results in income tax losses at the federal and state levels, but also payroll taxes for Medicare and Social Security. By comparison, other tax expenditures (such as the Schedule B deduction for households that have large health expenses relative to income) are minuscule. The large expense threshold currently is 7.5 percent of adjusted gross income (AGI)

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[21]This content is available online at <https://hub.mili.csom.umn.edu/content/m10018/1.1/>.

but will increase to 10 percent in 2013 under the new health reform bill. Other miscellaneous health-related tax benefits received by individuals or corporations account for even smaller amounts of tax expenditures.

The magnitude of tax expenditures changes the picture of who is actually paying for health care. In the traditional payer view of financing, business accounts for more than 40 percent of spending, while the federal government accounts for just over 30 percent. With tax expenditures factored into NHE, the federal government by far becomes the largest payer, accounting for 45 percent of spending (figure 3.4b, left columns). All levels of government account for almost 60 percent of NHE compared with less than half this amount when tax expenditures are ignored. Even under the sponsor view of health spending described previously, government accounts for more than half of all health spending when tax expenditures are made visible.

3.4b Failure to account for health-related tax subsidies substantially understates the government share of NHE
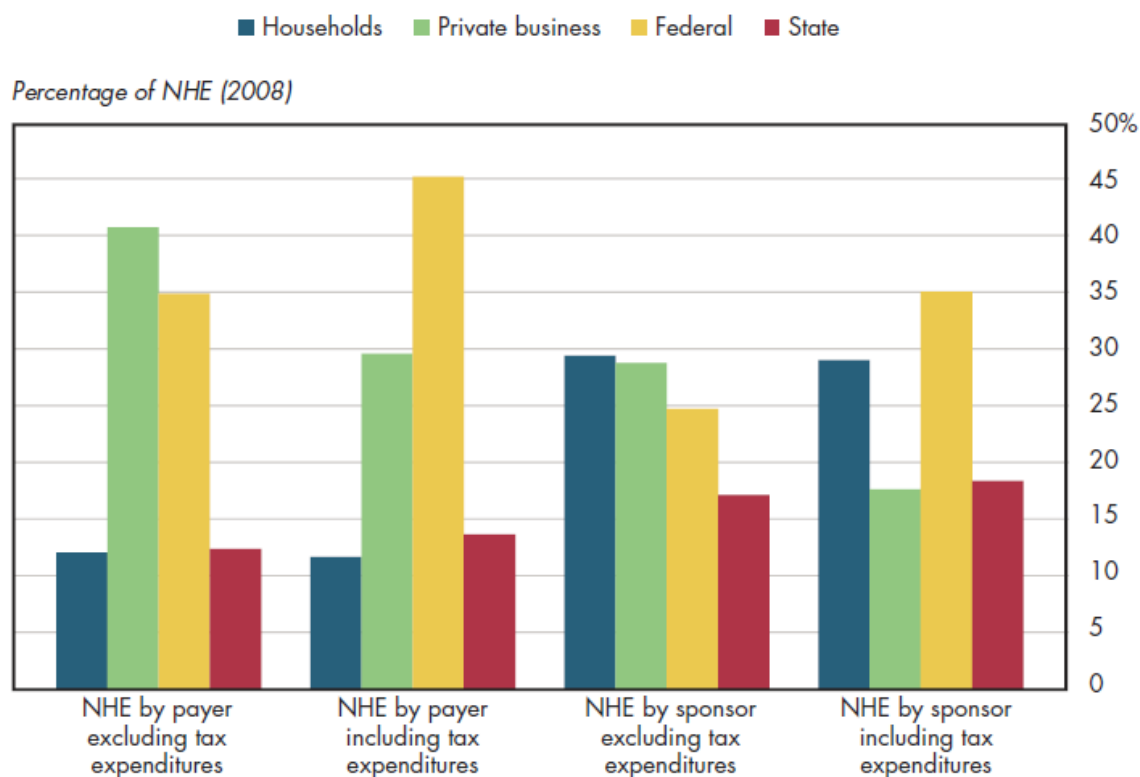
One in seven dollars of personal health care spending now is paid for out-of-pocket compared with seven in eight dollars 80 years ago (figure 3.5a). This by far is the most significant change in health care financing over the past 80 years. Combining all other spending into a single amount, figure 3.5a illustrates quite clearly that the "wedge" of health insurance payments displaced both out-of-pocket and other health spending. This wedge has grown steadily larger each decade.

3.4.1 Downloads

Download Excel tables used to create Figures 3.4a/3.4b Tables[22] . Figures 3.4a and 3.4b were created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 3.4a: Table 3.4.1. Distribution of Tax Expenditures Related to Health Care, 2008-2011
- Fig. 3.4b: Table 3.4.2. Distribution of National Health Expenditures by Source of Revenue, 2009

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[22]https://hub.mili.csom.umn.edu/content/m10018/latest/3.4TAB.xls

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- Figure 3.4a Image Slide (as it appears above)[23]
- Figure 3.4a Editable Slide (can be formatted as desired)[24]
- Figure 3.4b Image Slide (as it appears above)[25]
- Figure 3.4b Editable Slide (can be formatted as desired)[26]

3.4.2 References

A. Author's calculations.
B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.
C. Office of Management and Budget.
D. Sheils J. The Tax Expenditure for Health: Update for 2007. The Lewin Group. April 29, 2008. http://www.newamerica.net/files/SheilsPPT.pdf (accessed November 13, 2010).

3.5 3.5 Out-of-Pocket Share of Health Spending Declined[27]

One in seven dollars of personal health care spending now is paid for out-of-pocket compared with seven in eight dollars 80 years ago (figure 3.5a). This by far is the most significant change in health care financing over the past 80 years. Combining all other spending into a single amount, figure 3.5a illustrates quite clearly that the "wedge" of health insurance payments displaced both out-of-pocket and other health spending. This wedge has grown steadily larger each decade.

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[23]https://hub.mili.csom.umn.edu/content/m10018/latest/3.4aIMG.ppt

[24]https://hub.mili.csom.umn.edu/content/m10018/latest/3.4aDATA.ppt

[25]https://hub.mili.csom.umn.edu/content/m10018/latest/3.4bIMG.ppt

[26]https://hub.mili.csom.umn.edu/content/m10018/latest/3.4bDATA.ppt

[27]This content is available online at <https://hub.mili.csom.umn.edu/content/m10019/1.2/>.

3.5a One in seven dollars of personal health care spending currently is paid for out-of-pocket compared with seven in eight dollars out-of-pocket 80 years ago

■ Out-of-pocket ■ Private third party ■ Public third party ■ All other

Percentage out-of-pocket
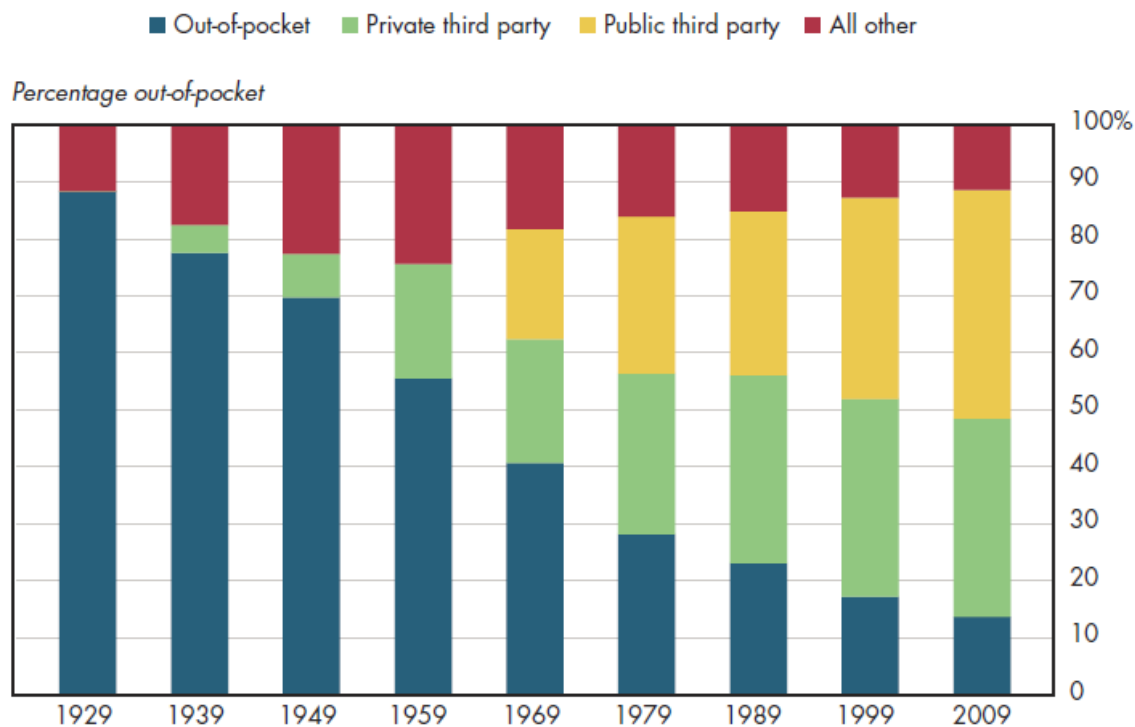
It is also easy to see that although public insurance and private insurance were approximately equal in amounts as late as 1979, public insurance today accounts for more than 40 percent of spending while private insurance accounts for less than 35 percent. If the recent health plan is implemented, the projected increase in Medicaid enrollees would exceed 30 percent, in which case this differential would grow faster in future years.

Fig. 3.5b shows how the out-of-pocket share of spending varies by type of service. In 2009, it was highest for durable medical equipment (exceeding 50 percent) and lowest for hospital services (under 5 percent). Even for physician and clinical services, out-of-pocket spending is less than one-tenth of the total. In contrast, more than one-fourth of spending on pharmaceuticals and non-durable medical supplies (e.g., band-aids) and more than one-fifth of nursing home spending is financed out of pocket. Since 1949, the out-of-pocket share of spending has declined much more rapidly for hospital and physician care than for other health services.

3.5b The out-of-pocket share of spending has declined much more rapidly for hospital and physician care than for other health services

■ 1929 ■ 1949 ■ 1969 ■ 1989 ■ 2009
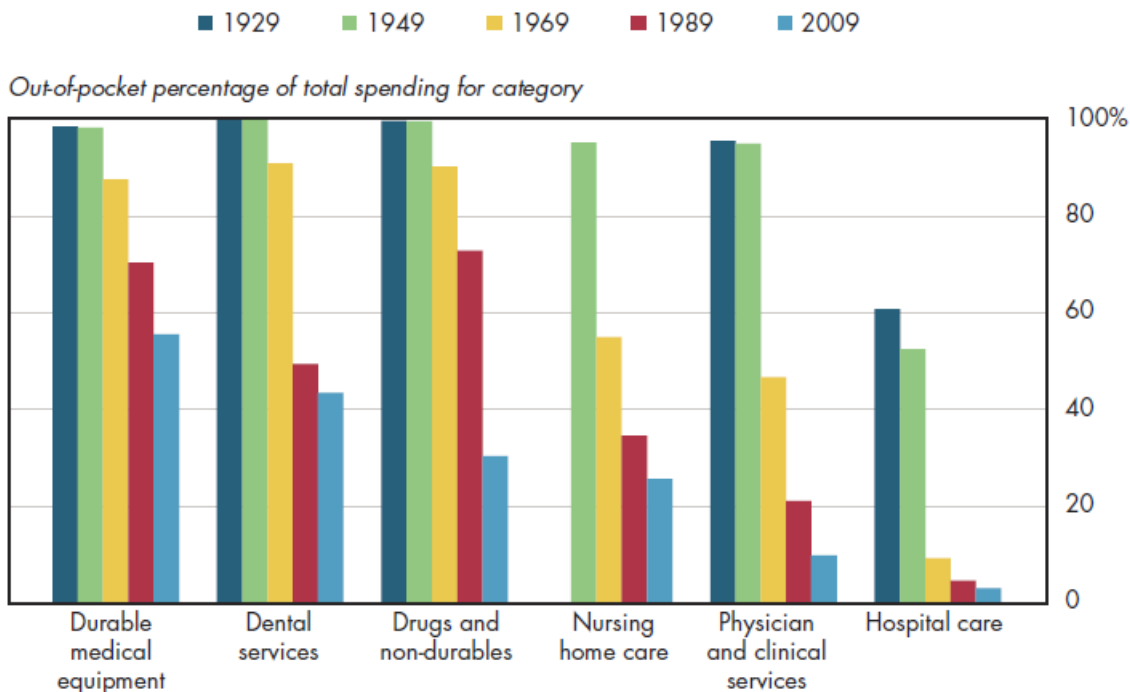
The out-of-pocket share of spending might be leveling out. Absent health reform, this share might have begun to increase over time as more employers and individuals switched to high-deductible health plans as a way of lowering premium costs. Health reform is projected to expand coverage to tens of millions of uninsured. Although common sense would require that out-of-pocket expenditures for the newly covered would decline, this is not necessarily the case. On average, per capita out-of-pocket spending for privately insured individuals is approximately 15 percent higher than it is for people who are uninsured all year. Counterbalancing this, however, are provisions in the new law that will set an income-related ceiling on out-of-pocket spending and various expansions in coverage such as prohibiting cost-sharing for preventive services and eliminating lifetime limits on coverage.

3.5.1 Downloads

Download Excel tables used to create Figures 3.5a/3.5b Tables[28] . Figures 3.5a and 3.5b were created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 3.5a: Table 3.1.1. U.S. Personal Health Expenditures by Source of Funds: 1929 to 2021
- Fig. 3.5b: Table 3.5. U.S. Out-of-Pocket Expenditures by Type of Expenditure: 1929 to 2021

Download PowerPoint versions of both figures.

- Figure 3.5a Image Slide (as it appears above)[29]
- Figure 3.5a Editable Slide (can be formatted as desired)[30]
- Figure 3.5b Image Slide (as it appears above)[31]

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[28]https://hub.mili.csom.umn.edu/content/m10019/latest/3.5TAB.xls
[29]https://hub.mili.csom.umn.edu/content/m10019/latest/3.5aIMG.ppt
[30]https://hub.mili.csom.umn.edu/content/m10019/latest/3.5aDATA.ppt
[31]https://hub.mili.csom.umn.edu/content/m10019/latest/3.5bIMG.ppt

- Figure 3.5b Editable Slide (can be formatted as desired)[32]

3.5.2 References

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

3.6 3.6 US Has among the Lowest Out-of-Pocket Share of Health Spending[33]

Among the 20 largest countries in the OECD, the United States has the fourth lowest share of health spending paid through out-of-pocket payments (figure 3.6a). This might seem surprising because the tax-financed share of spending in the United States is the lowest among these countries. Private health insurance more than makes up for the fact that government is responsible for a smaller fraction of health spending. Compared with its largest OECD competitors, the United States by far relies much more heavily on private health insurance.

3.6a Among the 20 largest economies in the OECD, the United States has the fourth lowest percentage of health costs paid for out-of-pocket
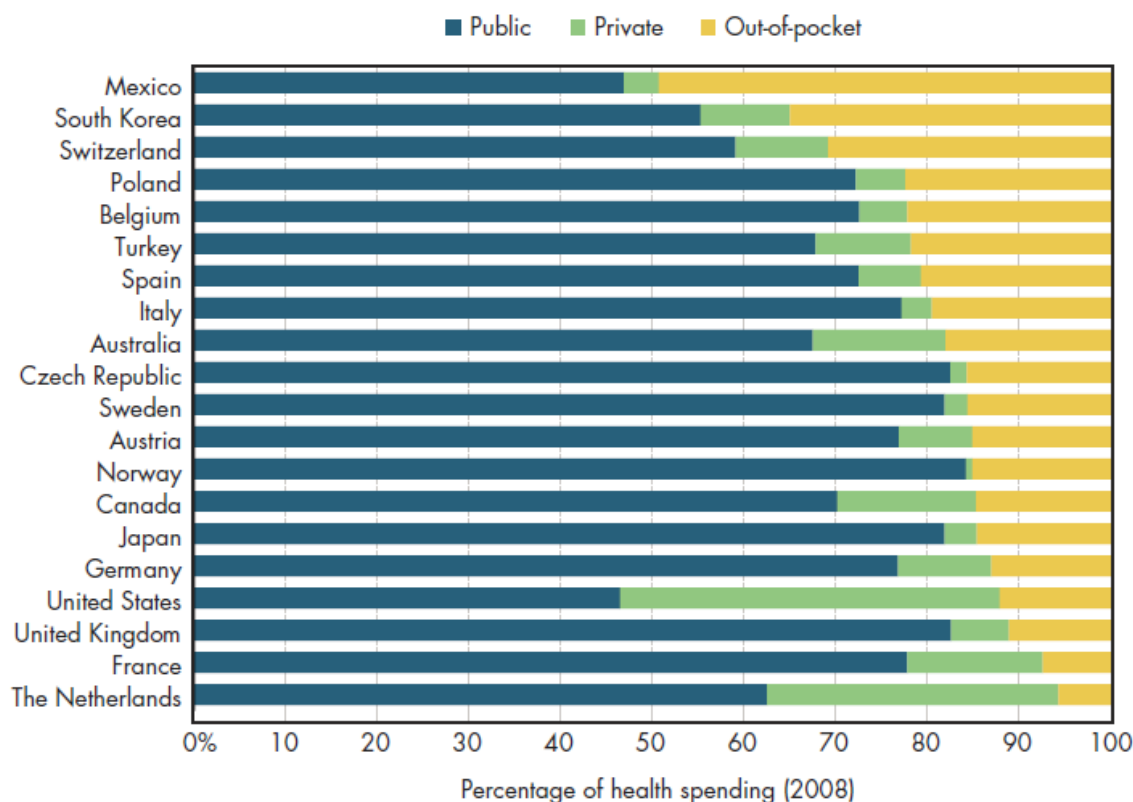
Note: Countries are listed (top to bottom) in order of their out-of-pocket share of total health spending.

Even citizens of countries such as Canada — who pride themselves for having tax-financed universal coverage — pay a higher share of health spending out-of-pocket than do Americans. Switzerland, which relies on an individual mandate analogous to the one recently included in the U.S. health reform plan, has more than 30 percent of its health spending financed through out-of-pocket payments. To be fair, another country with an individual mandate, the Netherlands, is one of only three countries to have a lower out-of-pocket share than does the United States. Even in countries that have universal or near-universal coverage, there is quite a bit of diversity in terms of how much out-of-pocket burden citizens are left to experience.

The current U.S. rank is a sharp change from 1960, when almost half of American health spending was out-of-pocket (figure 3.6b). Unfortunately, there are gaps in the historical data on this measure for the other countries, but at that time, a 20-percentage-point difference existed between France and the United States in terms of the out-of-pocket share of health expenditures. Today that differential is less than five percentage points. Moreover, the U.S. out-of-pocket share now is much more comparable to the other members of the G7, with Japan, Germany, Italy, and Canada all having higher out-of-pocket shares than does the United States.

3.6b The United States in the past relied far more on out-of-pocket spending compared with its competitors, but that is less true currently

Out-of-pocket spending as a percentage of NHE
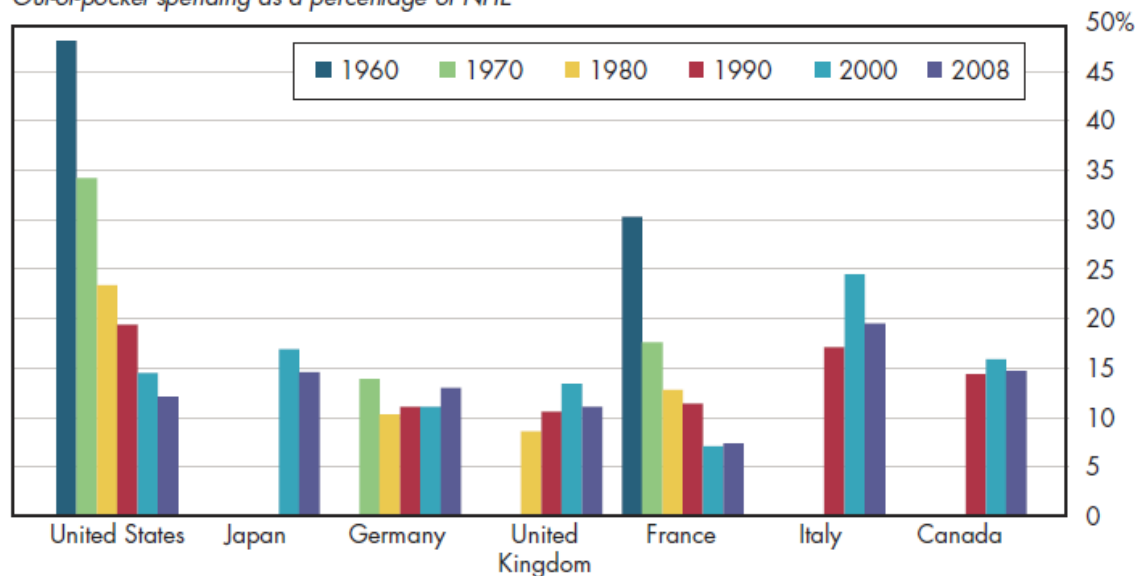
3.6.1 Downloads

Download Excel tables used to create Figures 3.6a/3.6b Tables[34] . Figures 3.6a and 3.6b were created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 3.6a: Table 3.6.1. Distribution of National Health Expenditures by Source of Revenue, OECD Countries, 2009
- Fig. 3.6b: Table 3.6.2. Out-of-Pocket Share of National Health Expenditures, G7 Countries, Selected Years 1960-2008

Download PowerPoint versions of both figures.

- Figure 3.6a Image Slide (as it appears above)[35]

[34]https://hub.mili.csom.umn.edu/content/m10020/latest/3.6TAB.xls
[35]https://hub.mili.csom.umn.edu/content/m10020/latest/3.6aIMG.ppt

- Figure 3.6a Editable Slide (can be formatted as desired)[36]
- Figure 3.6b Image Slide (as it appears above)[37]
- Figure 3.6b Editable Slide (can be formatted as desired)[38]

3.6.2 References

A. Organisation for Economic Co-operation and Development.

3.7 3.7 The Elderly & the Disabled Account for Disproportionately Large Share of Medicaid Spending[39]

The average Medicaid beneficiary is much younger than those who are covered by Medicare. Children account for almost half of Medicaid enrollees, with non-elderly, non-disabled adults (predominantly young parents) accounting for an additional 25 percent (figure 3.7a).

3.7a The elderly and disabled constitute 25 percent of Medicaid enrollees but more than 75 percent of Medicaid spending
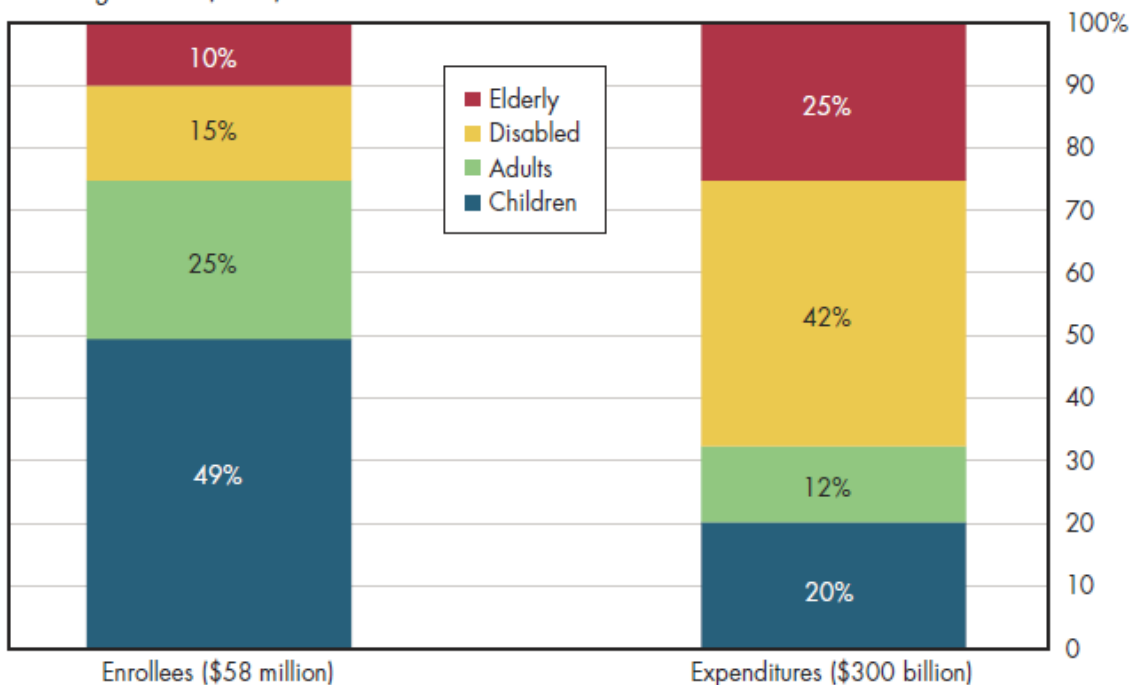
Although the elderly and disabled make up approximately 25 percent of beneficiaries, they account for more than 75 percent of all expenditures for medical services. In contrast with Medicare, which was designed to be an acute-care insurance program, Medicaid spending is far more heavily tilted toward long-term care, particularly nursing home care. Approximately 30 percent of Medicaid spending is for long-term care services.

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[36]https://hub.mili.csom.umn.edu/content/m10020/latest/3.6aDATA.ppt
[37]https://hub.mili.csom.umn.edu/content/m10020/latest/3.6bIMG.ppt
[38]https://hub.mili.csom.umn.edu/content/m10020/latest/3.6bDATA.ppt
[39]This content is available online at <https://hub.mili.csom.umn.edu/content/m10021/1.1/>.

Medicaid accounts for more than 40 percent of all nursing home spending in the United States, and almost 40 percent of home health services (figure 3.7b). Other personal health care includes spending for Medicaid home- and community-based waivers, care provided in residential care facilities, ambulance services, school health, and worksite health care, so it too predominantly consists of long-term care services.

3.7b Medicaid covers approximately 40 percent of the nation's long-term care spending but a much smaller share of acute-care spending

Percentage of PHCE paid by Medicaid (2010)
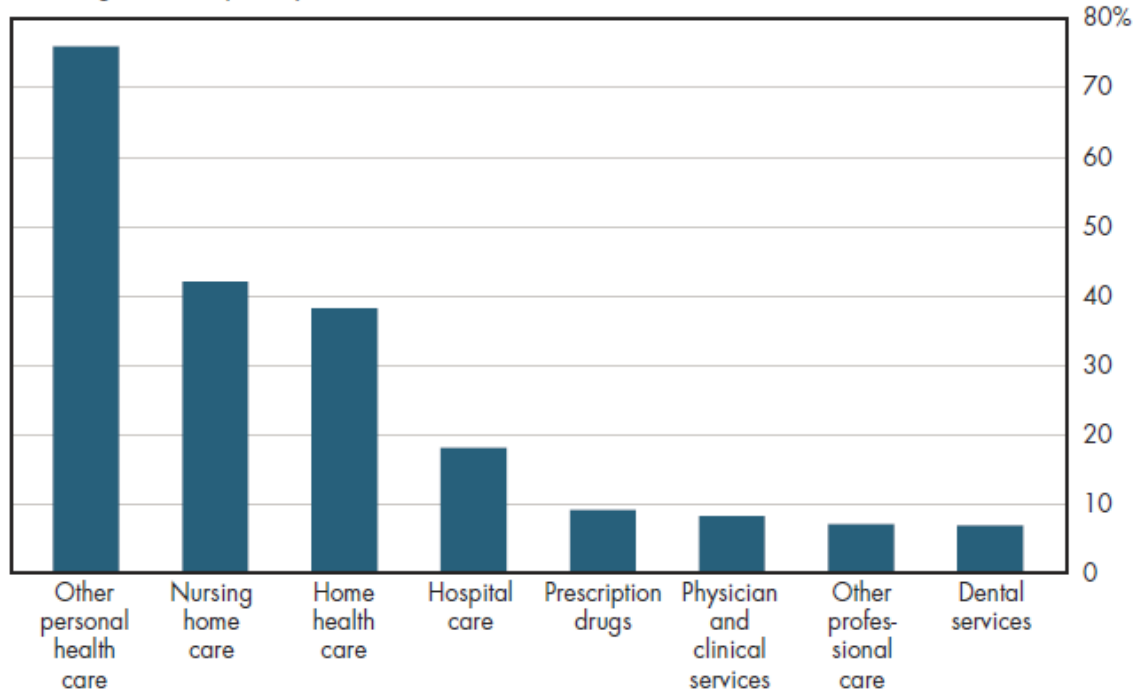
Medicaid enrollees account for fewer than 20 percent of the population, which is similar to the share of hospital spending financed by Medicaid. However, Medicaid covers fewer than 10 percent of all spending on care provided by physicians, dentists, and other health professionals, and prescription drugs.

This largely is a reflection of low Medicaid fees. For example, on average, physician fees under Medicaid are 28 percent lower than Medicare fees, but this varies enormously by state. Some states have physician fees that are 63 percent below Medicare on average, whereas in other states, average Medicaid fees exceed Medicare's by more than 40 percent. In addition, by federal law, state Medicaid programs are given a sizable discount on prescription drug prices in the form of mandatory rebates that must be paid to states by pharmaceutical manufacturers.

Under health reform, this is supposed to change. The new law requires states to raise Medicaid provider payment rates to Medicare levels in 2013 and 2014 for primary care services of pediatricians, internists and general and family practitioners. States subsequently can roll back these fee increases, but this might be politically difficult. Medicare fees for primary care also will be increased 10 percent between 2011 and 2015.

3.7.1 Downloads

Download Excel tables used to create figure: Figure 3.7b Table[40] . Figure 3.7b was created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 3.7b: Table 3.7. Medicaid Share of National Health Expenditures, by Component, 1960-2011

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[40]https://hub.mili.csom.umn.edu/content/m10021/latest/3.7TAB.xls

There's no table for Fig. 3.7a since source is included directly on the slide.

Download PowerPoint versions of both figures.

- Figure 3.7a Image Slide (as it appears above)[41]
- Figure 3.7a Editable Slide (can be formatted as desired)[42]
- Figure 3.7b Image Slide (as it appears above)[43]
- Figure 3.7b Editable Slide (can be formatted as desired)[44]

3.7.2 References

A. Kaiser Commission on Medicaid and the Uninsured. Medicaid: A Primer. Key Information on Our Nation's Health Coverage Program for Low-Income People. June 2010. http://www.kff.org/medicaid/upload/7334-04.pdf (accessed October 13, 2010).

B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.

3.8 3.8 Medicare Pays for Less than Half of Health Spending by Beneficiaries[45]

Recall that Medicare is the nation's single largest program financing medical care in the United States, with more than one-half trillion dollars in spending in 2009 (figure 3.8a). Most people think of Medicare as being supported primarily through payroll taxes (1.45 percent each, for employers and employees). Currently, however, a larger share of Medicare is paid with federal general revenues than from payroll contributions. The payroll taxes are used exclusively to finance Medicare Part A, which covers inpatient hospital stays, limited skilled nursing facility care, home health, and hospice.

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[41]https://hub.mili.csom.umn.edu/content/m10021/latest/3.7aIMG.ppt
[42]https://hub.mili.csom.umn.edu/content/m10021/latest/3.7aDATA.ppt
[43]https://hub.mili.csom.umn.edu/content/m10021/latest/3.7bIMG.ppt
[44]https://hub.mili.csom.umn.edu/content/m10021/latest/3.7bDATA.ppt
[45]This content is available online at <https://hub.mili.csom.umn.edu/content/m10022/1.1/>.

3.8a Less than 12 percent of Medicare spending is financed through beneficiary premiums, but this varies greatly by component

Percentage of Medicare income (2009)
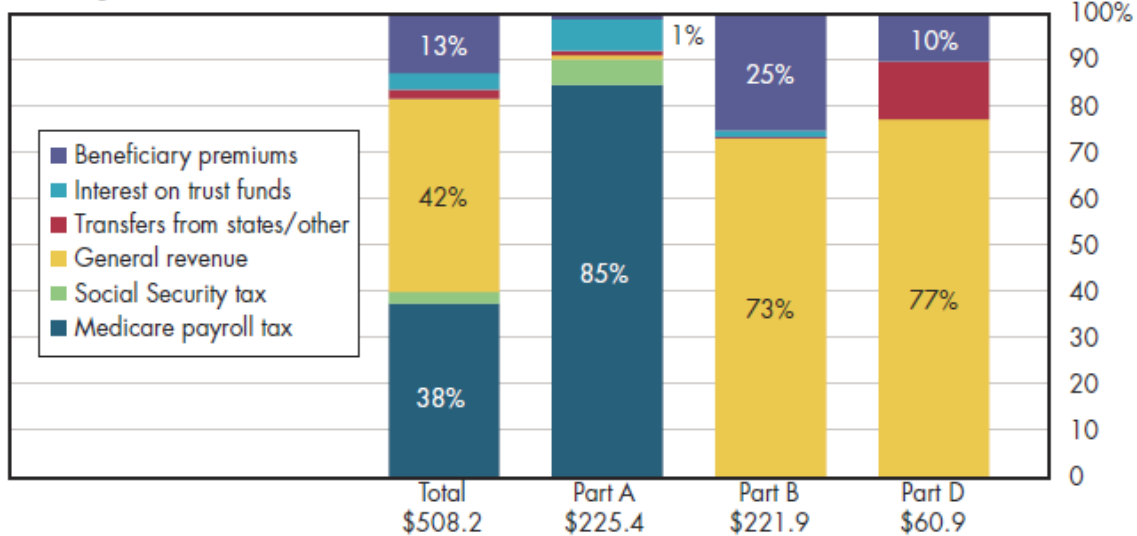
Note: Part A covers inpatient hospital stays, limited skilled nursing facility care, home health, and hospice. Part B covers physician care, hospital outpatient services, home health care, durable medical equipment, laboratory, ambulance, and related services. Part D covers prescription drugs.

By law, beneficiary premiums cover 25 percent of the costs of Part B, which covers physician care, hospital outpatient services, home health care, durable medical equipment, laboratory, ambulance and related services. The lion's share of remaining expenses is covered from general fund revenue. Part D covers prescription drugs. Beneficiary premiums cover only 10 percent of its costs, with more than 75 percent paid by the federal general fund (the remainder is from state government transfers). Thus, for the Medicare program as a whole, less than one dollar in eight is financed from premium payments made by beneficiaries. The remainder is tax-financed.

Despite its size, Medicare covers less than half of annual medical and long-term care costs for the average beneficiary (figure 3.8b, left bar). However, from a beneficiary perspective, some of those Medicare payments are financed by beneficiary-paid premiums; the same is true for private third-party coverage. Yet even from this perspective, beneficiaries pay only approximately 25 percent of annual costs, including amounts paid out-of-pocket for medical services and the amounts that beneficiaries pay in voluntary premiums for Parts B and D and supplemental insurance ("Medigap" policies and employer-sponsored health plans).

3.8b Medicare pays for less than half of health spending by Medicare beneficiaries; approximately 25 percent is paid for by beneficiaries

Percentage of total medical and long-term costs (2005)
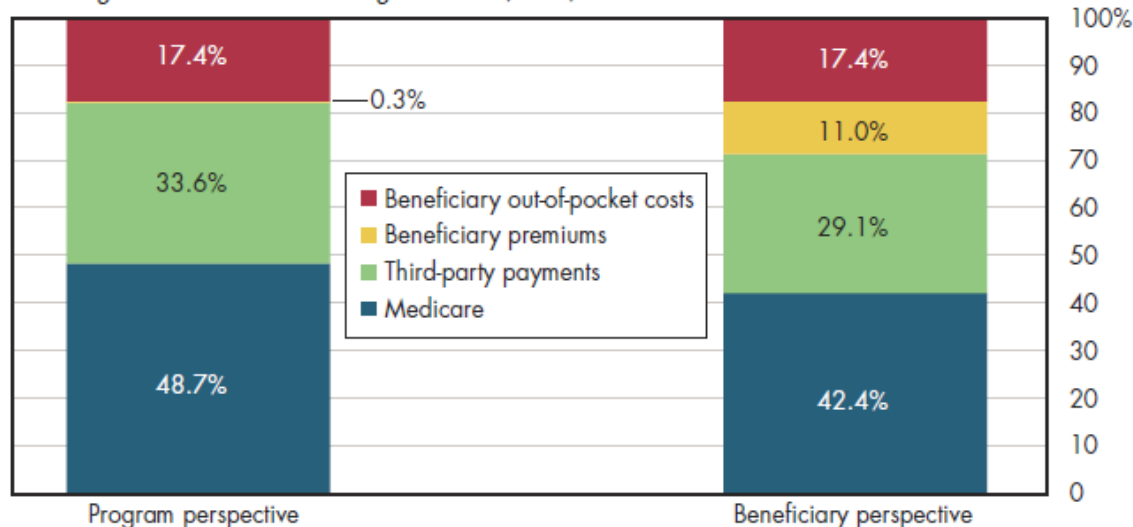
Note: The program perspective counts all Medicare spending under Medicare and all bills paid through public and private third-party payers under third-party payments. Administrative costs related to Medicare and other third-party payers are included as part of beneficiary premiums. The beneficiary perspective includes the full amount of premiums paid to Medicare and third parties under beneficiary premiums and deducts these amounts from Medicare and third party payers. Beneficiary premiums do not appear in the program perspective because they are included as part of third-party and Medicare payments (spending).

The remaining expenses are covered by third-party payers. These expenses include Medicaid coverage for so-called "dual eligibles" (whose spending is more than double that of other beneficiaries), private supplemental Medigap policies (held by 25 percent of enrollees), and group health coverage for retirees (held by almost 30 percent of beneficiaries).

3.8.1 Downloads

Download Excel tables used to create Figures 3.8a/3.8b Tables[46] . Figures 3.8a and 3.8b were created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 3.8a: Table 3.8.1. Distribution of Medicare Income by Source of Revenue, 2009
- Fig. 3.8b: Table 3.8.2. Distribution of Medicare Costs per Beneficiary by Source of Revenue, 2005 and 2006

Download PowerPoint versions of both figures.

- Figure 3.8a Image Slide (as it appears above)[47]
- Figure 3.8a Editable Slide (can be formatted as desired)[48]
- Figure 3.8b Image Slide (as it appears above)[49]
- Figure 3.8b Editable Slide (can be formatted as desired)[50]

[46]https://hub.mili.csom.umn.edu/content/m10022/latest/3.8TAB.xls
[47]https://hub.mili.csom.umn.edu/content/m10022/latest/3.8aIMG.ppt
[48]https://hub.mili.csom.umn.edu/content/m10022/latest/3.8aDATA.ppt
[49]https://hub.mili.csom.umn.edu/content/m10022/latest/3.8bIMG.ppt
[50]https://hub.mili.csom.umn.edu/content/m10022/latest/3.8bDATA.ppt

3.8.2 References

A. Author's calculations.

B. Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medi- cal Insurance Trust Funds, The. 2010 Annual Report. US Government Printing Office. August 5, 2010.

C. Potetz L and J Cubanski. A Primer on Medicare Financing. July 2009. http://www.kff.org/medicare/upload/7731-02.pdf (accessed August 10, 2010).

D. Seldon TM and M Sing. The Distribution of Public Spending for Health Care in the United States, 2002. Health Affairs Web Exclusive 2008; 27:5w349-w359. http://content.healthaffairs.org/cgi/reprint/27/5/w349 (accessed June 14, 2010).

E. Sherlock DB. Administrative Expenses of Health Plans. Prepared for the Blue Cross Blue Shield Association. http://www.bcbs.com/issues/uninsured/Sherlock- Report-FINAL.pdf (accessed February 2010).

3.9 3.9 The Uninsured Received Much Subsidized Care[51]

In absolute dollars, per capita out-of-pocket health spending is similar among those uninsured all year, those uninsured part-year, and those with year-round private health insurance coverage (figure 3.9a). This might seem counterintuitive, but it reflects the fact that the typical individual with private coverage has a higher income and hence willingness-to-pay for medical goods and services. Among children (where the age distribution is quite similar), total spending is approximately 80 percent higher among those with private coverage compared with individuals uninsured the entire year.

3.9a Out-of-pocket spending is similar among the uninsured and privately insured, but the former receive much more subsidized care

Estimated per capita PHCE (2008)

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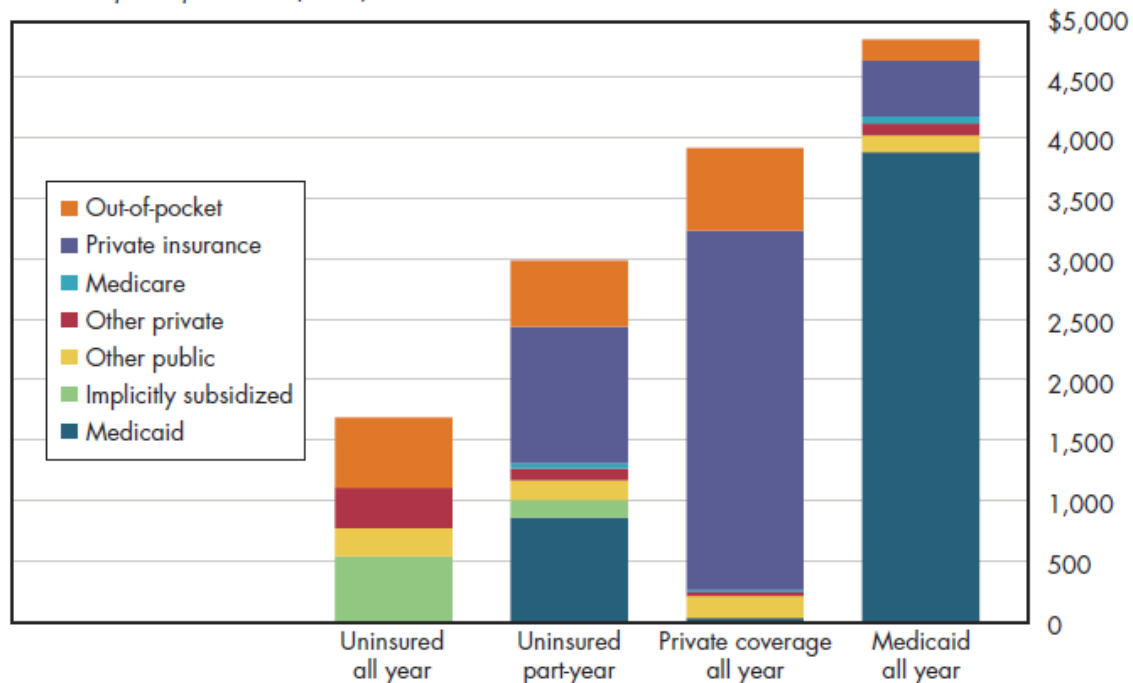
[51]This content is available online at <https://hub.mili.csom.umn.edu/content/m10023/1.1/>.

In figures 3.9a and 3.9b, implicitly subsidized care represents the cost of care indirectly subsidized by hospitals, physicians, and other providers. Other public care includes payments by the Veterans Health Administration (VHA), CHAMPUS-TRICARE (for civilian dependents of military personnel), workers' compensation, and other federal, state, and local public programs that pay directly for care (for example, maternal and child health). Thus, it combines subsidized care to individuals lacking the means to pay, with care to which one might be entitled (for example, work injury). Likewise, other private includes unsubsidized care (for example, payments from accident, automobile, and indemnity policies), and care that likely is subsidized, such as private philanthropy and cash payments by non-family members.

3.9b Almost 65 percent of health expenditures for people uninsured all year is subsidized through taxes or private charity

The per capita amount of non-Medicaid subsidized care is highest among those uninsured all year, followed by the part-year uninsured and the privately insured. Because the part-year uninsured lack coverage for approximately six months, their annual spending includes some care paid through public and private health plans. If Medicaid is included as a form of subsidized care, those who are uninsured part of a year actually receive more subsidized services than do those without coverage the entire year.

Viewing the same data in terms of shares of spending provides a different result. For the all-year uninsured, at least 30 percent but no more than 65 percent of spending is subsidized (figure 3.9b). In contrast, such sources pay for only approximately 10 to 13 percent of annual spending for the part-year uninsured. However, if Medicaid were counted as subsidized care, this would add almost 30 percentage points to the total for this group.

3.9.1 Downloads

Download Excel tables used to create both figures: Figures 3.9a/3.9b Tables[52] . Figures 3.9a and 3.9b both were created from the following table (the workbook includes all supporting tables used to create this table):

[52]https://hub.mili.csom.umn.edu/content/m10023/latest/3.9TAB.xls

- Table 3.9. Sources of Payment for Patients, by Insurance Status, 2008

Download PowerPoint versions of both figures.

- Figure 3.9a Image Slide (as it appears above)[53]
- Figure 3.9a Editable Slide (can be formatted as desired)[54]
- Figure 3.9b Image Slide (as it appears above)[55]
- Figure 3.9b Editable Slide (can be formatted as desired)[56]

3.9.2 References

A. Hadley J, J Holahan, T Coughlin and D Miller. Covering the Uninsured in 2008: A Detailed Examination of Current Costs and Sources of Payment, and Incremental Costs of Expanding Coverage. Prepared for the Kaiser Commission on Medicaid and the Uninsured. Kaiser Commission on Medicaid and the Uninsured. Washington DC. August 2008.

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[53]https://hub.mili.csom.umn.edu/content/m10023/latest/3.9aIMG.ppt
[54]https://hub.mili.csom.umn.edu/content/m10023/latest/3.9aDATA.ppt
[55]https://hub.mili.csom.umn.edu/content/m10023/latest/3.9bIMG.ppt
[56]https://hub.mili.csom.umn.edu/content/m10023/latest/3.9bDATA.ppt

Chapter 4

Chapter 4: The Employer Rold in U.S. Health Care

4.1 4.1: Health-Related Employer Contributions Accounted for a Growing Share of Worker Compensation[1]

Over the past 60 years, the amount of employee compensation for wage and salary supplements has more than quadrupled (figure 4.1a). The average worker now receives approximately 23 cents in such employer-paid supplements for every dollar of wages and salaries. This growth has been variable, including brief periods in which wages and salaries grew faster than supplements. A relatively small amount of this increase relates to government-required health-related supplements—including payroll taxes for Medicare and workers' compensation (which pays for job-related injuries or illness).

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10024/1.1/>.

4.1a Over 60 years, both health and non-health supplements to wages and salaries have grown dramatically relative to worker pay

Employer contributions per dollar of wages and salaries (cents)
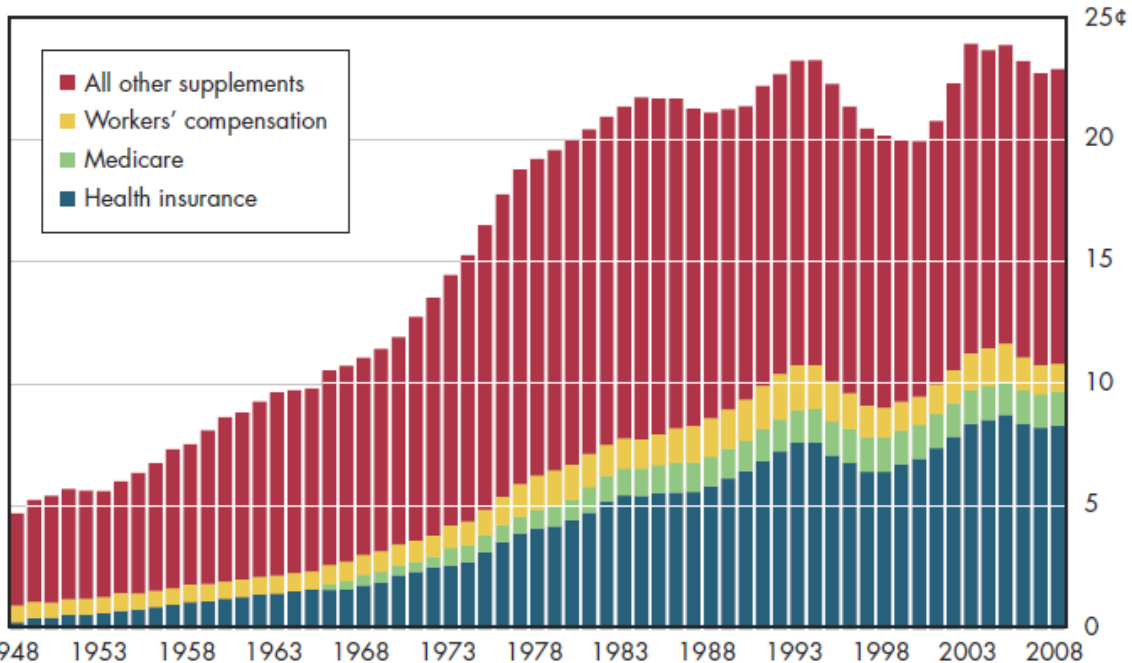
The employer share of employer-sponsored insurance (ESI) has been an important factor in driving growth in supplement payments. Even so, increases in non- health fringe benefits such as retirement contributions also have had an important role in this upward trend. In both cases, tax policy has encouraged such growth because fringe benefits are excludable from federal, state, and local income taxes and payroll taxes. For the highest income workers who in some states face marginal tax rates of 50 percent, the tax exclusion permits employers to provide two dollars in pre-tax fringe benefits for every dollar that otherwise would be paid as wages or salaries.

ESI includes all types of plans, including fee-for-service indemnity plans, and managed care plans such as preferred provider organizations (PPOs) and health maintenance organizations (HMOs). Managed care plans use various cost control mechanisms (for example, pre-authorization of care and financial incentives for patients to use preferred provider networks). However, indemnity plans also have begun to use some of the same tools.

In general, over these 60 years, health-related supplements have grown as a fraction of all employer-provided supplements (figure 4.1b). This implies that health-related supplements have generally grown faster than other fringe benefits. For a typical worker, employer premium payments now constitute 36 percent of all fringe benefits, with Medicare and workers' compensation absorbing another 5 and 6 percent, respectively. All other fringe benefits have declined from almost 80 percent of the total just after World War II to slightly more than half today.

4.1b Health-related employer contributions have absorbed a growing share of supplements, currently accounting for almost half the total

Percentage of all employer-paid supplements to wages and salaries
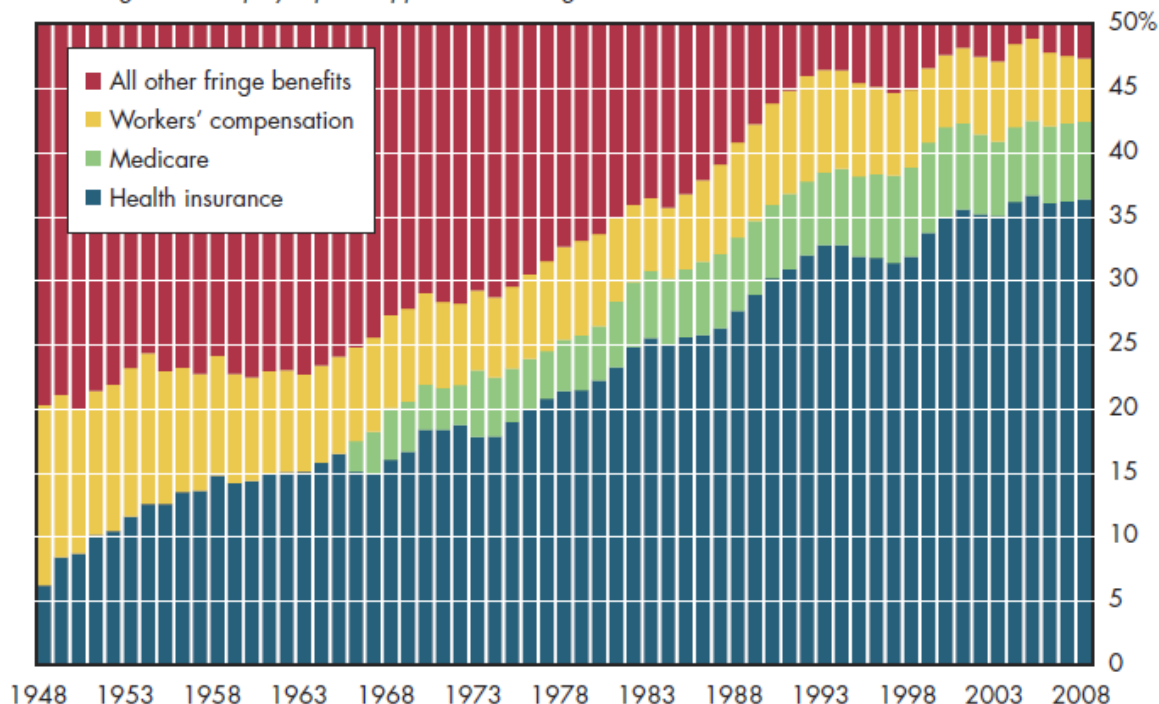
4.1.1 Downloads

Download Excel tables used to create both figures: Figures 4.1a/4.1b Tables[2] . Figures 4.1a and 4.1b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 4.1. Employer Wages & Salaries, Contributions for Private Health Insurance, Medicare, Workers Compensation and Other Supplements to Wages and Salaries: 1948 to 2012

 Download PowerPoint versions of both figures.

- Figure 4.1a Image Slide (as it appears above)[3]
- Figure 4.1a Editable Slide (can be formatted as desired)[4]
- Figure 4.1b Image Slide (as it appears above)[5]
- Figure 4.1b Editable Slide (can be formatted as desired)[6]

4.1.2 References

A. Department of Commerce. Bureau of Economic Analysis.

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[2]https://hub.mili.csom.umn.edu/content/m10024/latest/4.1TAB.xls
[3]https://hub.mili.csom.umn.edu/content/m10024/latest/4.1aIMG.ppt
[4]https://hub.mili.csom.umn.edu/content/m10024/latest/4.1aDATA.ppt
[5]https://hub.mili.csom.umn.edu/content/m10024/latest/4.1bIMG.ppt
[6]https://hub.mili.csom.umn.edu/content/m10024/latest/4.1bDATA.ppt

4.2 4.2: High-Paid Workers Receive Larger Tax Subsidy for Employer-Provided Health Insurance[7]

The employer tax exclusion for health benefits has been characterized as an upside-down subsidy. Our generally progressive tax system results in higher marginal tax rates for high-income workers compared with rates for low-income workers. Consequently, both the dollar value of the tax subsidy and the percentage of the premium that is implicitly subsidized by the federal government are larger for higher-paid workers compared with that for lower-paid workers (figure 4.2a).

4.2a Higher-income families get a substantially higher subsidy from the employer tax exclusion compared with the subsidy for low-income families
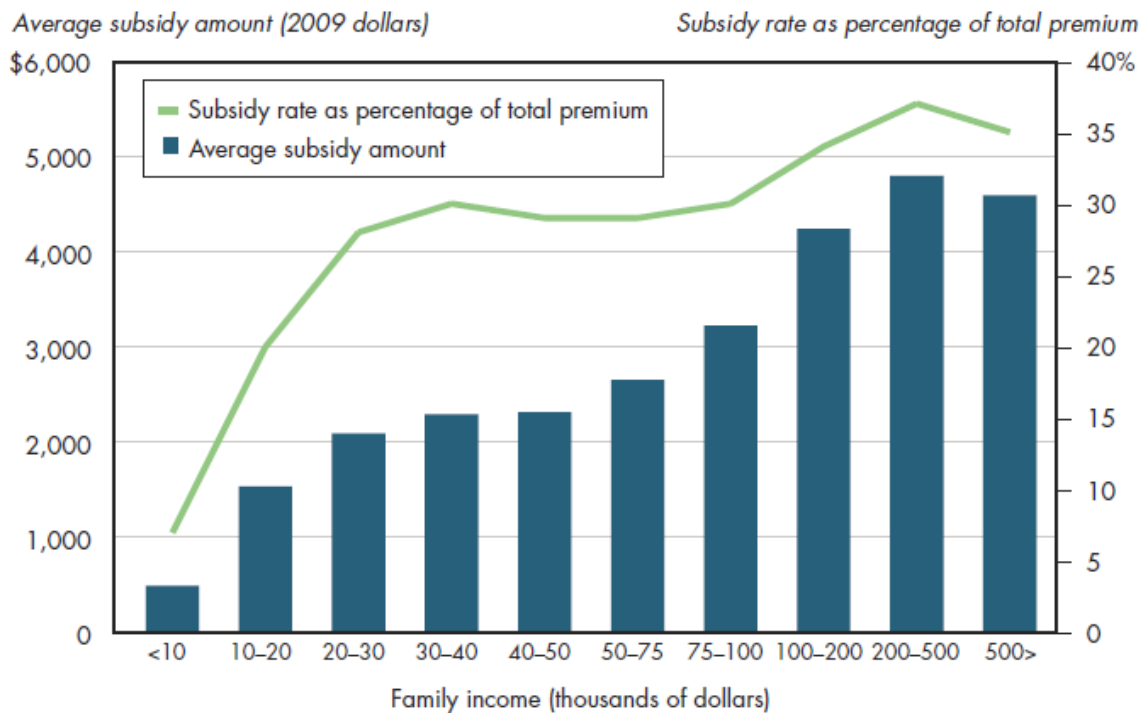
For example, a company CEO earning $300,000 would receive a subsidy of approximately $4,800, which amounts to a discount of 37 percent on the premiums required for health insurance. A janitor earning the minimum wage in that same company would get a subsidy equal to less than $500—enough to cover only 7 percent of health plan premiums.

Even though the employer appears to be paying most or all of the premiums for employer-provided health benefits, empirical studies have demonstrated that the cost of such benefits actually is paid by workers in the form of lower wages or salaries. Thus, another way to view the subsidy is to consider it relative to the overall share of family income required to pay for health insurance coverage (inclusive of the employer share).

When calculated as a share of family income, the subsidy generally declines with income (figure 4.2b). This makes it appear less regressive. However, the share of family income required for health insurance rises sharply for workers at the lowest end of the income distribution. The tax subsidy does not grow nearly as fast. Thus, even with the tax subsidy, the net share of income (that is, after deducting the subsidy) required for health insurance declines with income.

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[7]This content is available online at <https://hub.mili.csom.umn.edu/content/m10025/1.1/>.

4.2b The share of income needed for health insurance rises sharply as income declines; the tax exclusion mitigates this only slightly

Percentage of after-tax income (2009)

Family income (thousands of dollars)
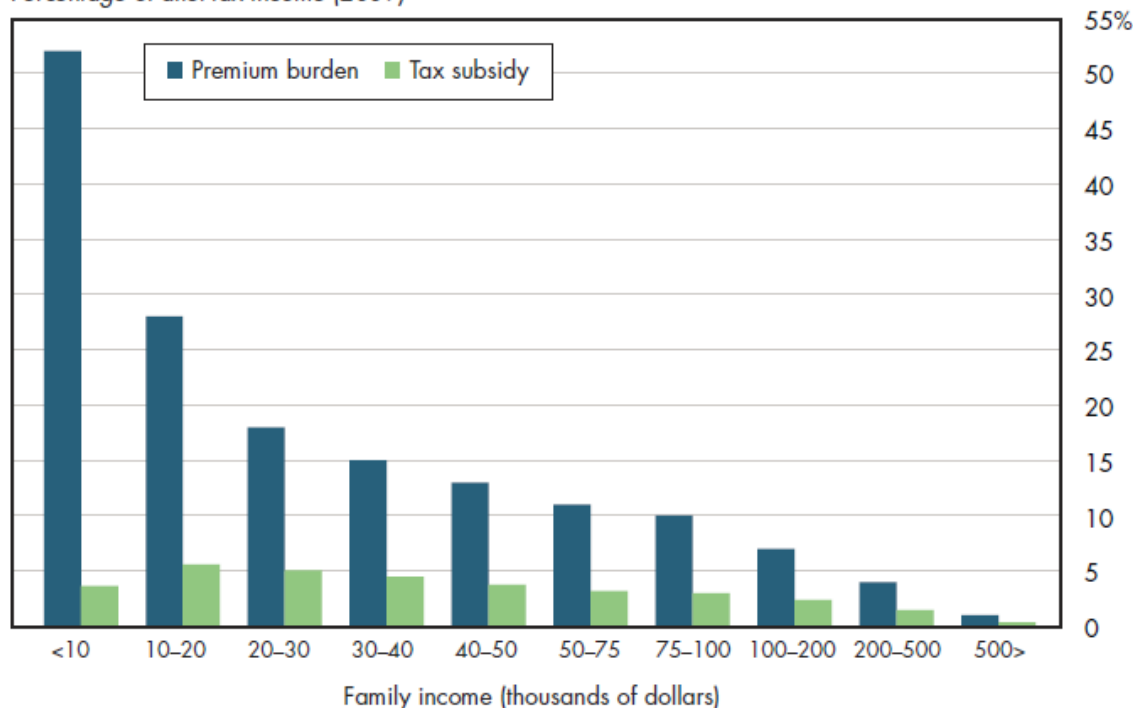
Under the newly enacted health reform plan, the share of family income required to pay the family's share of premiums will be capped at 2 to 9.5 percent of income. However, these caps apply only to the family share of premiums, not to the employer- paid portion. Thus, for the most part, the hidden inequities just noted will persist for those who continue to rely on employer-based coverage.

4.2.1 Downloads

Download Excel tables used to create both figures: Figures 4.2a/4.2b Tables[8] . Figures 4.2a and 4.2b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 4.2. Tax Subsidy for Employer-Sponsored Insurance (ESI), by Income Decile

Download PowerPoint versions of both figures.

- Figure 4.2a Image Slide (as it appears above)[9]
- Figure 4.2a Editable Slide (can be formatted as desired)[10]
- Figure 4.2b Image Slide (as it appears above)[11]
- Figure 4.2b Editable Slide (can be formatted as desired)[12]

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[8]https://hub.mili.csom.umn.edu/content/m10025/latest/4.2TAB.xls
[9]https://hub.mili.csom.umn.edu/content/m10025/latest/4.2aIMG.ppt
[10]https://hub.mili.csom.umn.edu/content/m10025/latest/4.2aDATA.ppt
[11]https://hub.mili.csom.umn.edu/content/m10025/latest/4.2bIMG.ppt
[12]https://hub.mili.csom.umn.edu/content/m10025/latest/4.2bDATA.ppt

4.2.2 References

A. Burman L, S Khitatrakun and S Goodell. Tax Subsidies for Private Health Insurance: Who Benefits and at What Cost? Robert Wood Johnson Foundation. 2009 Update. Princeton. July 2009.

4.3 4.3 Small Firms Least Likely Offer Health Coverage to Employee[13]

Fewer than half of firms that have 25 or fewer employees even offer health insurance coverage. In contrast, virtually all firms that have 1,000 or more workers offer such benefits (figure 4.3a). Thus, if a worker gets employer-sponsored health benefits depends heavily on the number of workers at a given firm.

4.3a Fewer than 65 percent of small firms offer health plans, but the share of workers eligible and participating in such plans is similar to that in large firms
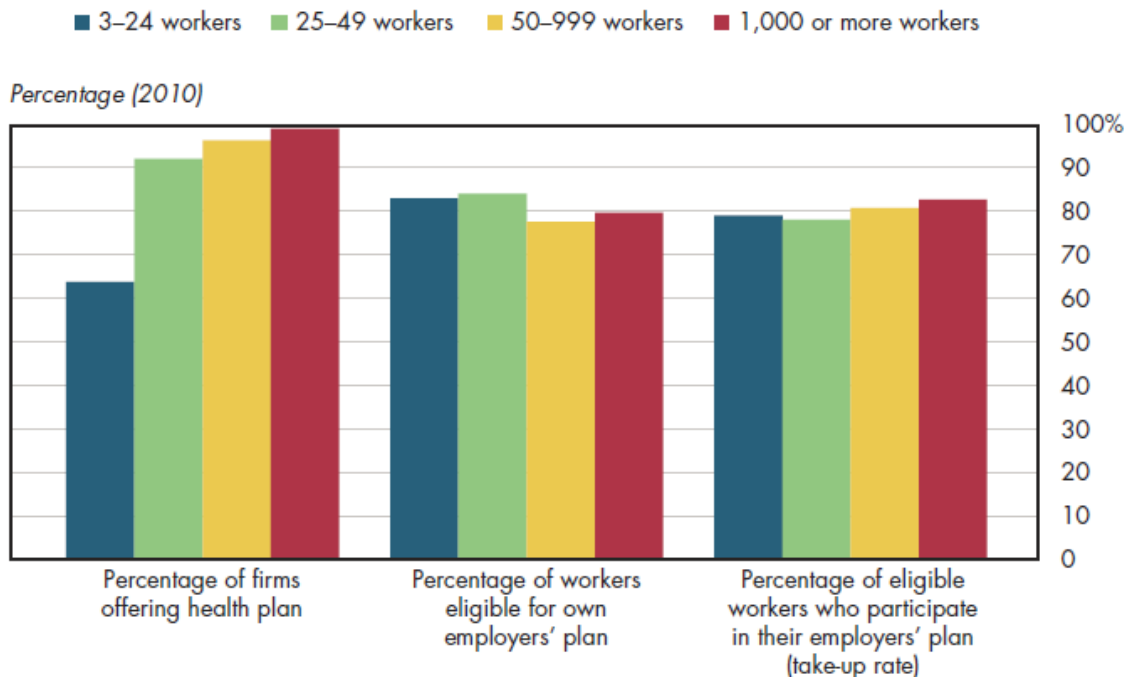
In general, employer-provided health benefits are not as attractive to small-firm workers compared with those who work in large firms. Premiums generally are higher for the same amount of coverage because the administrative load is higher. Some costs, such as general administration, do not vary much by firm size, resulting in economies of scale in health insurance for firms that have more workers to share the administrative cost. With fewer workers among whom such costs can be spread, the per-person cost is higher in small firms. To reflect greater volatility in expected claims for small firms relative to large firms, insurers also must include a higher risk premium.

In a voluntary market, insurers know from experience that the small firms have sicker employees than do large firms. That is, small firms will know the individual health needs of their employees much better than large firms do. Moreover, they have far fewer plan members among whom to spread the cost of someone who has a high-cost medical condition. In a market where premiums are higher for the smallest firms, the companies that have the greatest individual employee health needs will be the most motivated to search for coverage. This amplifies the tendency for insurers to charge small firms higher premiums to reflect the generally poorer health among workers in small firms seeking coverage.

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[13]This content is available online at <https://hub.mili.csom.umn.edu/content/m10026/1.1/>.

However, when an employer has made the decision to offer health coverage, firm-size differences are attenuated considerably. In fact, the percentage of workers eligible for the health plan actually is slightly higher among small firms relative to larger firms, although the percentage of workers who accept whatever health coverage offered is only slightly less.

The variation in the percentage of firms offering health insurance by industry is somewhat smaller than by firm size, with health care and retail trade having the low- est offer rates, while transportation, communications, utilities, wholesale trade, and manufacturing have the highest (figure 4.3b). The higher concentration of small firms in health care and retail trade contributes to these differences.

4.3b Among all industries, health care and retail trade have the lowest rates of offering health plans, reflecting their large number of small firms
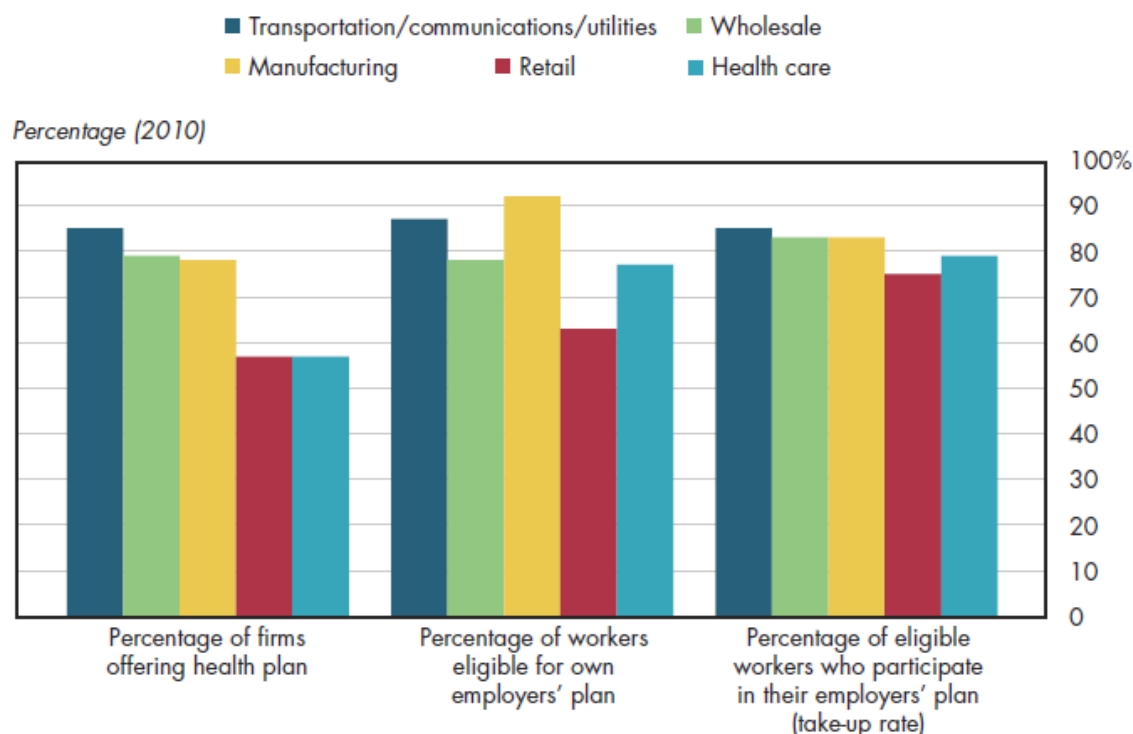
4.3.1 Downloads

Download Excel tables used to create Figures 4.3a/4.3b Tables[14] . Figures 4.3a and 4.3b were created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 4.3a: Table 4.3.1. Health Insurance Benefits Offer Rates, Worker Eligibility Rates, and Take-up Rates, by Size of Firm, 2010 and 2013
- Fig. 4.3b: Table 4.3.2. Health Insurance Benefits Offer Rates, Worker Eligibility Rates, and Take-up Rates, by Industry, 2010 and 2013

Download PowerPoint versions of both figures.

- Figure 4.3a Image Slide (as it appears above)[15]
- Figure 4.3a Editable Slide (can be formatted as desired)[16]

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[14]https://hub.mili.csom.umn.edu/content/m10026/latest/4.3TAB.xls
[15]https://hub.mili.csom.umn.edu/content/m10026/latest/4.3aIMG.ppt
[16]https://hub.mili.csom.umn.edu/content/m10026/latest/4.3aDATA.ppt

- Figure 4.3b Image Slide (as it appears above)[17]
- Figure 4.3b Editable Slide (can be formatted as desired)[18]

4.3.2 References

A. Kaiser Family Foundation, The. Health Research & Educational Trust. Employer Health Benefits 2010 Annual Survey. September 2, 2010. http://ehbs.kff.org/?page=abstract&id=1 (accessed November 21, 2010).

4.4 4.4 A Secular Decline In Employer-Based Health Coverage[19]

Health insurance offer rates have been remarkably stable over the past decade (figure 4.4a). Ignoring year-to-year variation, the offer rate for firms with fewer than 10 employees has consistently been less than 60 percent. It is not clear whether the recent uptick in offer rates for the smallest firms is an anomaly or a reversal of recent trends.

4.4a The percentage of the smallest firms offering health benefits has been less than 60 percent for more than a decade

Percentage of employers offering health insurance benefits

Legend:
- 200 or more workers
- 50–199 workers
- 25–49 workers
- 10–24 workers
- 3–9 workers

Even though offer rates have been relatively stable over the past decade, the percentage of workers who have employer-based coverage has been eroding rather steadily over the past two decades. Figure 4.4b provides a consistently measured picture of this decline since 1999, and other data confirm similar trends occurring throughout the 1990s. This decline reflects in part trends displayed in figure 4.1a. With health benefit costs rising much faster than wages and salaries, more employees declined offered coverage. Because employers generally contribute a higher share of the premium for an employee's own coverage than for dependent/spouse coverage, this refusal rate tends to be higher for dependent coverage. However, it also can be attributed to a rather steady expansion of public coverage since the mid-1980s — notably Medicaid and the State Children's Health Insurance Plan (SCHIP).

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[17]https://hub.mili.csom.umn.edu/content/m10026/latest/4.3bIMG.ppt
[18]https://hub.mili.csom.umn.edu/content/m10026/latest/4.3bDATA.ppt
[19]This content is available online at <https://hub.mili.csom.umn.edu/content/m10027/1.1/>.

4.4b Over the past decade, the percentage of employees in health benefit plans has declined in almost all firm-size categories

Percentage of workers in own employer's health plan

Firm size (number of employees)
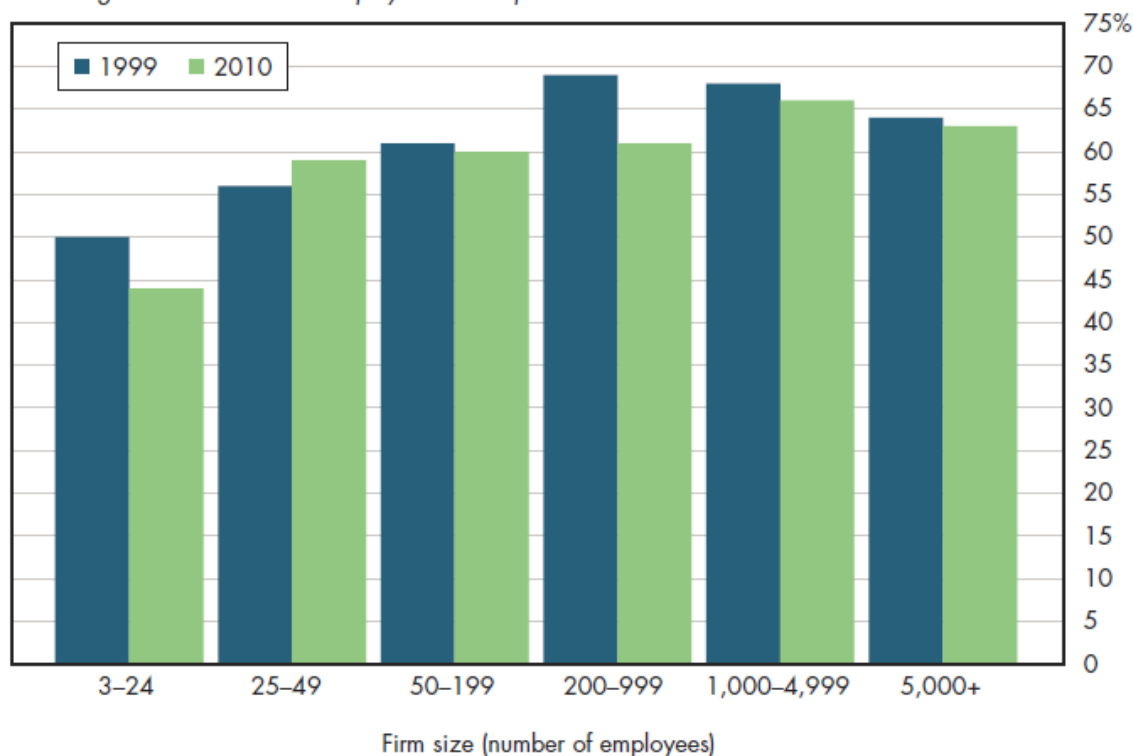
In recent years, this erosion in coverage has been largest among the smallest and mid-sized firms. Because small firms face higher premiums for the equivalent level of coverage, any given percentage increase in medical costs will produce a higher absolute dollar impact relative to larger firms. As well, large firms enjoy the stability that comes with sizable health plan memberships. That is, if medical trends are increasing by 10 percent, the largest firms will tend to experience rate increases in a comparable range. In contrast, small employers may face annual rate increases that are several multiples of the general trend.

In the small-group market, there also is considerably more "churning" as such employers seek a better deal on health insurance coverage. This means that firms that switch face additional costs for broker commissions and underwriting that are avoided by firms opting not to switch. The vast majority of large employers are self- insured, so generally the principal savings that can be attained by switching carriers to administer such plans relate to administrative costs that are not terribly large in the first place. Consequently, the incentive to change carriers is much lower.

4.4.1 Downloads

Download PowerPoint versions of both figures.

- Figure 4.4a Image Slide (as it appears above)[20]
- Figure 4.4a Editable Slide (can be formatted as desired)[21]
- Figure 4.4b Image Slide (as it appears above)[22]

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[20]https://hub.mili.csom.umn.edu/content/m10027/latest/4.4aIMG.ppt
[21]https://hub.mili.csom.umn.edu/content/m10027/latest/4.4aDATA.ppt
[22]https://hub.mili.csom.umn.edu/content/m10027/latest/4.4bIMG.ppt

- Figure 4.4b Editable Slide (can be formatted as desired)[23]

4.4.2 References

A. Kaiser Family Foundation, The. Health Research & Educational Trust. Employer Health Benefits 2010 Annual Survey. September 2, 2010. http://ehbs.kff.org/?page=abstract&id=1 (accessed November 21, 2010).

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[23]https://hub.mili.csom.umn.edu/content/m10027/latest/4.4bDATA.ppt

Chapter 5

Chapter 5: Government Health Expenditures, Taxes, and Deficits

5.1 5.1 Government Expenditures for Health, 1929-2009[1]

The rise in government-funded health care has been extraordinary by any measure. In terms of constant purchasing power for everyday goods, tax-financed health care has increased 30-fold just since 1960 (figure 5.1a). This includes all federal, state, and local government spending for health care, such as public health, direct delivery of health services, public health insurance, and investments in medical R&D and facilities construction. However, real federal spending on health care grew far faster than tax-paid health care overall. This reflects a substantial shift in the relative roles of federal government vis-à-vis state and local governments in financing (and regulating) health care.

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10028/1.2/>.

5.1a Real government spending on health has increased 30-fold in the past 50 years; the increase is 17-fold in per capita terms

Indexes of real government spending on health using chained GDP deflator: 1960=100
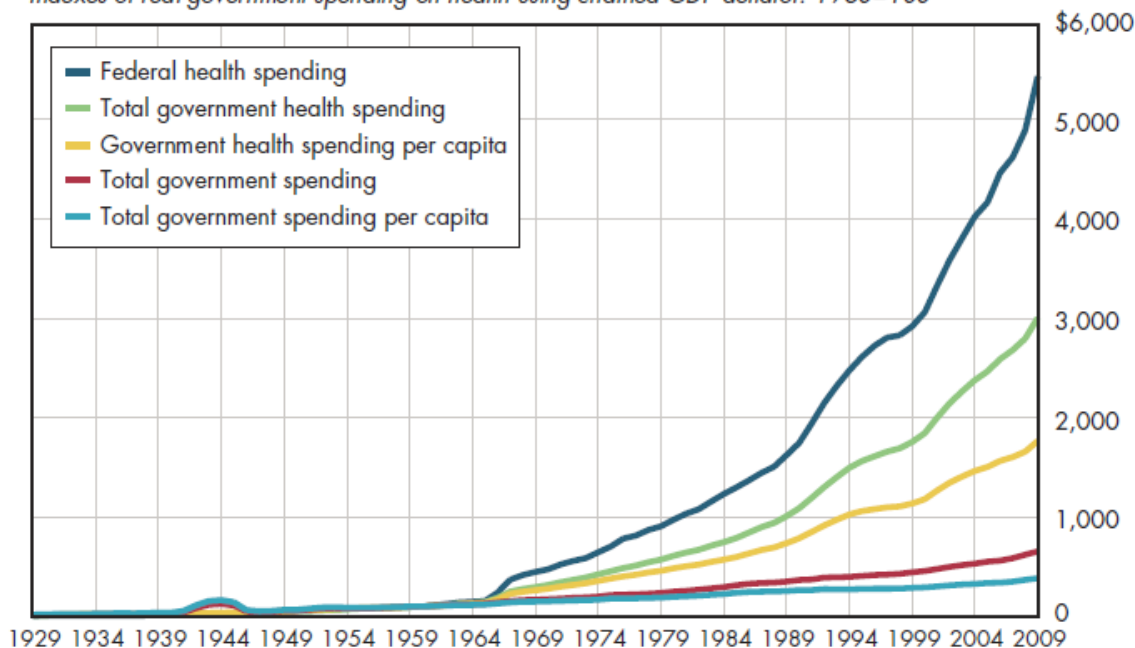
In per capita terms, the overall increase was 17-fold. This does not mean that real health output funded by taxpayers rose 17-fold in 50 years. The inflation adjustment used for all series in figure 5.1a is based on the GDP price deflator rather than a medical price deflator. Thus, the increase represents how much more real output in the general economy was foregone to bankroll the tax-financed share of U.S. health spending. This rapid increase in government health spending was approximately five times as large as the increase in overall government spending during the same time.

Recall from chapter 1 that real GDP also grew enormously during this period. As a share of GDP, publicly-financed health spending in 2007 (the most recent "normal" year) was five times as large as it was in 1965 (figure 5.1b). In contrast, the share of the economy attributable to government spending on all other activities unrelated to health was almost identical in these two years. In summary, the entire amount of the increase in the size of government between those years was accounted for by rising public expenditures on health care.

5.1b Between 1966 and 2007, all of the increase in the size of government was attributable to growth in tax-financed health care

Government spending as a percentage of GDP
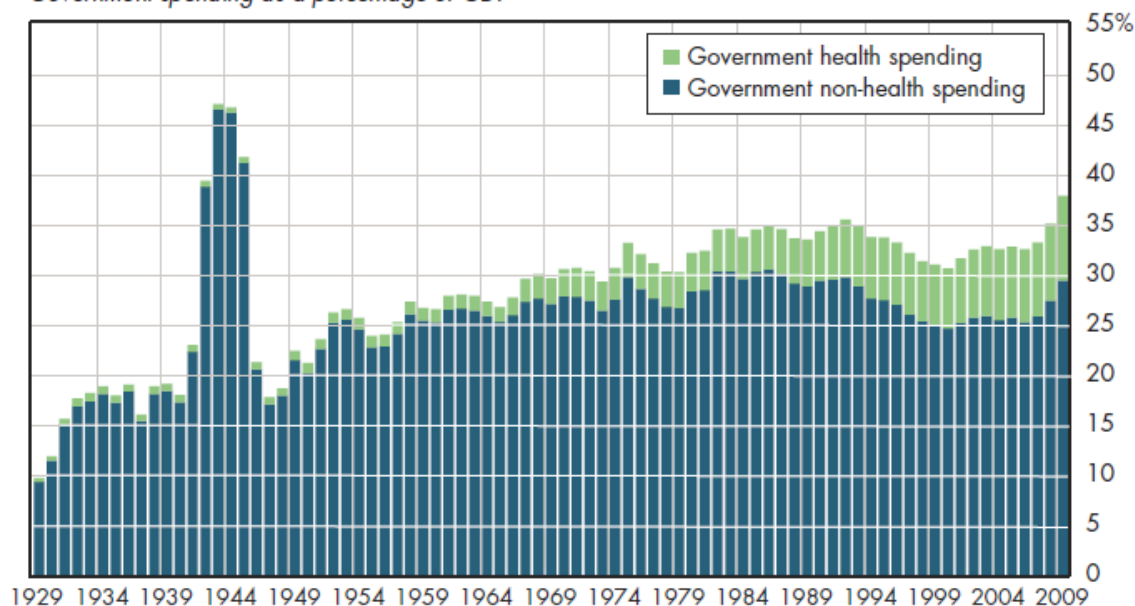
Note: Data include debt service, but the entire amount appears under non-health spending. If allocated by shares of spending, this would increase government health spending and reduce non-health spending.

Except for a brief downward turn during the latter half of the 1990s, the tax-financed health share of the economy has risen without exception each year since 1929.

5.1.1 Downloads

Download Excel tables used to create Figures 5.1a/5.1b Tables[2] . Figures 5.1a and 5.1b were created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 5.1a: Table 5.1.1. Total and Health-Related Government Expenditures Based on Chained 2009 Dollars: 1929-2021
- Fig. 5.1b: Table 5.1.2. Total Government Expenditures on Health Care as a Percent of GDP: 1929-2021

Download PowerPoint versions of both figures.

- Figure 5.1a Image Slide (as it appears above)[3]
- Figure 5.1a Editable Slide (can be formatted as desired)[4]
- Figure 5.1b Image Slide (as it appears above)[5]
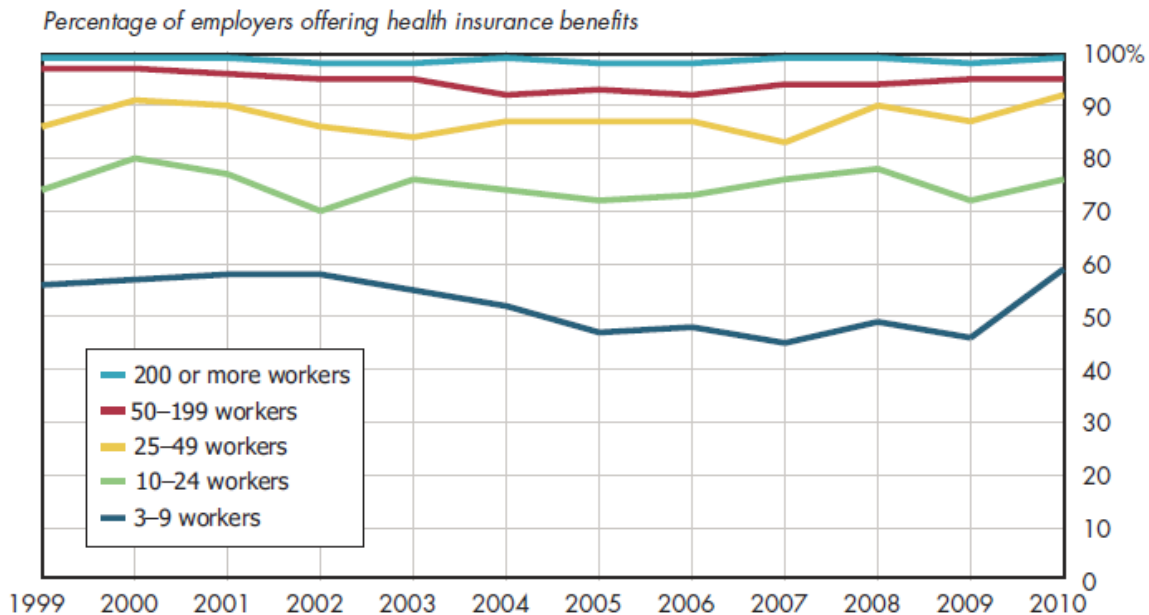- Figure 5.1b Editable Slide (can be formatted as desired)[6]

5.1.2 References

A. Author's calculations.

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[2]https://hub.mili.csom.umn.edu/content/m10028/latest/5.1TAB.xls
[3]https://hub.mili.csom.umn.edu/content/m10028/latest/5.1aIMG.ppt
[4]https://hub.mili.csom.umn.edu/content/m10028/latest/5.1aDATA.ppt
[5]https://hub.mili.csom.umn.edu/content/m10028/latest/5.1bIMG.ppt
[6]https://hub.mili.csom.umn.edu/content/m10028/latest/5.1bDATA.ppt

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.

5.2 5.1 Bonus Material: Contribution of Health to Growth in Government Spending[7]

Health spending has been a significant driver in the growing size of government at all levels
Health spending has been the principal factor behind the growth in government as a share of the economy over the past few decades.

5.1c | For decades, government health spending has been the dominant driver of increases in the size of government at all levels

Percentage of growth in government attributable to increased government health spending

Note: each bar shows what share of the increase in the size of government between each base year shown and 2012 resulted from higher government health spending. For example, since 1990, the net increase in federal government health spending as a share of GDP was nearly twice as large as the increase in the federal government share of GDP during that time period. The same is true of state and local government health spending.

This chart essentially shows that between 1980 and 2012, for every dollar of increase in the size of the federal government, more than $2.50 was the result of higher health care spending. That is, health care not only accounted for every penny in the increase in the federal share of GDP, but it also crowded out an additional $1.50 in federal spending that used to be spent on something else, such as national defense (national defense is the component of government spending that shrank the most during this period). The story is similar—though less extreme—at the state and local government level. Fully 100% of the growth in state and local government since 1970 was due to health care. Since 1990—due to the explosive growth in Medicaid, health care has been responsible for 175% of the growth. That is, like the federal government, state and local governments have seen health care account for every penny of the increase in state and local government while also crowding out roughly 75 cents in spending on things many taxpayers might view as much more important (or at least of equivalent importance), such as education or criminal justice.

POWERPOINT DOWNLOAD

- Figure 5.1c Editable Slide (can be formatted as desired)[8]

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[7]This content is available online at <https://hub.mili.csom.umn.edu/content/m10035/1.2/>.

[8]https://hub.mili.csom.umn.edu/content/m10035/latest/5.1cDATA.ppt

Download Excel tables used to create this figure: Figure 5.1c Table[9] . The workbook contains several supporting worksheets, but the data used to produce the figure come from Table 5.1.3. Cumulative Share of Total Government Spending Growth Attributable to Growth in Government Health Care for Selected Base Years: 1929-2021.

5.3 5.2 Health Component Grew the Fastest in Government Spending[10]

Tax-financed health expenditures over the past 50 years have grown faster than any other major functional area of government spending, including defense, income sup- port, and education. Since 1959, the increase in government health spending as a percentage of GDP more than exceeded the decline in defense spending's share of the economy through 2008 (figure 5.2a).

5.2a Government health spending has been the fastest growing major component of government budgets for the past 50 years

Percentage of GDP
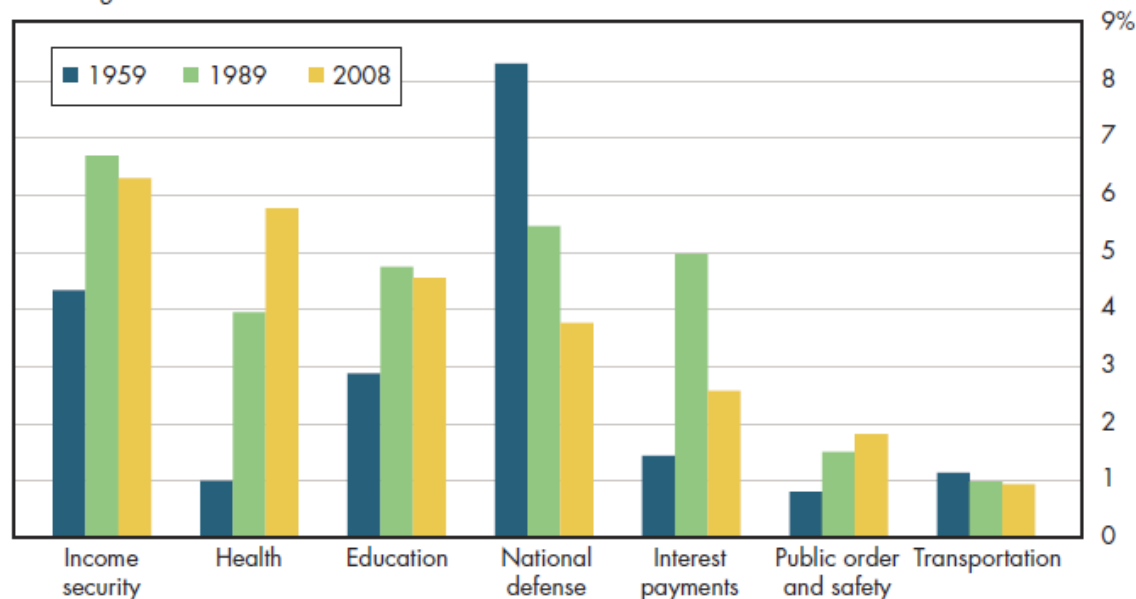
Note: This chart shows the seven largest functional areas of federal, state, and local budgets in 2008, displayed (left to right) by percent of GDP in 2008.

Along with defense, transportation funding declined as a share of GDP relative to 1959 levels. In the aftermath of the Great Society initiatives in the 1960s, it should not be too surprising that both income support and education grew as a percent of GDP between 1959 and 1989, but both also subsequently had declined by 2008. Even interest payments on the national debt followed a similar path (although this will change considerably in the decades going forward).

Of the seven largest functional areas of federal, state, and local budgets, the only one (other than health care) that grew in the 30 years from 1959 to 1989 and the almost-30 years from 1989 to 2008 was spending

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[9]https://hub.mili.csom.umn.edu/content/m10035/latest/5.1.3TAB.xls

[10]This content is available online at <https://hub.mili.csom.umn.edu/content/m10029/1.1/>.

for public order and safety. However, the increase in GDP share attributable to government-paid health care during this period was almost five times as large as the increase for public order and safety.

This highlights the reason why health care has become such an intense focus of attention at all levels of government in recent years. In almost every state, health care has become either the largest or the fastest-growing component of public spending, making it increasingly difficult to finance other priorities such as education or criminal justice.

The federal share of government-paid health spending has generally risen during this period, as has the role played by intergovernmental transfers (IGTs) of funds from the federal government to state and local governments (figure 5.2b). These include federal matching funds provided under Medicaid (ranging from a minimum of 50 percent in the wealthiest states such as New York and Massachusetts to more than 80 percent in Mississippi), federal categorical grants for health care, and federal block grants for health care, such as maternal and child health services. If IGTs are counted on the federal side of the ledger, the federal share of health spending is now approaching 75 percent.

5.2b Taking into account federal transfers to states for health, the federal share of government health spending exceeds 70 percent

Federal percentage of total government health expenditures
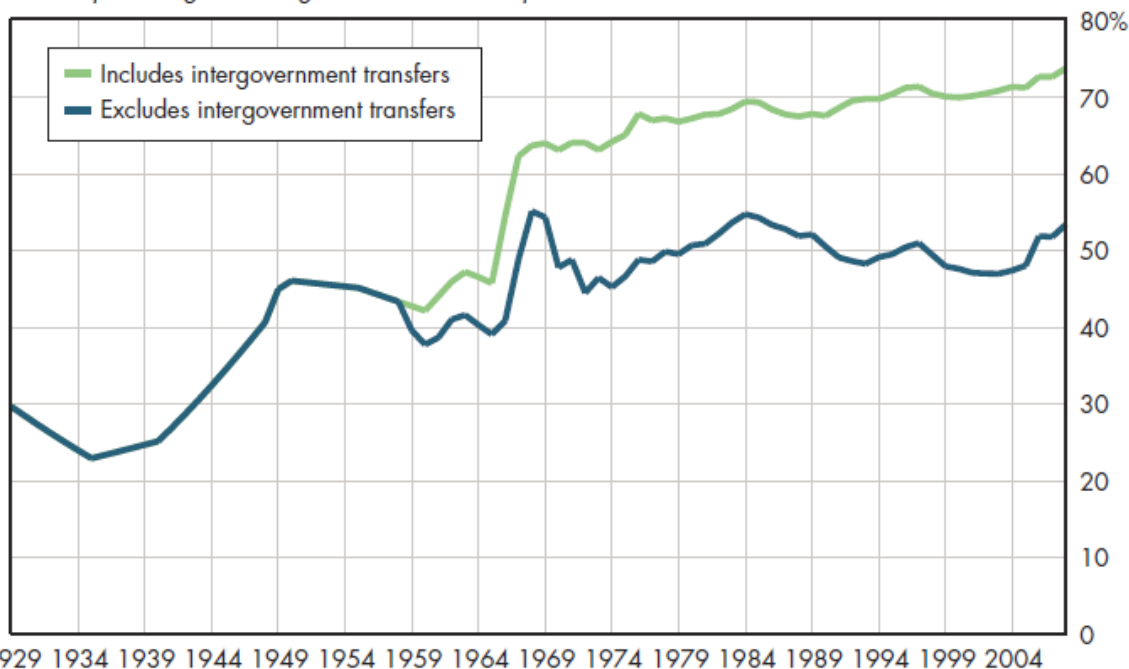
5.3.1 Downloads

Download Excel workbooks used to create Figure 5.2a Table[11] and Figure 5.2b Table[12] . [Note that you'd have separate links for each set of tables] Figures 5.2a and 5.2b were created from the following tables (the workbook includes all supporting tables used to create these tables):

- Fig. 5.2a: Table 5.2.1. Government Current Expenditures as a Percentage of GDP, 1959-2010
- Fig. 5.2b: Table 5.2.2. Federal Health Expenditures as a Percentage of Total Federal, State and Local Health Expenditures, 1929-2021

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[11]https://hub.mili.csom.umn.edu/content/m10029/latest/5.2aTAB.xls
[12]https://hub.mili.csom.umn.edu/content/m10029/latest/5.2bTAB.xls

Download PowerPoint versions of both figures.

- Figure 5.2a Image Slide (as it appears above)[13]
- Figure 5.2a Editable Slide (can be formatted as desired)[14]
- Figure 5.2b Image Slide (as it appears above)[15]
- Figure 5.2b Editable Slide (can be formatted as desired)[16]
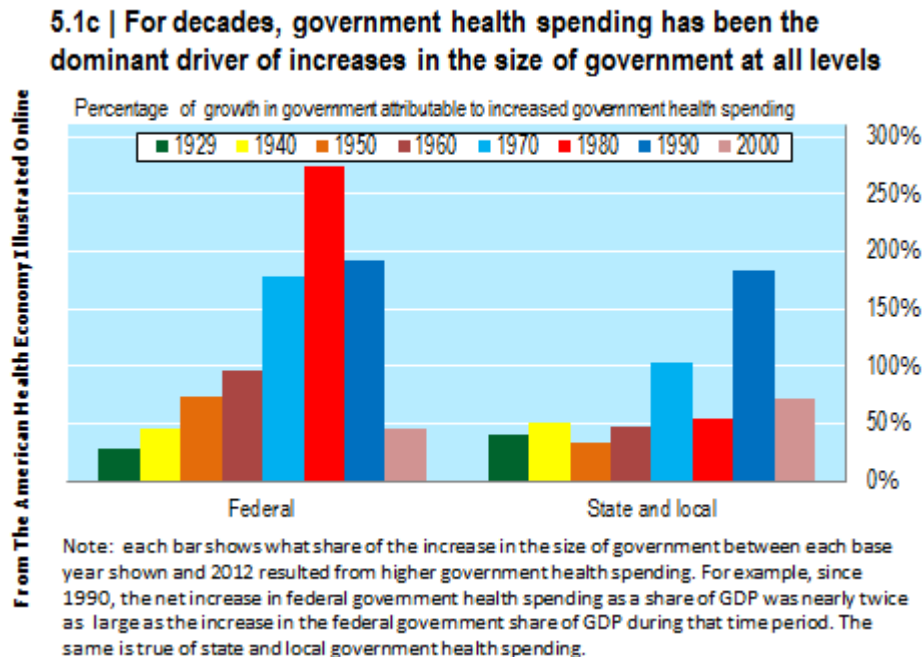
5.3.2 References

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.

5.4 5.3 US Health Share of Government Spending among G7 Counties[17]

The government share of GDP is lower in the United States than in any other country in the G7 except Japan (figure 5.3a). However, the share of GDP attributable to tax-financed health care is higher in the United States than in all other G7 nations except Germany and France. Currently, the difference is not large but is likely to grow because of the new U.S. health reform law. Even for Germany and France, the lion's share of the large difference in government spending relative to GDP relative to the United States is accounted for by factors unrelated to public spending on health care.

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[13]https://hub.mili.csom.umn.edu/content/m10029/latest/5.2aIMG.ppt
[14]https://hub.mili.csom.umn.edu/content/m10029/latest/5.2aDATA.ppt
[15]https://hub.mili.csom.umn.edu/content/m10029/latest/5.2bIMG.ppt
[16]https://hub.mili.csom.umn.edu/content/m10029/latest/5.2bDATA.ppt
[17]This content is available online at <https://hub.mili.csom.umn.edu/content/m10030/1.1/>.

5.3a The U.S. share of GDP devoted to tax-financed health spending is comparable to that of its G7 competitors.

Percentage of GDP (2007)

G7 countries listed (left to right) by GDP in 2007
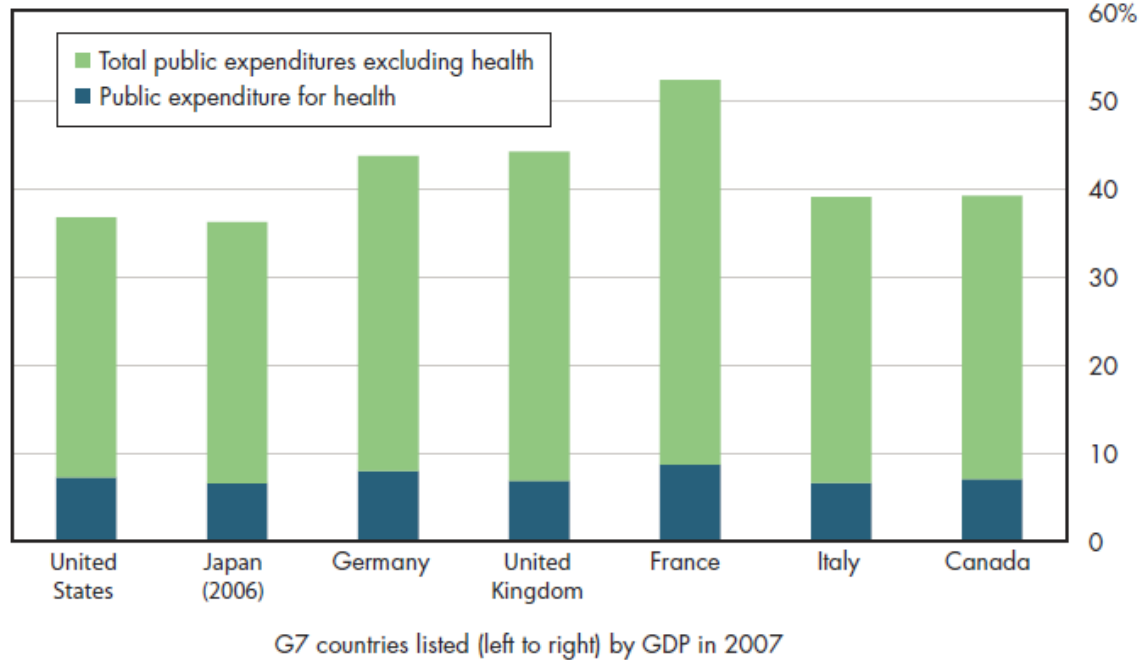
Figure 5.3b compares in a different way the public role in health spending between countries. The United States outpaces all of its G7 competitors in terms of the fraction of total government spending that is devoted to health care (this would be true even if the pool of major competitors is extended to include China and Russia). Again, this relatively small difference is likely to increase if the health reform law is implemented over several years.

5.3b In the G7, the United States has the highest share of government spending devoted to health but the lowest public share of total health spending

Percentage (2007)
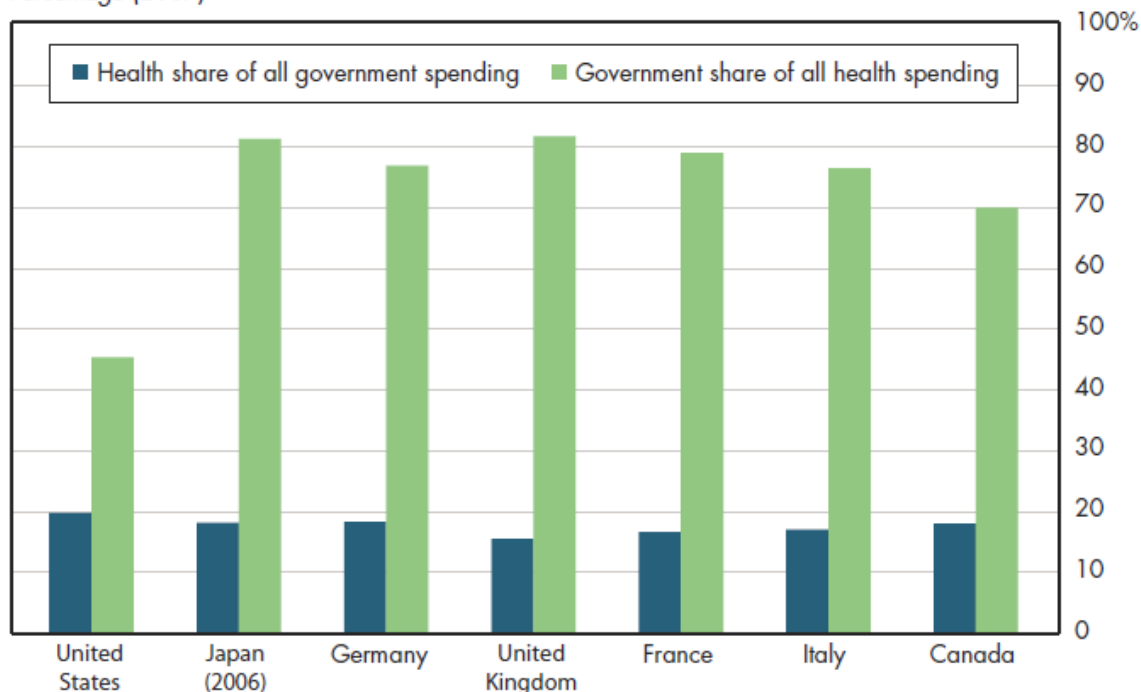
Despite this, the overall fraction of total health spending that is financed by government is far lower in the United States — by 25 to 35 percentage points — than in any of the other G7 nations. Recall from figure 3.6a that except for a handful of countries, private health insurance in the United States more than fills this "gap" in spending, resulting in out-of-pocket spending as a lower share of U.S. health spending than in almost any other OECD country. Thus, the main difference between the United States and its competitors is not in terms of the fraction of spending that is financed through third parties, but simply the extent to which the United States relies on public insurance rather than private insurance.

5.4.1 Downloads

Download Excel tables used to create both figures: Figures 5.3a/5.3b Tables[18] . Figures 5.3a and 5.3b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 5.3. Total General Government Expenditures and Public Expenditures on Health as a Percent of GDP for Selected Industrialized Countries, 2007

Download PowerPoint versions of both figures.

- Figure 5.3a Image Slide (as it appears above)[19]
- Figure 5.3a Editable Slide (can be formatted as desired)[20]
- Figure 5.3b Image Slide (as it appears above)[21]
- Figure 5.3b Editable Slide (can be formatted as desired)[22]

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[18]https://hub.mili.csom.umn.edu/content/m10030/latest/5.3TAB.xls
[19]https://hub.mili.csom.umn.edu/content/m10030/latest/5.3aIMG.ppt
[20]https://hub.mili.csom.umn.edu/content/m10030/latest/5.3aDATA.ppt
[21]https://hub.mili.csom.umn.edu/content/m10030/latest/5.3bIMG.ppt
[22]https://hub.mili.csom.umn.edu/content/m10030/latest/5.3bDATA.ppt

5.4.2 References

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

5.5 5.4 Public Sector Pays 80% Health Costs for People of Poor Health[23]

Approximately 80 percent of health spending by people who have the worst health is tax-financed. This is true whether health status is measured in terms of physical health or mental health. The numbers shown in figure 5.4 are based on self-reported health status, in which individuals categorize their health as Excellent, Very Good, Good, Fair, or Poor. Self-reported health status has been shown to be a good proxy for mental and physical health, using "objective" measures such as the ability to perform activities of daily living (eating, bathing, and so forth).

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[23]This content is available online at <https://hub.mili.csom.umn.edu/content/m10031/1.3/>.

5.4 The share of health spending covered by government increases as physical or mental health status declines

Percentage of personal health spending paid by government (2007)

Self-reported health status, 2002
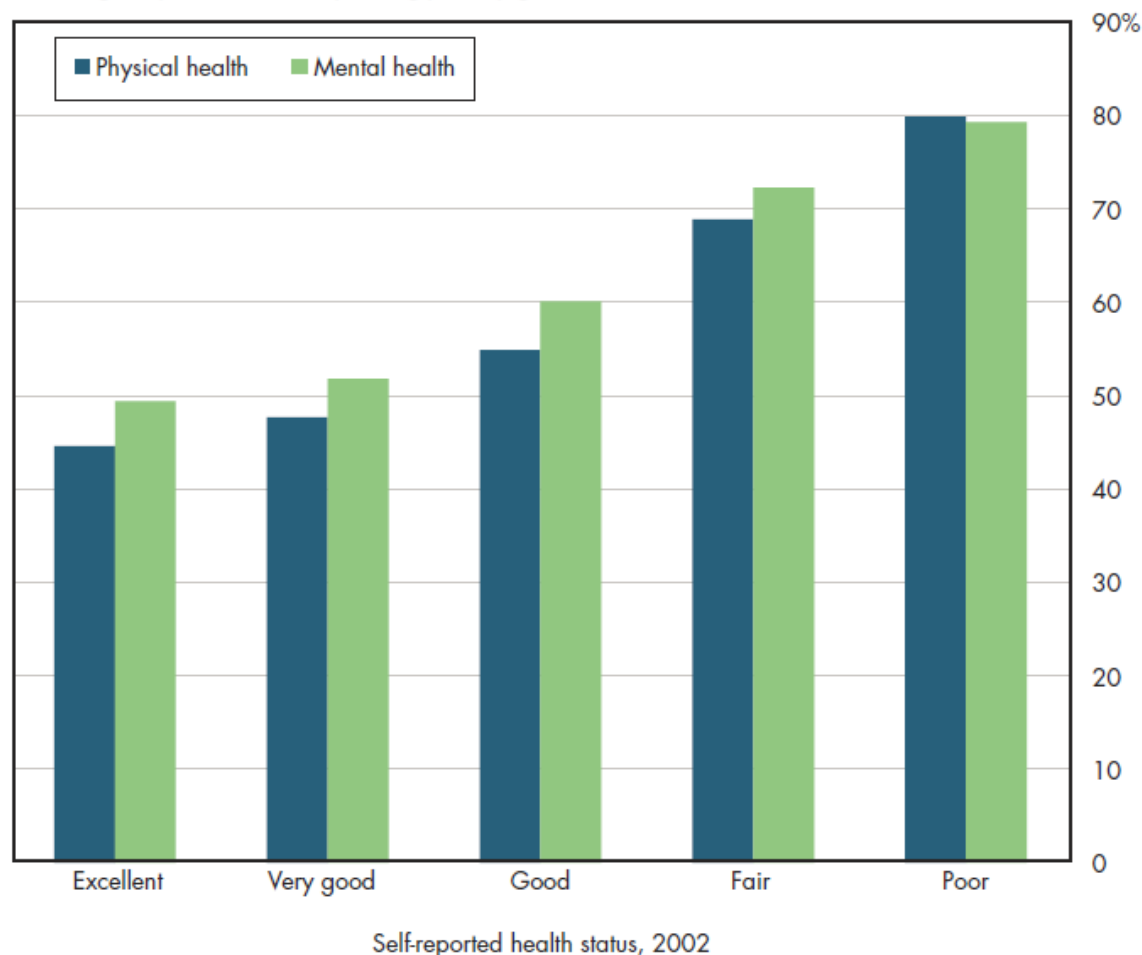
As shown in figure 5.4, the share of health spending paid by the government rises steadily as health status worsens. This suggests at least some degree of "target efficiency" in terms of focusing public spending on those most in need of medical care. Yet even among those in excellent health, more than 40 percent of health spending is publicly financed. This happens for two reasons. First, Medicare provides near- universal coverage for the elderly, some of whom report excellent health. Although Medicare covers less than half the health spending for a typical person age 65 or older, an important reason for this low percentage is that Medicare was not designed to cover long-term nursing care costs. Among the elderly who have excellent health, nursing home expenses would be minimal; hence, Medicare would finance a higher share of their total annual spending. The second important contributor to this result is that the public spending amounts include tax expenditures such as the subsidy for employer-based health benefits. Given the large fraction of the population who have employer-provided health insurance, this particular subsidy is largely independent of health status. It should not be surprising that many in excellent health benefit from it.

Those who live in families below the poverty level tend to have worse health than those with higher incomes. Nevertheless, many such individuals are in excellent health. However, to the degree that the tax exclusion subsidizes both a higher dollar amount and share of health spending for those who have high incomes and who are in excellent health, the targeting efficiency of taxpayer-financed health spending might

be questioned.

5.5.1 Downloads

Download PowerPoint versions of figure.

- Figure 5.4 Image Slide (as it appears above)[24]
- Figure 5.4 Editable Slide (can be formatted as desired)[25]

There's no table for figure since source is included directly on the slide.

5.5.2 References

A. Seldon TM and M Sing. The Distribution of Public Spending for Health Care in the United States, 2002. Health Affairs Web Exclusive 2008; 27:5w349-w359. http://content.healthaffairs.org/cgi/reprint/27/5/w349 (accessed June 14, 2010).

5.6 5.5 Taxpayers Finance Almost Half of Health Spending for the Highest-Income Families[26]

Although more than 80 percent of health spending among those with incomes below poverty is tax-financed, so too is almost half of the spending for families with incomes at four or more times the poverty level (figure 5.5a). As with health status, there is some evidence of target efficiency in terms of greater reliance on public financing for health expenses as family income declines.

5.5a Although the public share of health expenses increases as income declines, almost half of spending for families above 400 percent of poverty is tax-financed

Percentage of personal health spending paid by the government (2002)

Family income as a percentage of federal poverty level

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[24]https://hub.mili.csom.umn.edu/content/m10031/latest/5.4IMG.ppt
[25]https://hub.mili.csom.umn.edu/content/m10031/latest/5.4DATA.ppt
[26]This content is available online at <https://hub.mili.csom.umn.edu/content/m10032/1.2/>.

Despite major expansions of Medicaid in recent decades, fewer than half of those with incomes below poverty are enrolled in Medicaid or the State Children's Health Insurance Program (SCHIP). Medicaid covers much more than half of health spending for the poor. Many states have "spend-down" programs that permit those with high medical expenses to deduct those from family income for purposes of determining Medicaid eligibility. Consequently, Medicaid covers nearly two-thirds of nursing home patients. Almost 10 percent of the poor are covered by Medicare, which further boosts the share of spending covered by taxpayers. Finally, it was shown previously that a high fraction of health spending among those uninsured all year is uncompensated care—much of which is indirectly paid through taxpayers.

As for the tax exclusion, in a technical sense, individuals at the highest income level pay for themselves. That is, assuming that every dollar of tax expenditures must be offset by a dollar of tax revenue obtained elsewhere, the gross amount of taxes paid by the highest income households to make up this revenue difference will exceed the value of the tax benefit provided by the exclusion. However, especially in the light of the deadweight losses imposed by various forms of taxation, it would be far more efficient to simply let such households pay for their own health benefits directly rather than subsidize these through the tax system. The Office of Management and Budget (OMB) estimates the amount to be at least 25 cents per dollar of taxes collected, but it could be anywhere from 30 cents to more than one dollar, according to other estimates.

The formula used to determine the federal funding share of Medicaid and the Children's Health Insurance Program (CHIP) takes into account per capita income. Even so, there are wide state-level disparities in Medicaid/CHIP funding per poor person, partly due to higher federal spending per poor person in some of the wealthiest states (figure 5.5b).

5.5b Federal Medicaid and CHIP spending per poor person varies widely by state; the amount does not decline as state income rises

Medicaid and CHIP spending per poor person (2008)
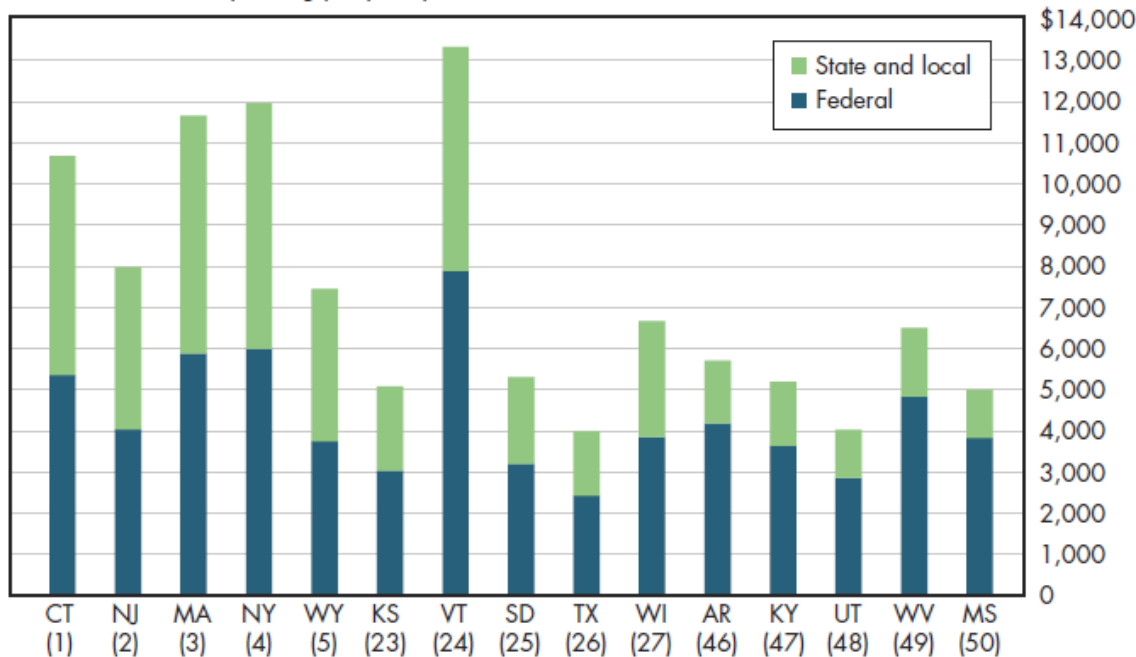
States ranked by size of 2008 per capita income

5.6.1 Downloads

Download Excel tables used to create figure: Figure 5.5b Table[27] . Figure 5.5b was created from the following table (the workbook includes all supporting tables used to create this table):

- Fig. 5.5b: Table 5.5.2. Medicaid and CHIP Expenditures per Poor Person, 2008 and 2012

There's no table for Fig. 5.5a since source is included directly on the slide.
Download PowerPoint versions of both figures.

- Figure 5.5a Image Slide (as it appears above)[28]
- Figure 5.5a Editable Slide (can be formatted as desired)[29]
- Figure 5.5b Image Slide (as it appears above)[30]
- Figure 5.5b Editable Slide (can be formatted as desired)[31]

5.6.2 References

A. Seldon TM and M Sing.   The Distribution of Public Spending for Health Care in the United States, 2002.   Health Affairs Web Exclusive 2008; 27:5w349-w359. http://content.healthaffairs.org/cgi/reprint/27/5/w349 (accessed June 14, 2010).
B. Kaiser Family Foundation, The. statehealthfacts.org.

5.7 5.6 Medicare Beneficiaries Receive More Than They Pay[32]

Most Medicare beneficiaries—even those who have high incomes—do not pay for themselves. The difference between the dollar value of lifetime benefits paid and the dollar amount of lifetime payroll taxes is generally measured in tens of thousands of dollars per Medicare beneficiary, as shown in figure 5.6. These calculations use inflation-adjusted dollars and a reasonable discount rate to equalize future dollars with today's dollars.

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[27]https://hub.mili.csom.umn.edu/content/m10032/latest/5.5TAB.xls
[28]https://hub.mili.csom.umn.edu/content/m10032/latest/5.5aIMG.ppt
[29]https://hub.mili.csom.umn.edu/content/m10032/latest/5.5aDATA.ppt
[30]https://hub.mili.csom.umn.edu/content/m10032/latest/5.5bIMG.ppt
[31]https://hub.mili.csom.umn.edu/content/m10032/latest/5.5bDATA.ppt
[32]This content is available online at <https://hub.mili.csom.umn.edu/content/m10033/1.2/>.

5.6 Lifetime Medicare benefits grew fastest for low-income workers; even for high-income workers, net lifetime benefits exceed $30,000

Net lifetime Medicare benefits (own benefits minus own taxes paid), 2010 dollars in thousands
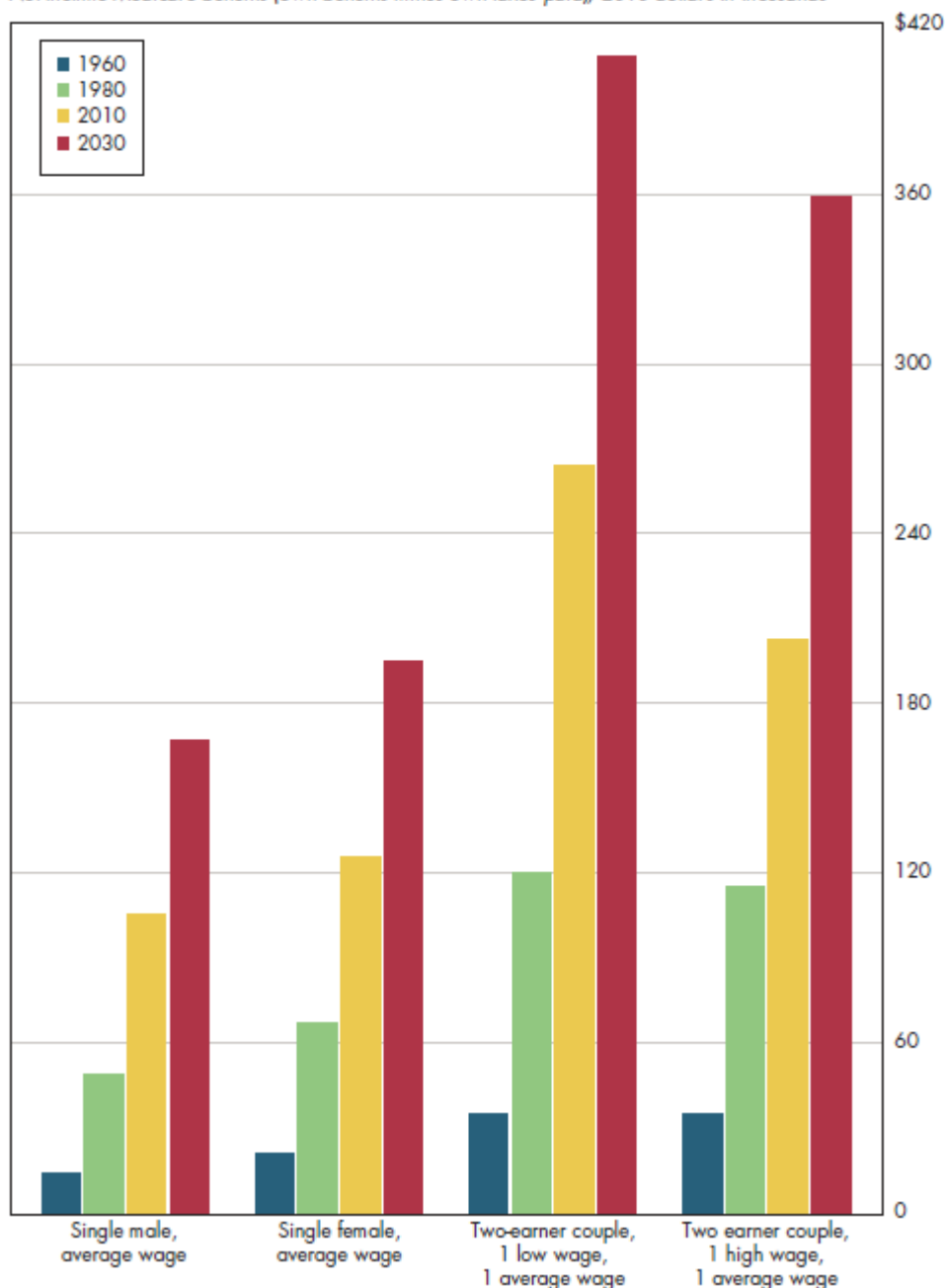
For most income groups, the net lifetime benefits of Medicare have increased over time. This reflects that growth in per capita medical spending has outpaced the rate of increases in wages and salaries over time. It also is a function of increases in life expectancy, which have had a far larger impact on lifetime medical expenses financed by Medicare than on the amount of lifetime payroll taxes paid into Medicare. In figure 5.6, low-income individuals are represented by those whose average lifetime earnings are $5,000 annually, while high-income individuals are assumed to have average annual lifetime earnings of $140,000; these individuals

comprise a small fraction of Medicare beneficiaries.

For this highest-income group, net lifetime benefits no longer kept increasing for those who became eligible for Medicare in 1995. This reflects the elimination of the cap on earnings to which the 2.9 percent Medicare payroll tax originally applied. Clearly, for those who have extremely high incomes, for example, averaging $300,000 per year, lifetime Medicare benefits might well be negative, but this situation affects a minuscule fraction of current eligible individuals. This number surely would grow under the new taxes included under health reform. These are restricted to high-income households and include increasing the payroll tax deduction by 0.9 percentage points and imposing, for the first time, a 3.8 percent tax on investment income.

Regardless of whether their net Medicare benefits are positive or negative, it would be far more efficient, as noted for the tax exclusion, for high-income individuals to finance their own Medicare benefits directly than to provide benefits because they already had paid for them through various taxes.

5.7.1 Downloads

Download PowerPoint versions of figure.

- Figure 5.6 Image Slide (as it appears above)[33]
- Figure 5.6 Editable Slide (can be formatted as desired)[34]

There's no table for figure since source is included directly on the slide.
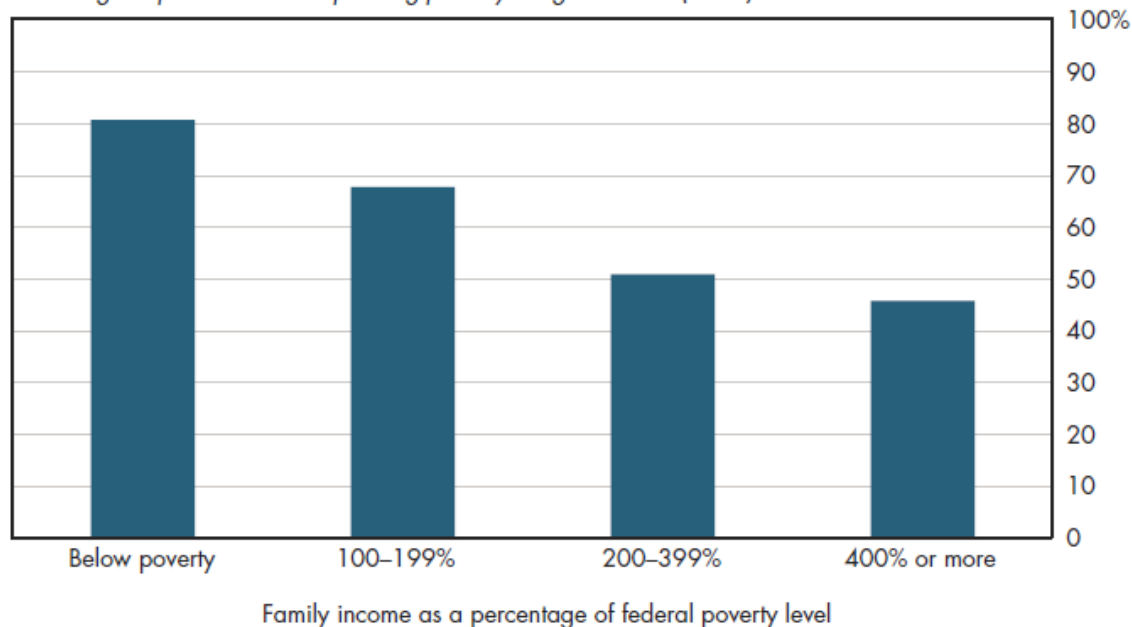
5.7.2 References

A. Steuerle CE and S Rennane. Social Security and Medicare Taxes and Benefits Over a Lifetime. Urban Institute. January 2011. http://www.taxpolicycenter.org/UploadedPDF/social-security-medicare-benefits-over-lifetime.pdf (accessed June 10, 2011).

5.8 5.7 Medicaid Share of State Health Spending across States[35]

Medicaid spending now is the largest single component of state government expenditures. With the exception of Arizona, states that have the largest Medicaid programs relative to all other spending are concentrated in the eastern half of the United States, predominantly in the northeastern region (figure 5.7a).

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[33]https://hub.mili.csom.umn.edu/content/m10033/latest/5.6IMG.ppt

[34]https://hub.mili.csom.umn.edu/content/m10033/latest/5.6DATA.ppt

[35]This content is available online at <https://hub.mili.csom.umn.edu/content/m10034/1.3/>.

5.7a FY2007 Medicaid expenditures as a percentage of total state government expenditures are highest in the Northeast

Percentage
- 0.0–14.5
- 14.7–18.1
- 18.3–19.9
- 20.0–22.4
- 22.5–35.6
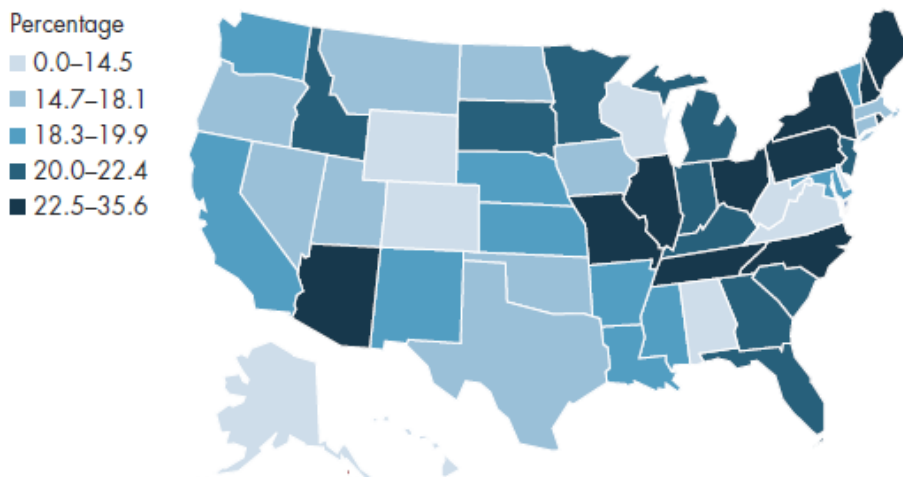
These numbers are for 2007 because it might be more representative of relative differences across states than data from more recent years. The federal government now finances almost 60 percent of Medicaid and SCHIP costs. The federal share of overall spending for these programs ranges from a high of 76.3 percent in Mississippi to 50 percent in 12 states whose high per capita income precludes their qualifying for a higher federal matching rate. The numbers on the map are derived by counting all Medicaid/SCHIP spending (including federal funds), and dividing this amount by the total amount of consolidated state expenditures (which also include federal funds). Using this measure, the Medicaid share of total spending averages approximately 21 percent nationally but varies by a factor of three across states (figure 5.7b). In the five states that have the largest shares, Medicaid spending represents approximately 30 cents of every dollar spent. Conversely, in states with the lowest shares, Medicaid spending is only approximately 10 cents on the dollar.

5.7b The Medicaid share of state spending varies by a factor of three across states

Medicaid percentage of total state/local government expenditures, including federal funds (2007)
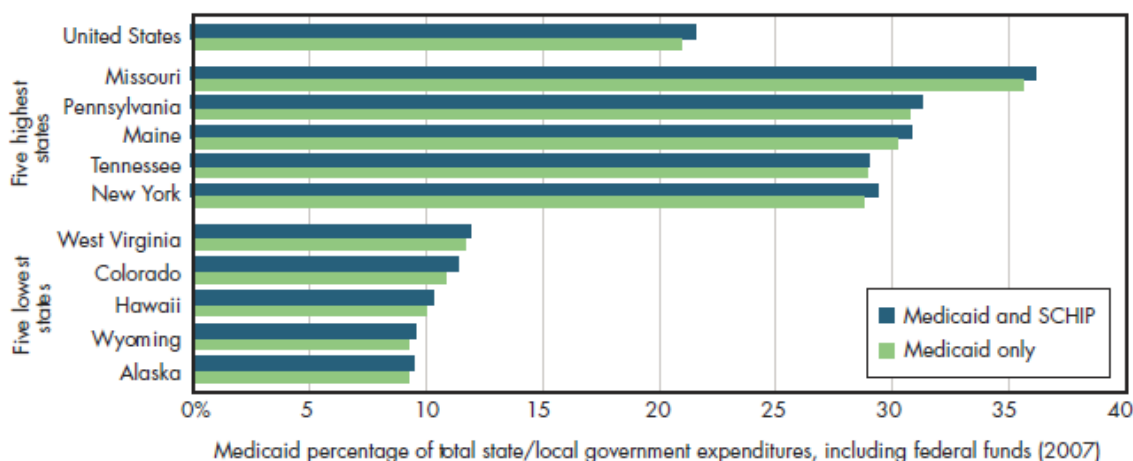
When federal Medicaid spending is excluded, a somewhat different view emerges. The national Medicaid share of state spending is approximately 13 percent, but by this metric, there is a four-fold difference across the states (figure 5.7c). However, although the rankings change a bit, the states included in the top and bottom five are identical to the states facing the highest and lowest burdens when federal funds are included.

5.7c If federal funds are excluded, the Medicaid share of state expenditures is much smaller, but this share varies by a factor of four

Medicaid percentage of total state/local government expenditures, excluding federal funds (2007)
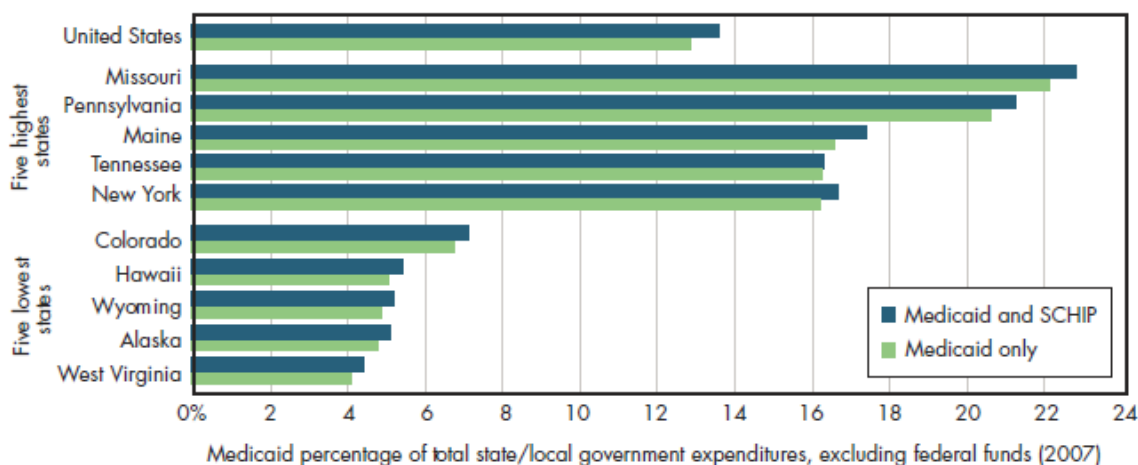
5.8.1 Downloads

Download PowerPoint versions of all figures.

- Figure 5.7a Image Slide (as it appears above)[36]
- Figure 5.7a Editable Slide (can be formatted as desired)[37]
- Figure 5.7b Image Slide (as it appears above)[38]
- Figure 5.7b Editable Slide (can be formatted as desired)[39]
- Figure 5.7c Image Slide (as it appears above)[40]
- Figure 5.7c Editable Slide (can be formatted as desired)[41]

There's no table for figures since source is included directly on the slides.

5.8.2 References

A. National Association of State Budget Officers. State Expenditure Report Fiscal Year 2008. http://www.nasbo.org/Publications/StateExpenditureReport/tabid/79/Default.aspx (accessed June 15, 2010).

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[36]https://hub.mili.csom.umn.edu/content/m10034/latest/5.7aIMG.ppt
[37]https://hub.mili.csom.umn.edu/content/m10034/latest/5.7aDATA.ppt
[38]https://hub.mili.csom.umn.edu/content/m10034/latest/5.7bIMG.ppt
[39]https://hub.mili.csom.umn.edu/content/m10034/latest/5.7bDATA.ppt
[40]https://hub.mili.csom.umn.edu/content/m10034/latest/5.7cIMG.ppt
[41]https://hub.mili.csom.umn.edu/content/m10034/latest/5.7cDATA.ppt

Chapter 6

Chapter 6: Health Services and the Family Budget

6.1 6.1 Health Care Is 2nd Largest Personal Consumption Component[1]

Health care now ranks second in importance in the share of personal consumption spending devoted to it (figure 6.1a). At current rates of change in these shares, health care will overtake housing within five years to become the single largest category of consumption.

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10036/1.1/>.

6.1a Health care is the second largest component of personal consumption spending by families
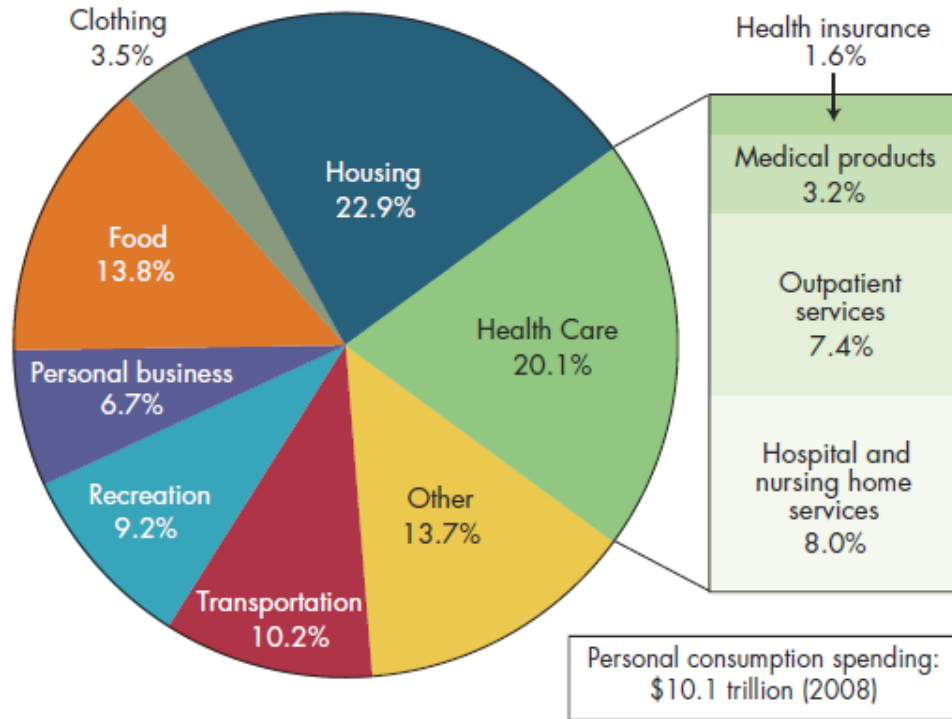
Hospitals and nursing homes account for 40 percent of this health care total, but health consumption also includes payments for medical services and products (for example, pharmaceuticals) and the cost of insurance administration (right side of figure 6.1a). Because this category is intended to measure total consumption of health care goods and services, the total includes both out-of-pocket spending and expenditures covered through public or private health insurance.

The extraordinary productivity of the American economy over the past 80 years has made the necessities of life far more affordable for the typical family. Before the Great Depression, Americans devoted approximately 65 percent of personal consumption spending solely to food, clothing, and shelter (figure 6.1b). By 2008, such necessities constituted only 40 percent of all household consumption. During the same period, health care's share almost quintupled to 20 percent of all personal consumption.

6.1b The health share of family spending has grown as the portion for food, clothing, and shelter has declined

Percentage of PCE

Major components of PCE (listed [left to right] by amount in 2008)
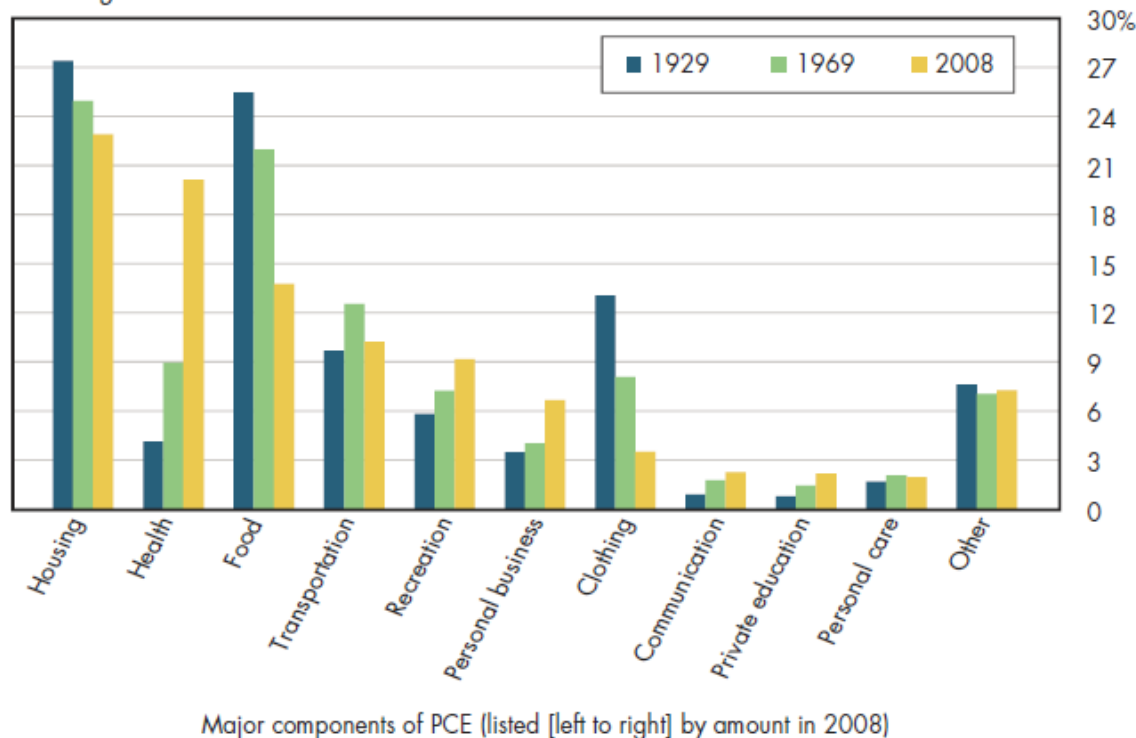
Briefly, the declining share of family spending on necessities over this period more than made up for the rising share of consumption devoted to health care. Health care is not unique in absorbing an ever-rising share of family spending since 1929, but the aggregate increase in its share is by far the largest. Just in the past 40 years, the health share has more than doubled. No other category of consumption exhibits a relative rise of comparable magnitude.

The rising share of consumption devoted to health care reflects higher incomes, more new and costly medical procedures and drugs, an aging population, and the increasing prevalence of public and private health insurance that weakens most incentives to economize on medical care.

6.1.1 Downloads

Download Excel tables used to create both figures: Figures 6.1a/6.1b Tables[2] . Figures 6.1a and 6.1b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 6.1. Distribution of Consumption Expenditures, 1929, 1969, 2008-2012

Download PowerPoint versions of both figures.

- Figure 6.1a Image Slide (as it appears above)[3]
- Figure 6.1a Editable Slide (can be formatted as desired)[4]
- Figure 6.1b Image Slide (as it appears above)[5]

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[2]https://hub.mili.csom.umn.edu/content/m10036/latest/6.1TAB.xls
[3]https://hub.mili.csom.umn.edu/content/m10036/latest/6.1aIMG.ppt
[4]https://hub.mili.csom.umn.edu/content/m10036/latest/6.1aDATA.ppt
[5]https://hub.mili.csom.umn.edu/content/m10036/latest/6.1bIMG.ppt

- Figure 6.1b Editable Slide (can be formatted as desired)[6]

6.1.2 References

A. Department of Commerce. Bureau of Economic Analysis.

6.2 6.2 Direct Family Health Care Spending Accounted for Only 5% Income[7]

Only 5 percent of family income pays directly for health care in the form of the worker share of group health premiums and Medicare Part A payroll taxes, voluntary premiums paid for non-group health insurance, Medicare Parts B and D, and out-of-pocket medical expenses not covered by insurance. Thus, even though health care now accounts for more than 20 percent of personal consumption spending, this greatly exaggerates the visibility of health expenditures in a typical family's budget.

Careful studies have demonstrated that most or all of the cost of employer-paid health premiums actually is borne by workers in the form of lower wages or other forms of fringe benefits. The same logic applies to the 1.45 percent payroll tax paid directly by employers for Medicare Part A (separate from the matching "employee share" that workers see deducted from paychecks). Many (possibly most) workers might not realize this insofar as employer-paid health costs—including workers' compensation or employer-funded on-site health clinics—generally are invisible to them.

Relative to payroll, these directly paid private employer-paid health expenses have risen steadily for decades; even so, such costs are less than $10 for every $100 of private wages and salaries (figure 6.2a). In contrast, when compared with pre-tax profits, the ratio of health spending to profits is lowest when the economy is growing and highest during economic recoveries such as in 1992. This pattern is less pronounced in the ratio of business-paid health costs to after-tax profits, which at times has been as high as $60 to $70 per $100 of profits. Yet by 2007, this ratio had declined sharply to less than $40 per $100 of profits after taxes.

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[6]https://hub.mili.csom.umn.edu/content/m10036/latest/6.1bDATA.ppt
[7]This content is available online at <https://hub.mili.csom.umn.edu/content/m10037/1.1/>.

6.2a In terms of direct spending on health care, households largely have been insulated from increasing health costs; businesses have not

Direct household health spending per $100 of personal income
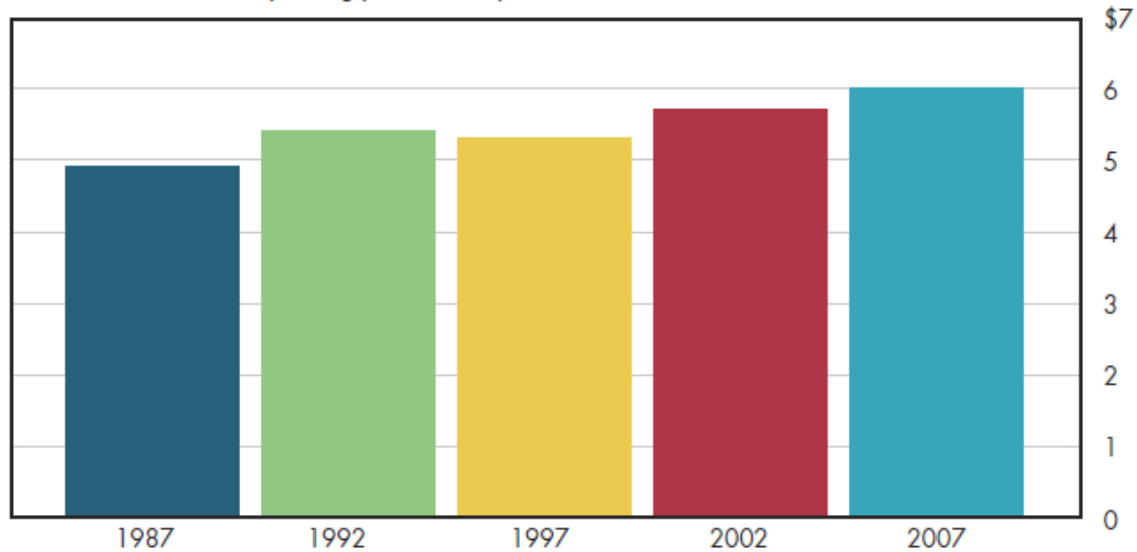
Note: In the framework of "health sponsors," household health spending includes only components that are directly paid, including the employee share of group health insurance premiums, the employee share of Medicare Part A payroll taxes, voluntary premiums paid for Medicare Parts B or D and non-group health insurance, and any out-of-pocket spending not covered by public or private insurance.

6.2b Business-paid health spending has increased modestly relative to wages and salaries

Ratio: sponsor-paid health spending to totals (dollars)
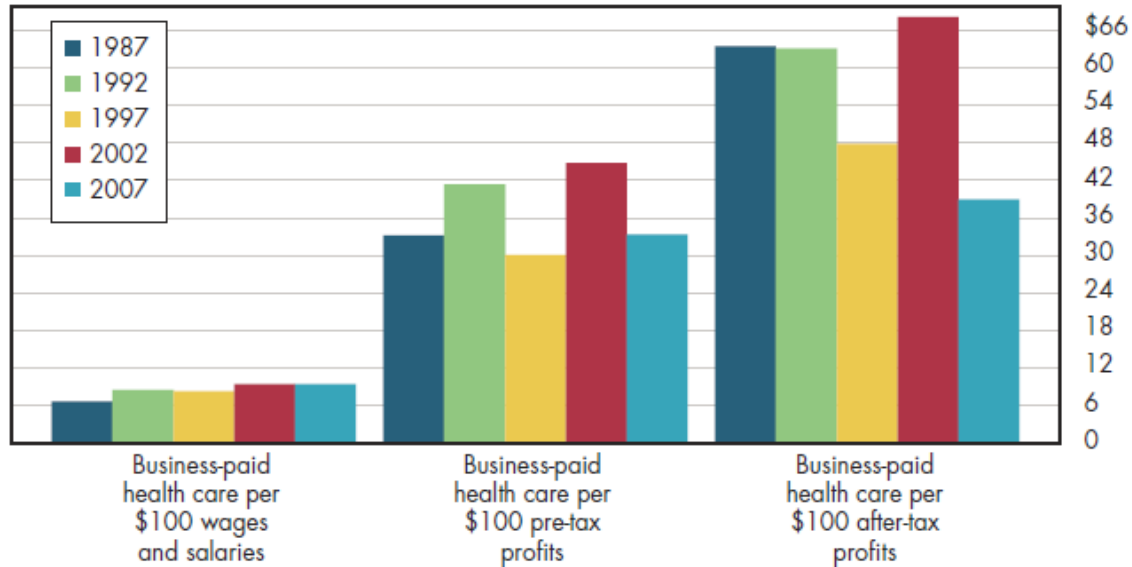
Note: In the framework of "health sponsors," business health expenditures include the private employer share of health insurance premiums for workers and dependents, Medicare Part A and workers' compensation, and industrial in-plant health services.

6.2.1 Downloads

Download Excel tables used to create both figures: Figures 6.2a/6.2b Tables[8] . Figures 6.2a and 6.2b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 1.3.8. U.S. National Health Expenditures, by Private Sponsor: 1987 to 2021

  Download PowerPoint versions of both figures.

- Figure 6.2a Image Slide (as it appears above)[9]
- Figure 6.2a Editable Slide (can be formatted as desired)[10]
- Figure 6.2b Image Slide (as it appears above)[11]
- Figure 6.2b Editable Slide (can be formatted as desired)[12]

6.2.2 References

A. Author's calculations.
B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.

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[8]https://hub.mili.csom.umn.edu/content/m10037/latest/6.2TAB.xls
[9]https://hub.mili.csom.umn.edu/content/m10037/latest/6.2aIMG.ppt
[10]https://hub.mili.csom.umn.edu/content/m10037/latest/6.2aDATA.ppt
[11]https://hub.mili.csom.umn.edu/content/m10037/latest/6.2bIMG.ppt
[12]https://hub.mili.csom.umn.edu/content/m10037/latest/6.2bDATA.ppt

6.3 6.3 Health Care Payment Burden Grew Faster among Highest-Income Families[13]

Direct purchases of health care comprise only one in 16 dollars of annual household spending in families in the bottom fifth of families ranked by income (figure 6.3a). How can health care comprise 20 percent of household consumption yet only five to seven cents per dollar of spending? The explanation is simple. A huge fraction of family health consumption is financed outside the family (or at least appears to be). For example, the numbers shown in figure 6.3a exclude all tax-financed health care financed by third parties. Although households ultimately pay for such care through their own taxes, the amount of tax-financed care for any given family will almost never match that family's implicit contribution in health-related taxes. Likewise, the numbers also exclude employer-paid premiums for health insurance even though such costs generally are borne by covered workers in the form of lower wages.

6.3a Direct health care expenditures constitute only one in 16 dollars spent by the lowest-income families

Percentage of total annual expenditures, families in lowest 20% income before taxes
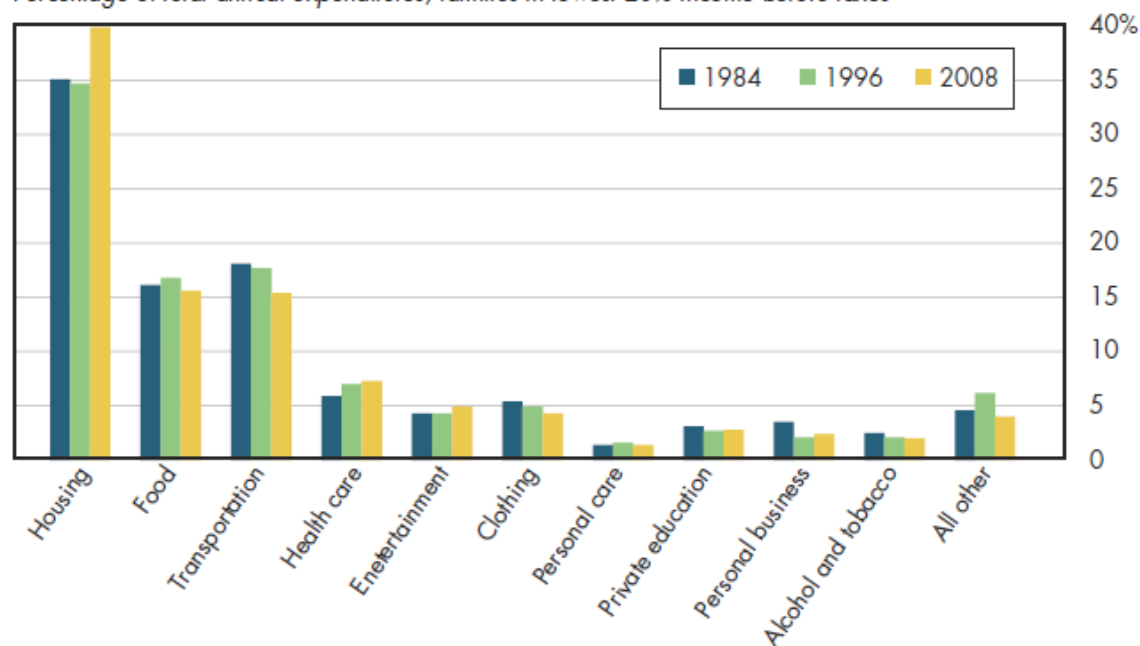
Major components of household expenditures (ranked by size in 2008)

Viewed from this more limited perspective, the health-spending share of family budgets is only slightly higher among the lowest-income families compared with the highest-income families (figure 6.3b). This occurs because so much health care for those at the bottom of the income distribution is financed through taxes. The hidden costs of employer-provided coverage represent a much higher share of income for low-wage workers compared with those who have high salaries or wages. Visible and hidden premium expenses amounted to almost half of family income for those who had the lowest incomes (chapter 4).

[13]This content is available online at <https://hub.mili.csom.umn.edu/content/m10038/1.1/>.

6.3b Direct health care expenditures constitute less than one in 20 dollars spent by the highest-income families

Percentage of total annual expenditures, families in highest 20% income bracket before taxes
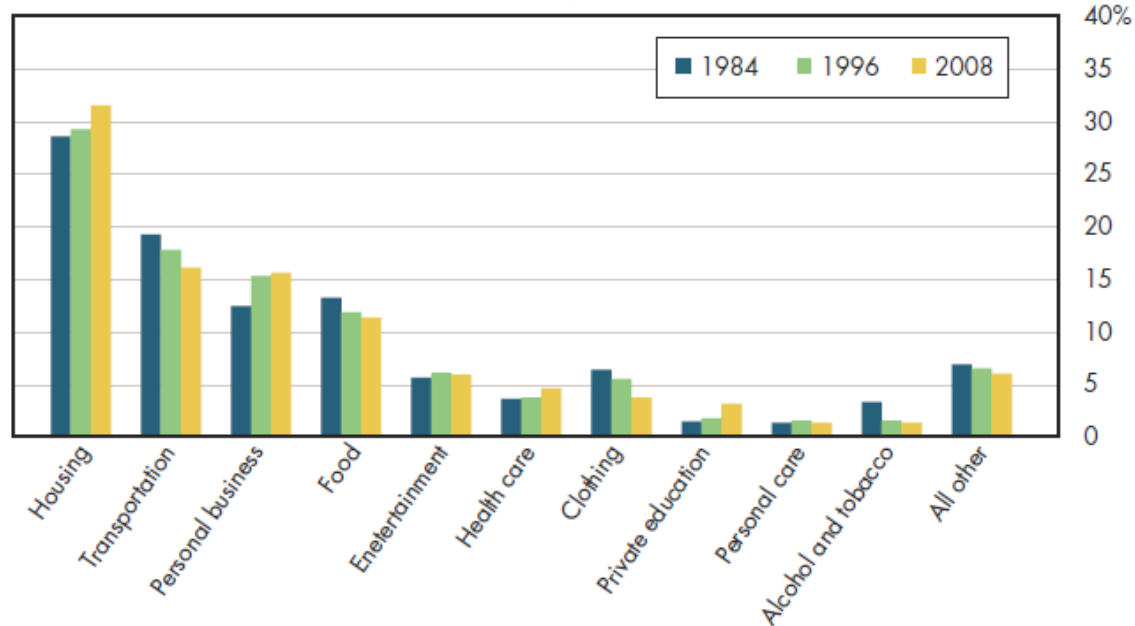
Major components of household expenditures (ranked by size in 2008)

Even though other components of spending also are subsidized (for example, food assistance, housing programs), the lowest-income families devote almost half of their spending to food, clothing, and shelter. Worth noting also is that in such families, the share of annual spending for alcohol, tobacco, and recreation is only slightly smaller than the health share.

The relative financial burden of health care rose approximately 25 percent between 1984 and 2008. Growth in this burden was slightly faster among the highest-income households relative to those in the lowest-income group. A different result emerges when the hidden costs of health care are allocated to the households that actually incur them.

6.3.1 Downloads

Download Excel tables used to create both figures: Figures 6.3a/6.3b Tables[14] . Figures 6.3a and 6.3b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 6.3. Distribution of Average Annual Expenditures for Families in the Lowest and Highest Quintiles of Income Before Taxes, 1984, 1996, 2008

Download PowerPoint versions of both figures.

- Figure 6.3a Image Slide (as it appears above)[15]
- Figure 6.3a Editable Slide (can be formatted as desired)[16]
- Figure 6.3b Image Slide (as it appears above)[17]

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[14]https://hub.mili.csom.umn.edu/content/m10038/latest/6.3TAB.xls
[15]https://hub.mili.csom.umn.edu/content/m10038/latest/6.3aIMG.ppt
[16]https://hub.mili.csom.umn.edu/content/m10038/latest/6.3aDATA.ppt
[17]https://hub.mili.csom.umn.edu/content/m10038/latest/6.3bIMG.ppt

- Figure 6.3b Editable Slide (can be formatted as desired)[18]

6.3.2 References

A. Department of Labor. Bureau of Labor Statistics.

6.4 6.4 Elderly and Children Rely More Heavily on Tax-Financed Health Coverage[19]

Approximately 60 percent of non-elderly adults and children rely principally on employer-provided coverage (figure 6.4a). In contrast, those 65 and older rely extensively on Medicare, although many also have supplemental private insurance through an employer or a policy that is directly purchased.

6.4a Most non-elderly rely on private health insurance coverage, typically through an employer health plan
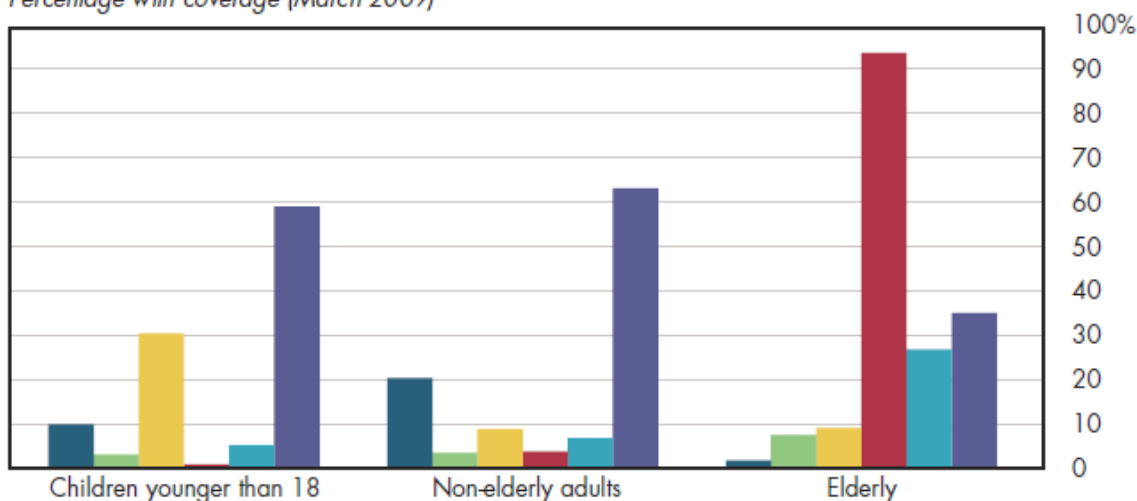
Note: HI = health insurance.

Medicaid covers much of the residual gap in coverage for children, but plays a much smaller corresponding role for non-elderly adults. Adults are twice as likely to be uninsured, even though they have somewhat higher rates of coverage for non-group, military, and Medicare compared with coverage for children.

More than nine of every 10 elderly are covered by Medicare. Medicare Part A (predominantly hospital and nursing home care) is provided at no cost to those qualifying for Social Security. Medicare Part B (predominantly physician and home health care) and Medicare Part D (prescription drugs) require the payment of premiums. These premiums amount to approximately one-fourth of the cost of Parts B and D benefits. All components also have patient cost-sharing in the form of deductibles and copayments. The percentage covered by Medicaid is almost identical for non-elderly and elderly adults, but almost all of the latter group are so-called "dual eligible." This means that they also qualify for Medicare; thus, Medicaid

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[18]https://hub.mili.csom.umn.edu/content/m10038/latest/6.3bDATA.ppt

[19]This content is available online at <https://hub.mili.csom.umn.edu/content/m10039/1.2/>.

covers all or some of their premium payments and cost-sharing obligations. Fewer than 2 percent of the elderly are uninsured.

Public programs finance 65 percent of health spending by the elderly and 40 percent of expenditures for children (figure 6.4b). In contrast, the public program share of health spending for adults younger than age 65 is less than half that of the aged. Data for all the years shown are not available, but in 2007, Medicaid covered 75 percent of the tax-financed amount of medical care provided to children. In contrast, for the elderly, Medicare financed 75 percent of the public spending for health care.

6.4b The elderly depend most heavily on publicly provided health care, which covers approximately two-thirds of their medical costs

■ Younger than 19   ■ 19–64   ■ 65 and older

Percentage of PHCE paid by public insurance or public programs
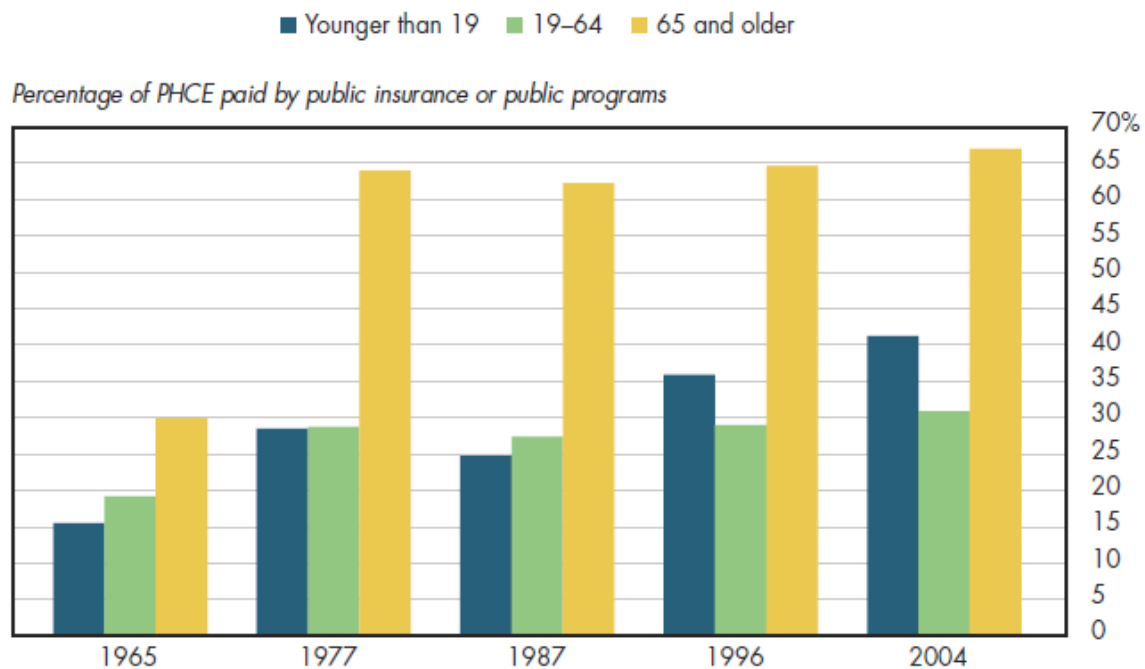
Note: Public insurance includes Medicare. Because a portion of Medicare spending is paid through voluntary premium payments, the entire amount should not be viewed as taxpayer-financed spending even though Medicare is categorized as "federal" spending in the standard National Health Expenditure Accounts framework.

Taking into account the hidden tax expenditures discussed previously, public programs finance more than half of health spending for both children and non-elderly adults—considerably narrowing the gap between these two groups and the elderly.

6.4.1 Downloads

Download Excel workbooks used to create Figure 6.4a Table[20] and Figure 6.4b Table[21] . [Note that you'd have separate links for each set of tables] Figures 6.4a and 6.4b were created from the following tables (the workbook includes all supporting tables used to create these tables):

- Fig. 6.4a: Table 6.4.1. Health Insurance Coverage, by Age, March 2009
- Fig. 6.4b: Table 6.4.2. Per Capita Personal Health Expenditures, by Age, Selected Years

Download PowerPoint versions of both figures.

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[20]https://hub.mili.csom.umn.edu/content/m10039/latest/6.4aTAB.xls
[21]https://hub.mili.csom.umn.edu/content/m10039/latest/6.4bTAB.xls

- Figure 6.4a Image Slide (as it appears above)[22]
- Figure 6.4a Editable Slide (can be formatted as desired)[23]
- Figure 6.4b Image Slide (as it appears above)[24]
- Figure 6.4b Editable Slide (can be formatted as desired)[25]

6.4.2 References

A. Department of Commerce. Bureau of the Census.

6.5 6.5 Young Adults Incur High Risk of Being Uninsured[26]

A more detailed view of the uninsured makes obvious that lack of coverage rises during teenage years and peaks in the early 20s. As indicated in figure 6.5, in subsequent years, the rate of being uninsured declines rather steadily until a sharp drop-off among those age 65 and older.

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[22]https://hub.mili.csom.umn.edu/content/m10039/latest/6.4aIMG.ppt
[23]https://hub.mili.csom.umn.edu/content/m10039/latest/6.4aDATA.ppt
[24]https://hub.mili.csom.umn.edu/content/m10039/latest/6.4bIMG.ppt
[25]https://hub.mili.csom.umn.edu/content/m10039/latest/6.4bDATA.ppt
[26]This content is available online at <https://hub.mili.csom.umn.edu/content/m10040/1.3/>.

6.5 The probability of being uninsured is much higher among young adults

Percent uninsured (March 2009)

Age
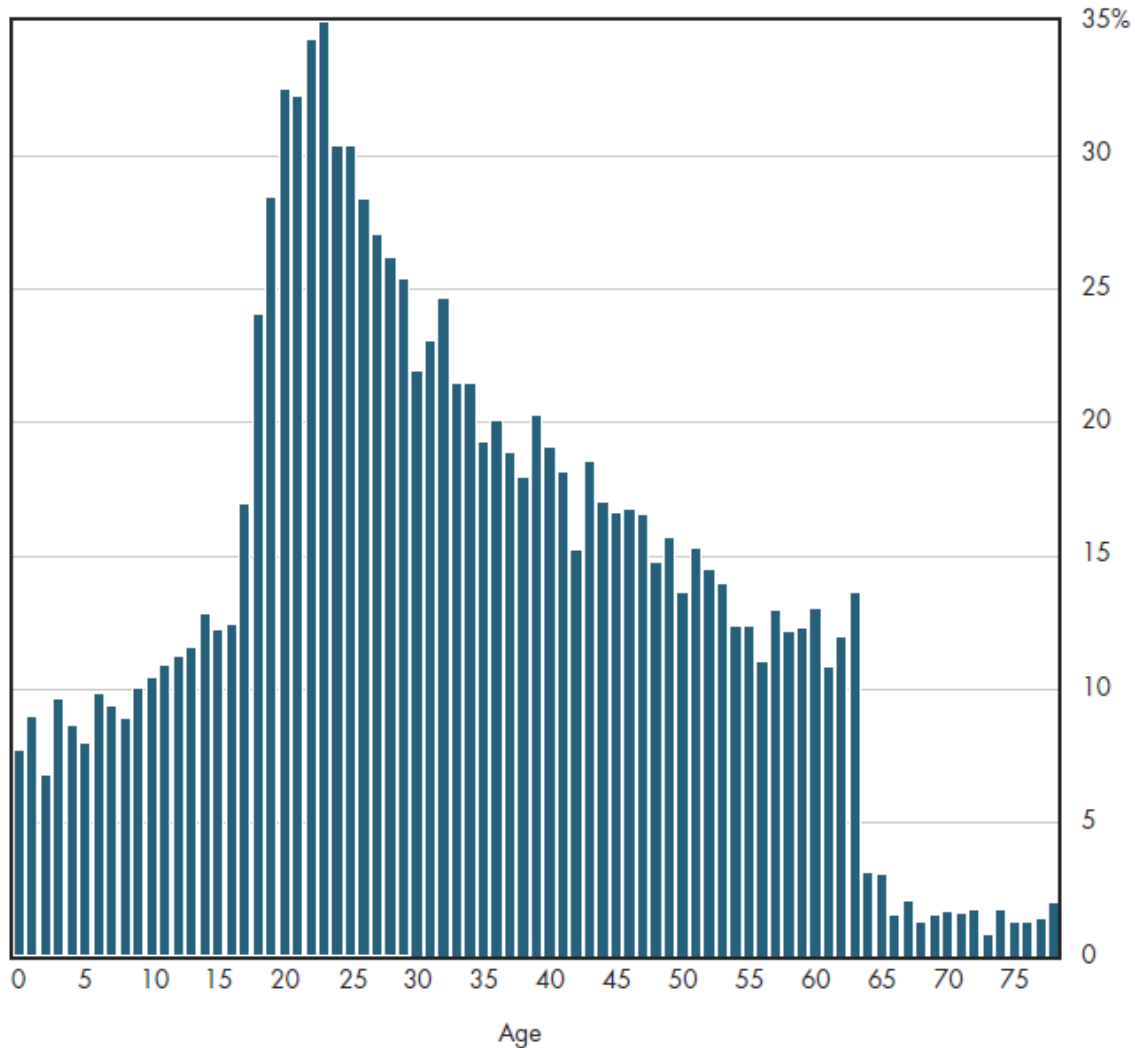
Over the past 25 years, a series of Medicaid expansions (starting in the mid-1980s) and SCHIP contributed to reducing the uninsured risk, especially among infants and children younger than age six. Young adults face a higher risk of being uninsured not only because many entry-level jobs do not offer coverage but also because they generally have lower incomes than established workers do, and their perceived need for coverage also is lower than that of older workers. Even though age-related premiums are legally permissible, employer coverage usually is community-rated, so the employee share of the premium is typically the same for all workers even though the youngest workers are less likely to use the plan. Thus, even when the employer pays 80 percent of the premium, such coverage is less of a deal for younger workers than for older workers. For all these reasons, young workers are less likely to be willing to pay the costs of offered coverage or to obtain non-group coverage when their employer elects not to offer a plan.

More generally, both the need for coverage and earnings typically increase with age, contributing to an increase in the demand for health coverage that levels off for those in their early 50s. Because a large number of retirees automatically qualify for Medicare coverage, the residual number without any coverage at all is quite small. Such uninsured elderly might not have a long enough earnings history to qualify for Medicare,

or they might have been in a category of worker not covered by Medicare (for example, government workers were not required to be covered until the 1980s).

If health reform is fully implemented, the absolute number of uninsured will decline, but this age profile is likely to persist. Because the new health law moves the system further in the direction of community rating, many young people are likely to find it is less expensive to pay the penalty for not having coverage than to purchase it.

6.5.1 Downloads

Download Excel tables used to create figure: Figure 6.5 Table[27] . Figure 6.5 was created from the following table (the workbook includes all supporting tables used to create this table):

- Table 6.5. Distribution of Persons Who are Uninsured, By Age, 2009 and 2012

  Download PowerPoint versions of figure.

- Figure 6.5 Image Slide (as it appears above)[28]
- Figure 6.5 Editable Slide (can be formatted as desired)[29]

6.5.2 References

A. Department of Commerce. Bureau of the Census.

6.6 6.6 American's Risk of Being Uninsured, 1940-2010[30]

Over 70 years, the uninsured rate has declined by more than 80 percent (figure 6.6). It is noteworthy to see how much of this decline occurred before the arrival of Medicare and Medicaid. In 1940, approximately nine of 10 Americans lacked health insurance coverage. By 1960, this had fallen to 25 percent. This dramatic decline reflected the enormous expansion of employer-based health coverage fueled by the tax subsidy that began in 1943.

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[27]https://hub.mili.csom.umn.edu/content/m10040/latest/6.5TAB.xls

[28]https://hub.mili.csom.umn.edu/content/m10040/latest/6.5IMG.ppt

[29]https://hub.mili.csom.umn.edu/content/m10040/latest/6.5DATA.ppt

[30]This content is available online at <https://hub.mili.csom.umn.edu/content/m10041/1.2/>.

6.6 The risk of being uninsured has decreased by more than 80 percent between 1940 and 2010

Percent uninsured   Number of uninsured (millions)
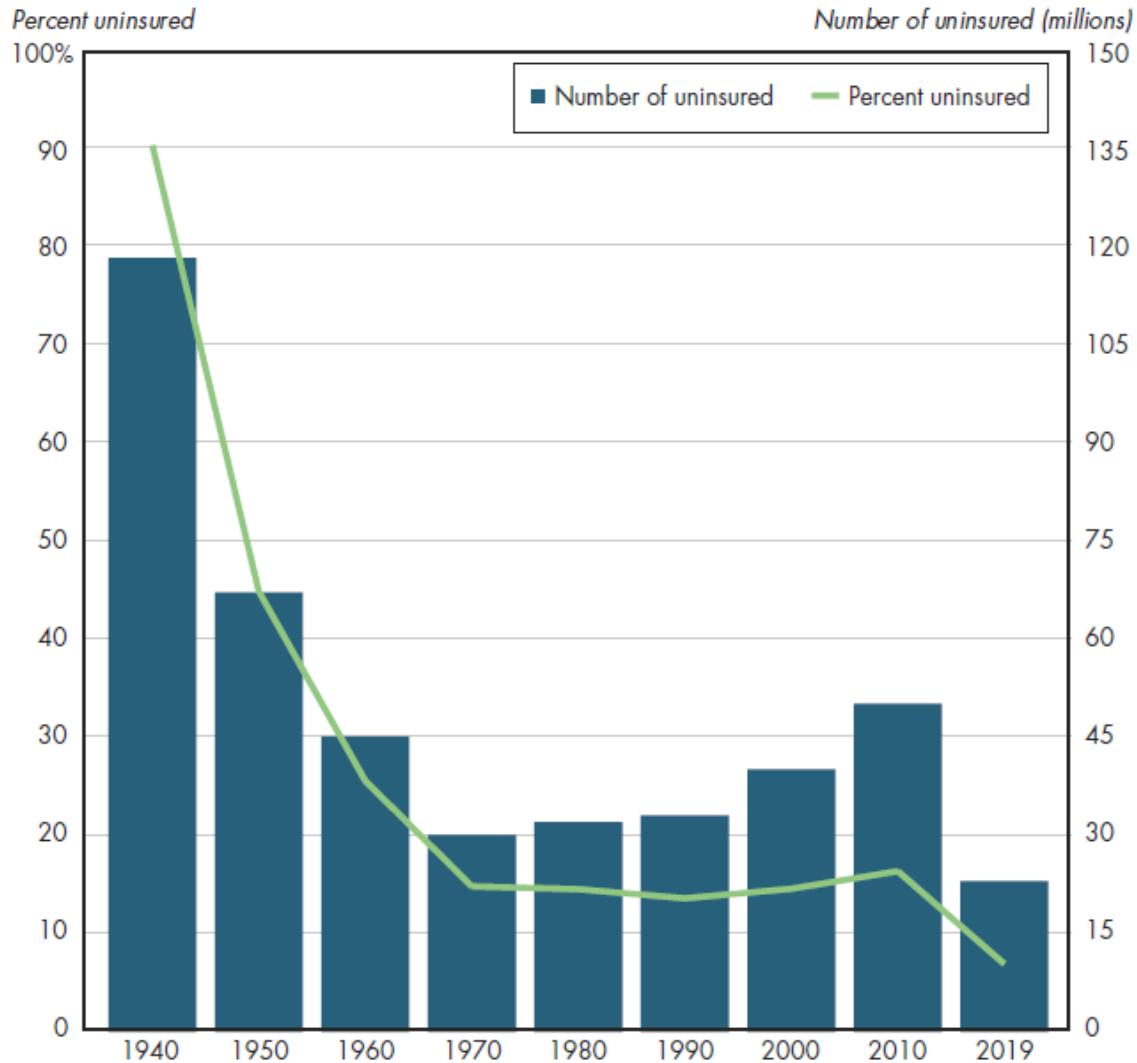
Note: Data simulate the gross number of uninsured as if measured by today's Current Population Survey. No adjustments have been made for the 10% to 20% over-counting of uninsured by the CPS.

These numbers are approximations for the earliest decades. The nation did not start to seriously measure the extent of lack of coverage until the mid-1970s. Before that time, only insurance industry surveys of members who might have duplicate coverage across various types of policies exist (for example, hospital insurance). Thus, using assumptions about the fraction of the population without any coverage and how much overlap there was between policies of various types and then subtracting this insured number from the total population provides a count of the uninsured. Today, the most widely quoted current numbers about the uninsured come from the Current Population Survey (CPS), which did not start collecting a consistent measure of coverage until 1988. Now there are multiple surveys, each with various shortcomings. The point is that the numbers for 1990 forward are a better approximation of the truth than the numbers that precede it.

By 1970, the uninsured rate had fallen to less than 15 percent, reflecting continued expansion of employer-

provided coverage and the introduction of Medicare and Medicaid. As will be shown, there is substantial evidence of "crowd-out" of private health coverage by both programs, so the entire decline cannot be attributed to public coverage. After 1970, the uninsured rate remained quite stable for decades. The slight increase between 1990 and 2010 is barely a blip from this much longer-term view.

Official government projections of what is supposed to happen to the uninsured rate if health reform is fully implemented are included. If this will happen remains to be seen, but the 2019 number is simply a reminder that the health reform plan did not intend, nor will it possibly achieve, universal coverage. Some 20 million uninsured Americans would still be uninsured that year, according to official forecasts.

6.6.1 Downloads

Download Excel tables used to create figure: Figure 6.6 Table[31] . Figure 6.6 was created from the following table (the workbook includes all supporting tables used to create this table):

- Table 6.6. Number of Uninsured and Percentage of Population Without Health Insurance Coverage, by Decade, 1940-2021

Download PowerPoint versions of figure.

- Figure 6.6 Image Slide (as it appears above)[32]
- Figure 6.6 Editable Slide (can be formatted as desired)[33]

6.6.2 References

A. Author's calculations.
B. Department of Commerce. Bureau of the Census.
C. Health Insurance Association of America. Source Book of Health Insurance Data 1986/1987. Table 1.1. Washington DC. HIAA 1987.

6.7 6.7 Majority of Health Costs for Uninsured People Are Subsidized[34]

Per capita health costs for non-elderly individuals who are uninsured for the entire year are less than half the medical spending for their counterparts who have private insurance coverage (figure 6.7a). Slightly more than half of those who are uninsured at least some portion of the year are without coverage the entire year. In any given year, the part-year uninsured lack coverage for approximately six months. Therefore, individuals uninsured the entire year constitute approximately 70 percent of the number of uninsured on any given day.

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[31] https://hub.mili.csom.umn.edu/content/m10041/latest/6.6TAB.xls
[32] https://hub.mili.csom.umn.edu/content/m10041/latest/6.6IMG.ppt
[33] https://hub.mili.csom.umn.edu/content/m10041/latest/6.6DATA.ppt
[34] This content is available online at <https://hub.mili.csom.umn.edu/content/m10042/1.2/>.

6.7a Annual health spending for a non-elderly person uninsured all year is less than half the amount for those privately insured all year

Annual health spending per capita index: 100=full year privately insured (2008)

Type of insurance coverage (non-elderly Americans)
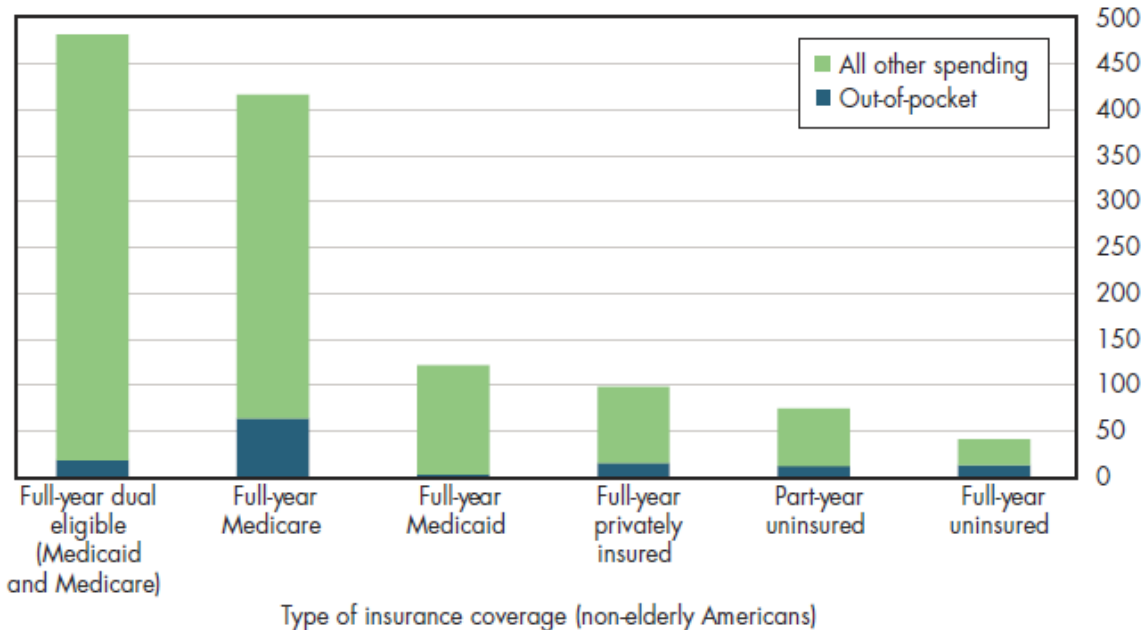
Note: Estimated spending for full year privately insured individuals younger than age 65 was $3,914 in 2008.

Although they are uninsured half the year, seven-eighths of spending for the part-year uninsured occurs during the portion of the year they are insured. This reflects the higher propensity of insured people to get care, but it also reflects strategic behavior by those drifting in and out of coverage. By deferring care when uninsured and using care as much as feasible if they know they are likely to lose coverage, they minimize the out-of-pocket burden associated with being without coverage.

Per capita spending on those privately insured all year is lower than for those on Medicaid the entire year. This disparity would be even larger if Medicaid payments to hospitals and doctors matched the levels paid by private health plans. Much of the difference reflects Medicaid coverage of expensive services not covered by standard private health plans (for example, long-term care costs such as extended nursing- home stays or home health for those whose condition is not likely to improve). The average non-elderly person covered by Medicare (that is, work-disabled) or Medicaid is in worse health than those who have private coverage.

Access to care appears to be somewhat better for uninsured children relative to uninsured adults. Spending for full-year uninsured children is approximately 60 percent of the level of statistically equivalent individuals having coverage the entire year; for their counterparts who are adults, spending is less than half that for equivalent adults having full-year coverage (figure 6.7b). Publicly subsidized care might be more accessible to children (for example, free clinics); likewise, the propensity for care-seeking among uninsured adults—some who have chosen to be uninsured— might be lower.

6.7b Relative to their adult counterparts, uninsured children have annual spending that is closer to the levels of those covered all year

Annual health spending per capita index: 100=full year insured (2008)

Type of insurance coverage (non-elderly Americans)
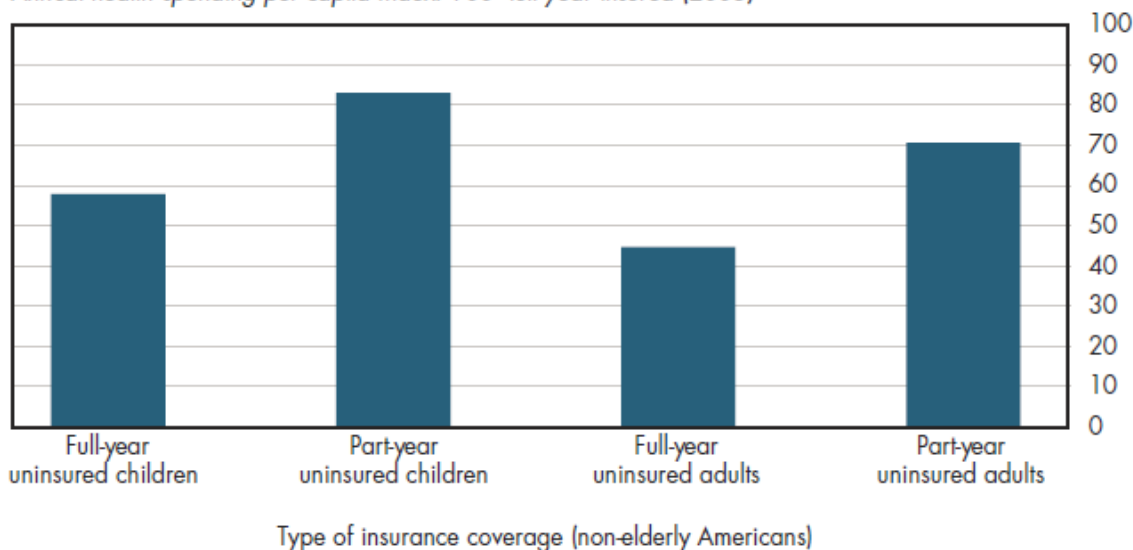
Note: All data compare estimated spending for the uninsured in each category to simulated spending if the individuals in each category were fully insured, taking into account differences in health status, demographic, and socioeconomic characteristics.

6.7.1 Downloads

Download Excel workbooks used to create Figure 6.7a Table[35] and Figure 6.7b Table[36] . [Note that you'd have separate links for each set of tables] Figures 6.7a and 6.7b were created from the following tables (the workbook includes all supporting tables used to create these tables):

- Fig. 6.7a: Table 6.7.1. Indexed Per Capita Spending for Insured and Uninsured Patients, by Source of Payment, 2008
- Fig. 6.7b: Table 6.7.2. Health Spending Per Capita for Uninsured to Simulated Spending if They Were Fully Insured

Download PowerPoint versions of both figures.

- Figure 6.7a Image Slide (as it appears above)[37]
- Figure 6.7a Editable Slide (can be formatted as desired)[38]
- Figure 6.7b Image Slide (as it appears above)[39]
- Figure 6.7b Editable Slide (can be formatted as desired)[40]

6.7.2 References

A. Author's calculations.

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[35]https://hub.mili.csom.umn.edu/content/m10042/latest/6.7aTAB.xls
[36]https://hub.mili.csom.umn.edu/content/m10042/latest/6.7bTAB.xls
[37]https://hub.mili.csom.umn.edu/content/m10042/latest/6.7aIMG.ppt
[38]https://hub.mili.csom.umn.edu/content/m10042/latest/6.7aDATA.ppt
[39]https://hub.mili.csom.umn.edu/content/m10042/latest/6.7bIMG.ppt
[40]https://hub.mili.csom.umn.edu/content/m10042/latest/6.7bDATA.ppt

B. Hadley J, J Holahan, T Coughlin and D Miller. Covering the Uninsured in 2008: A Detailed Examination of Current Costs and Sources of Payment, and Incremental Costs of Expanding Coverage. Prepared for the Kaiser Commission on Medicaid and the Uninsured. Kaiser Commission on Medicaid and the Uninsured. Washington DC. August 2008.

6.8 6.8 Elderly-Headed Households Spent Big and Increasing Share on Health[41]

Despite the near-universal coverage of the elderly through Medicare, households headed by those 65 and older devote a considerably higher fraction of household spending for health care compared with households headed by younger adults. Moreover, over the past 25 years, the health care share has grown faster in elderly households compared with non-elderly households (figure 6.8a).

6.8a The share of consumption spending devoted to health has grown faster in elderly households than in non-elderly households

Percentage of annual PCE by age of householder
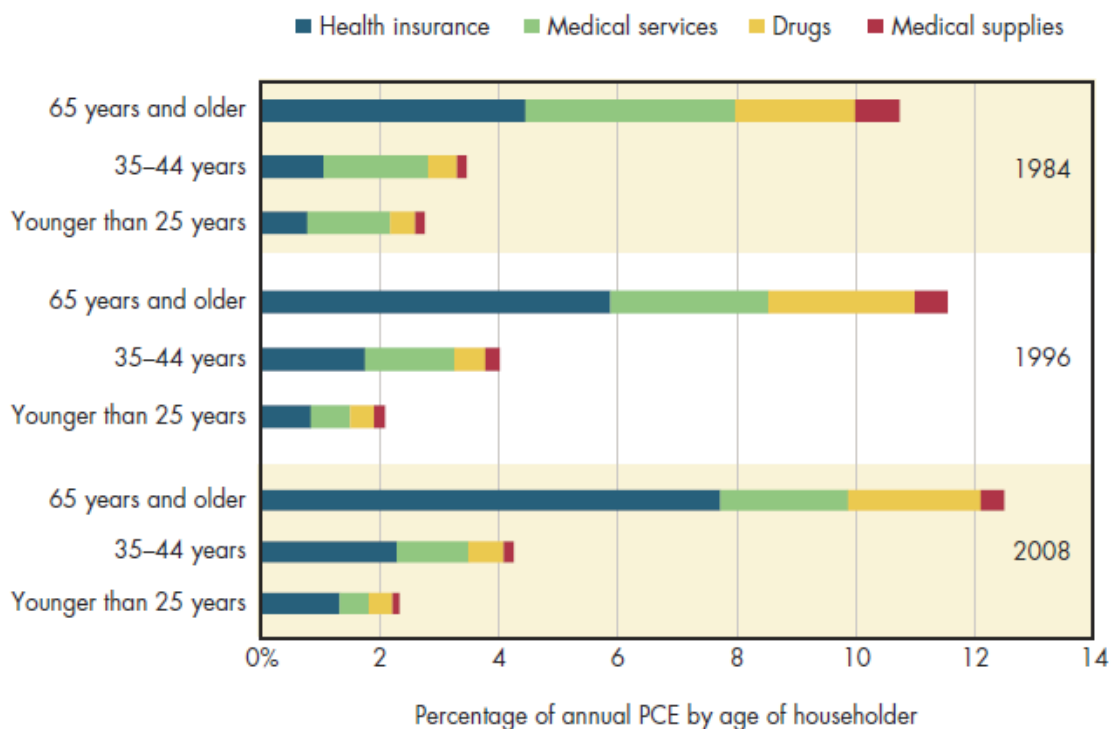
The relative difference in shares would be much smaller if the hidden costs of health coverage were taken into account. The amounts shown for health insurance include only the employee share of premiums. Because the average employer contributes approximately 80 percent of premiums for coverage provided through work, the amounts shown for health insurance premiums would have to be almost quadrupled were this cost made visible.

The large increase in the health insurance premium share of family spending for elderly households between 1996 and 2008 reflects the introduction of Medicare Part D drug coverage. Except for low-income households eligible for subsidies, Part D requires the payment of a premium covering approximately 25 percent of the costs covered by the benefit. It is interesting to note that little of this increase in premiums

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[41]This content is available online at <https://hub.mili.csom.umn.edu/content/m10043/1.1/>.

was offset by a corresponding decline in the share of household spending for out-of-pocket pharmaceutical payments.

Real health spending also has increased far more rapidly for elderly households than for non-elderly households, increasing by more than \$1,000 in the past 25 years (figure 6.8b). Remember that this includes only direct spending by households and excludes the significant share of spending financed by taxes.

6.8b Real household spending on health has increased much more rapidly in elderly households than in non-elderly households

Real per capita health expenditures (2005 dollars using GDP price deflator)
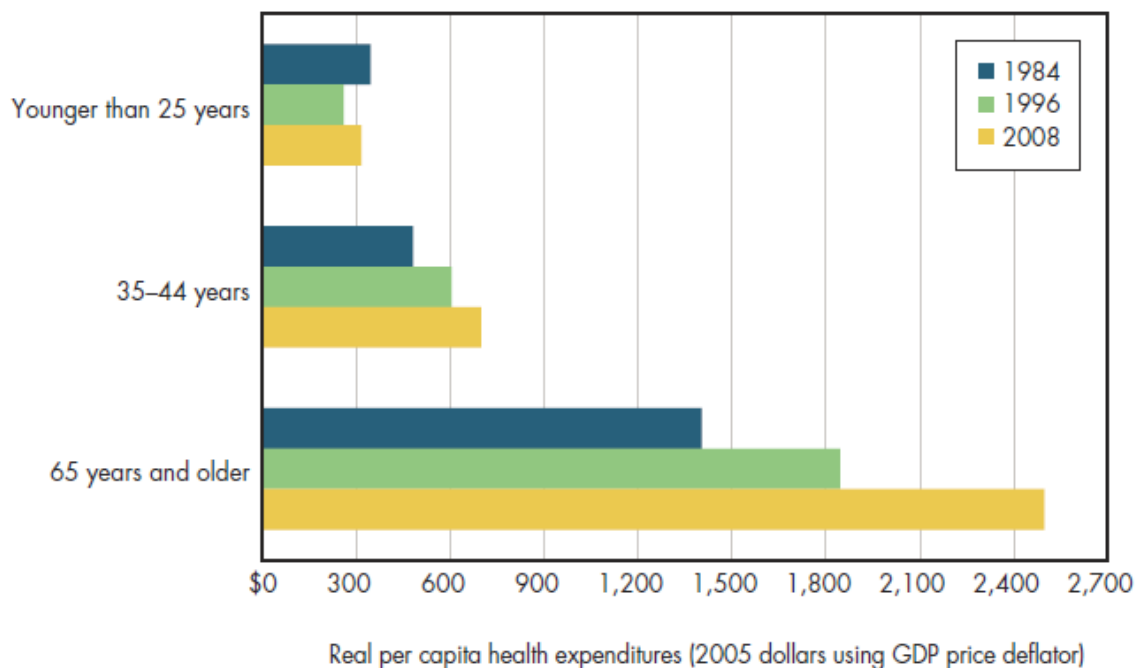
Among non-elderly households, the health spending share has grown slowly but steadily over 25 years in households headed by 35-44 year olds, whereas the health spending share of household consumption spending for households headed by those younger than age 25 is currently somewhat less than it was 25 years earlier.

6.8.1 Downloads

Download Excel tables used to create both figures: Figures 6.8a/6.8b Tables[42] . Figures 6.8a and 6.8b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 6.8. Health Care Spending as a Share of Average Annual Personal Consumption Expenditures, By Householder Age, 1984, 1996, and 2008

Download PowerPoint versions of both figures.

- Figure 6.8a Image Slide (as it appears above)[43]
- Figure 6.8a Editable Slide (can be formatted as desired)[44]
- Figure 6.8b Image Slide (as it appears above)[45]
- Figure 6.8b Editable Slide (can be formatted as desired)[46]

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[42]https://hub.mili.csom.umn.edu/content/m10043/latest/6.8TAB.xls
[43]https://hub.mili.csom.umn.edu/content/m10043/latest/6.8aIMG.ppt
[44]https://hub.mili.csom.umn.edu/content/m10043/latest/6.8aDATA.ppt
[45]https://hub.mili.csom.umn.edu/content/m10043/latest/6.8bIMG.ppt
[46]https://hub.mili.csom.umn.edu/content/m10043/latest/6.8bDATA.ppt

6.8.2 References

  A. Author's calculations.
  B. Department of Labor. Bureau of Labor Statistics.

6.9 6.9 Non-Health Spending Per Person in Elderly Households Is Higher[47]

Although households headed by those 65 and older spend a higher fraction of their income on health care, the per capita resources left over to spend on everything else are higher than in households headed by the non-elderly (figure 6.9a). This might seem counterintuitive, but it has occurred because growth in real total spending in elderly households has outpaced that of younger households over the past 25 years. Note that these numbers are based on household surveys of consumer expenditures that reflect actual spending on health care (out-of-pocket costs and premium spending by each family).

6.9a Real per capita non-health spending currently is higher in households headed by elderly people; this was not true in 1984

Real per capita non-health spending (thousands of 2005 dollars using GDP price deflator)
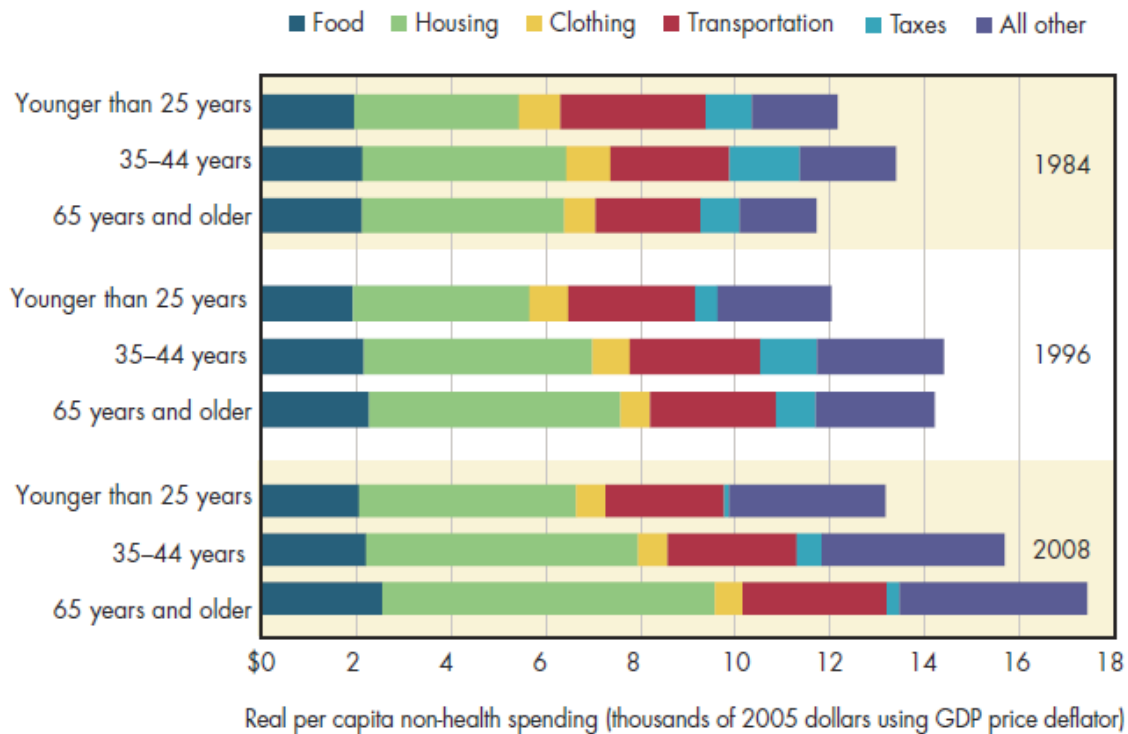
In terms of constant purchasing power, elderly households 25 years ago lagged behind households headed by younger adults in terms of the amount available per capita for all other consumption except health. By 1996, per capita non-health consumption for the elderly outpaced that of the youngest households by more than $2,000—a gap that grew to $4,000 by 2008. This demonstrates the importance of comparing health spending burdens across households both in relative terms (per - cent of income or expenditures) and as absolute dollar amounts (both health and non-health spending).

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[47]This content is available online at <https://hub.mili.csom.umn.edu/content/m10044/1.2/>.

To summarize, this increase in consumption by the elderly resulted in higher health spending (shown previously) and higher spending in almost all categories of non-health spending.

Unfortunately, comparative data on elderly health spending relative to non- elderly spending is sparse. In the United States, this ratio is approximately the same as that in other European countries, but markedly lower than in Canada (figure 6.9b). Taken at face value, it appears that this ratio is declining in the United States while increasing in Canada. Such sparse data do not allow strong conclusions about any trends. The recently enacted health reform law likely would reduce this ratio further because, on balance, it increases spending mostly for non-elderly uninsured while reducing expenditures for Medicare. Thus, why the ratios would be so divergent in countries having near-universal coverage is somewhat puzzling.

6.9b The ratio of annual health spending for the elderly relative to the non-elderly is similar in the United States and in other countries

Ratio of annual health spending for the elderly relative to non-elderly
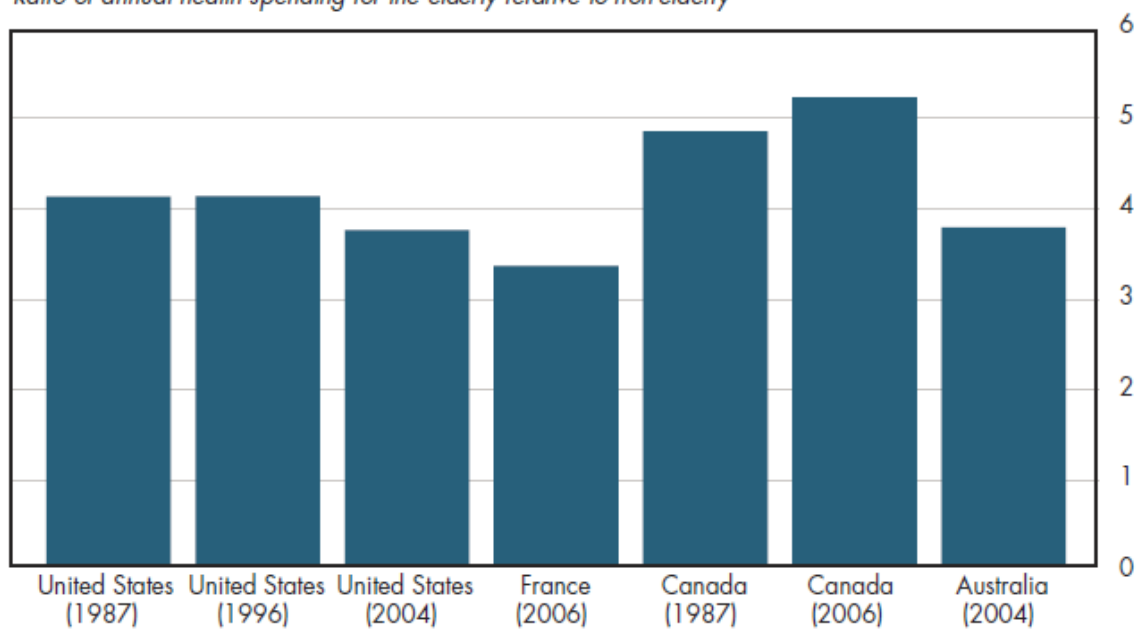
6.9.1 Downloads

Download Excel workbooks used to create Figure 6.9a Table[48] and Figure 6.9b Table[49] . [Note that you'd have separate links for each set of tables] Figures 6.9a and 6.9b were created from the following tables (the workbook includes all supporting tables used to create these tables):

- Fig. 6.9a: Table 6.9.1. Health Care Spending as a Share of Average Annual Personal Consumption Expenditures, By Householder Age, 1984, 1996, and 2008
- Fig. 6.9b: Table 6.9.2. Ratio of Health Spending Per Capita for Elderly Relative to Non-Elderly: 1987, 1996, 2005, 2004, 2006

Download PowerPoint versions of both figures.

- Figure 6.9a Image Slide (as it appears above)[50]
- Figure 6.9a Editable Slide (can be formatted as desired)[51]

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[48] https://hub.mili.csom.umn.edu/content/m10044/latest/6.9aTAB.xls
[49] https://hub.mili.csom.umn.edu/content/m10044/latest/6.9bTAB.xls
[50] https://hub.mili.csom.umn.edu/content/m10044/latest/6.9aIMG.ppt
[51] https://hub.mili.csom.umn.edu/content/m10044/latest/6.9aDATA.ppt

- Figure 6.9b Image Slide (as it appears above)[52]
- Figure 6.9b Editable Slide (can be formatted as desired)[53]

6.9.2 References

A. Author's calculations.
B. Department of Labor. Bureau of Labor Statistics.
C. Organisation for Economic Co-operation and Development.

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[52]https://hub.mili.csom.umn.edu/content/m10044/latest/6.9bIMG.ppt
[53]https://hub.mili.csom.umn.edu/content/m10044/latest/6.9bDATA.ppt

Chapter 7

Chapter 7: Who Produces Health Services?

7.1 7.1 Non-Profit Organizations or Public Owned Enterprises Provided Larger Share of Health Output[1]

Almost half of all revenues in the health system are generated by tax-exempt organizations, including both those that are publicly owned or are organized as non-profit firms. The share of revenues flowing through such enterprises is far larger in the hospital sector than in any other area of health care delivery. The relative importance of government-owned firms varies by subsector.

On average, 40 percent of nursing home care is provided through tax-exempt firms, but this is a blend of nursing homes — where for-profit firms account for 75 percent of revenues — and various types of residential care facilities for the elderly, along with those requiring care for mental health, mental retardation, or substance abuse. The tax-exempt share among such facilities is approximately 65 percent. Among home health agencies, the tax-exempt share is less than 30 percent (figure 7.1).

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10045/1.2/>.

7.1 Public and non-profit owners dominate the hospital sector and provide a large fraction of nursing home and home health care
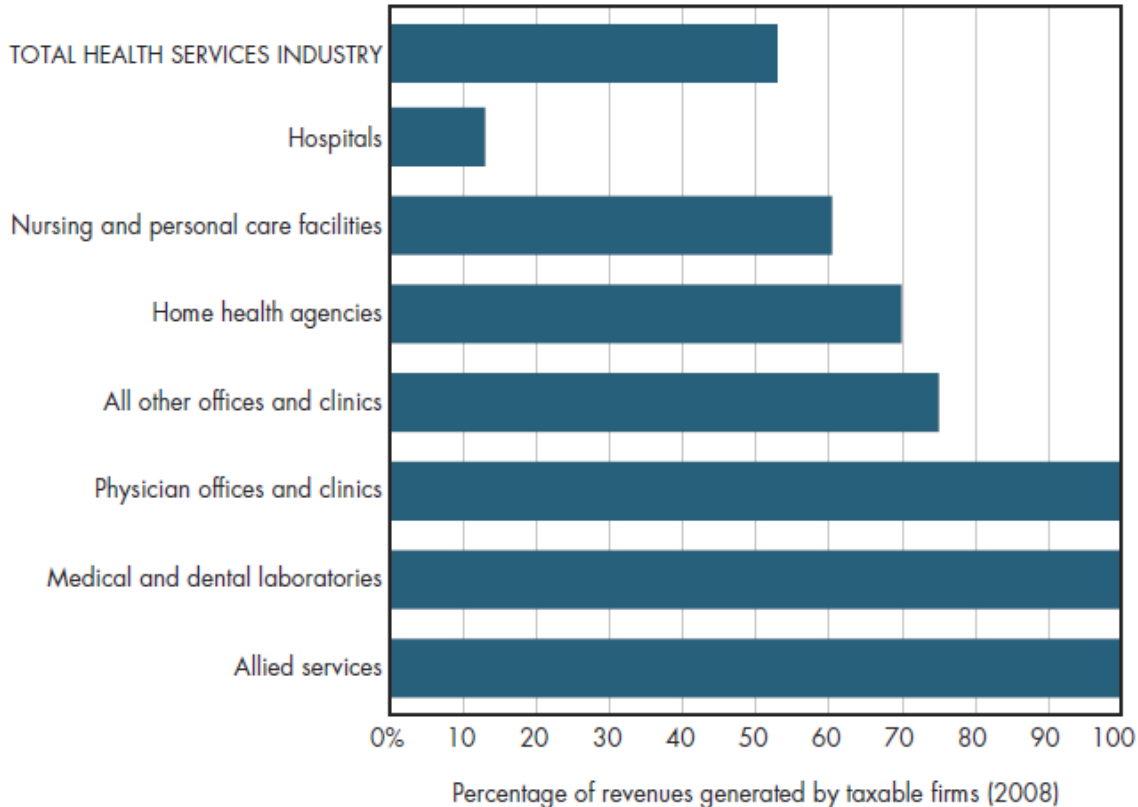
Percentage of revenues generated by taxable firms (2008)

Note: "Health services" includes ambulatory health care services and hospitals, nursing, and residential care facilities. It does not include pharmaceuticals, medical devices, non-durable medical products, or the health insurance industry.

It has been postulated that non-profit or public enterprises might be attractive in sectors such as health care in which consumer trust is an important factor. Many studies compare the performance of non-profit firms relative to for-profit firms in terms of various measures of efficiency, profitability, access to care, and similar metrics. Although the evidence is mixed, with neither form having a clear advantage, the performance has been sufficiently similar that it has prompted IRS scrutiny of whether tax exemption is warranted for hospitals. Current federal tax rules require hospitals to demonstrate that the dollar value of the community benefits they provide equal or exceed the amount of tax savings resulting from exemption. A far smaller literature compares the relative performance of government-owned firms with either for-profit or non-profit health care organizations.

7.1.1 Downloads

Download Excel tables used to create figure: Figure 7.1 Table[2] . Figure 7.1 was created from the following table (the workbook includes all supporting tables used to create this table):

- Table 7.1. Share of Total Health Services Industries Revenues Generated by Tax-Exempt Firms, by Industry, 2008

Download PowerPoint versions of figure.

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[2]https://hub.mili.csom.umn.edu/content/m10045/latest/7.1TAB.xls

- Figure 7.1 Image Slide (as it appears above)[3]
- Figure 7.1 Editable Slide (can be formatted as desired)[4]

7.1.2 References

A. Department of Commerce. Bureau of the Census.

7.2 7.2 Government-Owned Firms Account for Low Share of Activity[5]

Government's role in the production of health services is far smaller than its role in health care financing. In most subsectors, government-owned firms account for approximately 10 percent of overall activity, the chief exception being the health insurance industry. These observations require several important caveats.

First, there is no standardized way to measure the relative importance of government-owned firms in health care. The previously cited numbers on revenues by ownership permit only a clear division between firms subject to federal taxes and those that are not. To understand the relative importance of government-owned firms compared with non-profit firms requires data on activity that differ by industry. As shown in figure 7.2, the available measures of "activity" range from firms, to beds, to enrollment, none of which is entirely satisfactory.

Second, ownership is not equivalent to management. Many county- or city-owned hospitals, for example, have their day-to-day operations managed by either for-profit or non-profit firms. More than 20 percent of all hospitals, including federal, state, and local (city or county) facilities, are publicly owned. However, this includes military and specialty hospitals (for example, psychiatric, tuberculosis). Among so-called community hospitals, only approximately one in six beds is publicly owned—almost identical to the share owned by for-profit facilities (figure 7.2).

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[3]https://hub.mili.csom.umn.edu/content/m10045/latest/7.1IMG.ppt

[4]https://hub.mili.csom.umn.edu/content/m10045/latest/7.1DATA.ppt

[5]This content is available online at <https://hub.mili.csom.umn.edu/content/m10046/1.2/>.

7.2 Most tax-exempt firms are voluntary non-profit agencies; government accounts for only approximately 10 percent in most subsectors
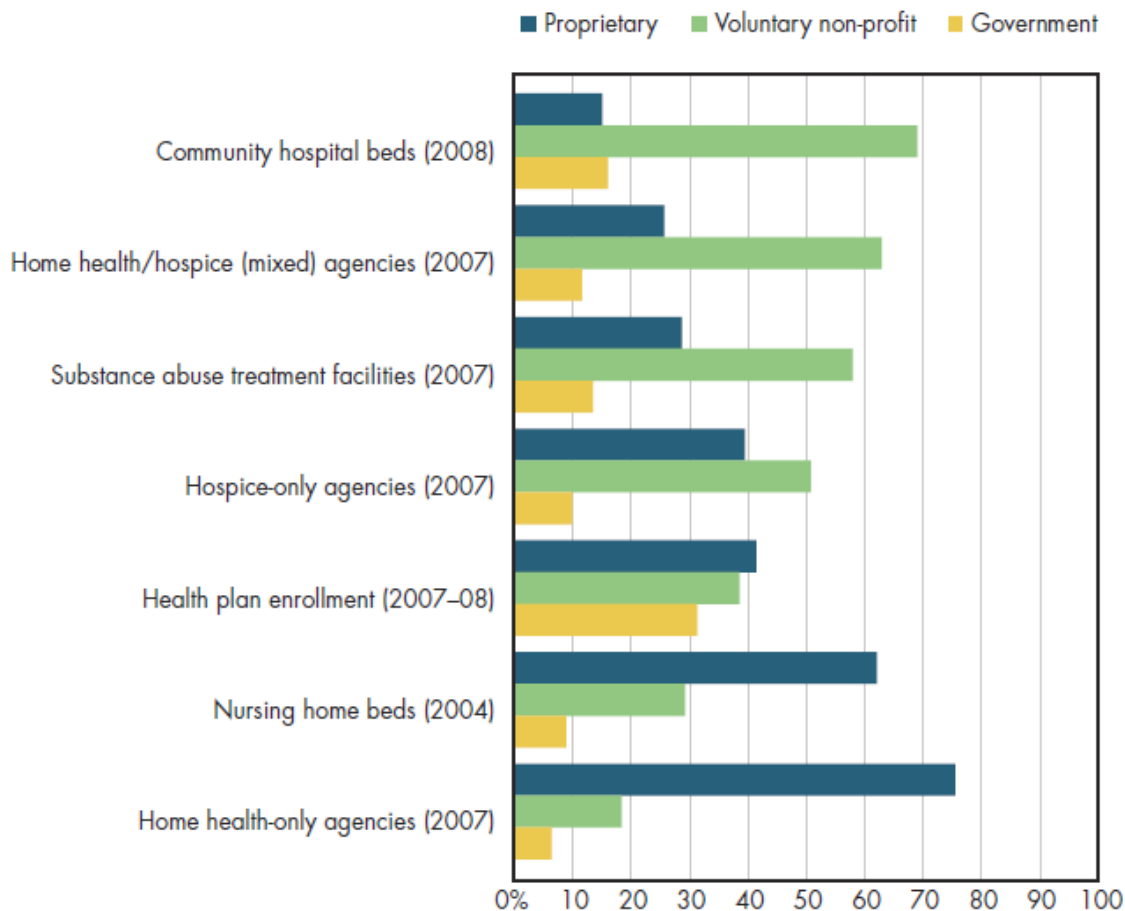
Note: Medicare, Medicaid, and SCHIP are categorized as government health plans. Percentages for health plan enrollment add to more than 100 percent because of duplicate coverage.

In the health insurance industry, the public sector role is defined in terms of enrollment in public health plans such as Medicare and Medicaid. However, government does not "own" any Medicare plans. All claims processing for those using fee- for-service Medicare is handled by private-sector intermediaries such as Aetna or Blue Cross and Blue Shield. Either many states permit those eligible for Medicaid or SCHIP to enroll in private health plans such as HMOs or they contract out their claims- processing to private insurance companies or third-party administrators. Based on membership, approximately half of the insurance business is handled by non-profit firms such as Blue Cross and Blue Shield plans, Kaiser Permanente, and HIP Health Plan of New York. Non-profit Blue Cross and Blue Shield plans alone cover more than 30 percent of the private health insurance market.

7.2.1 Downloads

Download Excel tables used to create figure: Figure 7.2 Table[6] . Figure 7.2 was created from the following table (the workbook includes all supporting tables used to create this table):

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[6]https://hub.mili.csom.umn.edu/content/m10046/latest/7.2TAB.xls

- Table 7.2. Distribution of Total Health Services Industries Expenditures, by Industry and Ownership Type, 2007

Download PowerPoint versions of figure.

- Figure 7.2 Image Slide (as it appears above)[7]
- Figure 7.2 Editable Slide (can be formatted as desired)[8]

7.2.2 References

A. Department of Commerce. Bureau of the Census.

7.3 7.3 Health Industry Has Produced Large and Growing Amount of Output[9]

Since 1948, more than 40 percent of the growth in the services share of the economy can be attributed to the rapid growth in health services (figure 7.3a). America has become a service economy, with an expanding health sector an important driver of that trend. Some components of personal health care are counted as goods (pharmaceuticals, non-durable medical products, and durable medical equipment) and other components of national health spending fall under construction. The rest is labeled health services in figure 7.3a.

7.3a Since 1948, rapid growth in the health sector has been a major factor in the increasing share of total national output purchased for services

Percentage of GDP

- Goods
- Construction
- Health services
- All other services

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[7]https://hub.mili.csom.umn.edu/content/m10046/latest/7.2IMG.ppt

[8]https://hub.mili.csom.umn.edu/content/m10046/latest/7.2DATA.ppt

[9]This content is available online at <https://hub.mili.csom.umn.edu/content/m10047/1.1/>.

Final demands take into account personal consumption by households, government purchases, and private and public investments. From 1948 to 2009, all services excluding health grew from just over 30 percent of the economy to more than 50 percent. Thus, the shift to services would have happened — albeit less rapidly — even had health services remained at its 1948 level of 3 percent of GDP. Services now constitute almost 65 percent of final purchases, but an ever-increasing share of that is accounted for by health care. Currently, that share is more than 20 percent of all services, compared with only 6 percent in 1929.

Another way to decompose total output (GDP) is in terms of the industries that produce it. The consumer who purchases health care — a final demand — might rely on the output of many other industries such as transportation, real estate, finance, and manufacturing. Value added is simply an industry's gross output minus all the resources produced by other industries that were used to create it. In this view, the share of output attributable to goods equals the value added from the industries that supply the goods. These include agriculture, forestry and fisheries, mining, construction, and manufacturing. In this alternative way of breaking down output, all other industries are classified as services.

Unfortunately, detailed value-added data are available only for private output, so the scenario is incomplete. Services overall account for almost 80 percent of private business output (figure 7.3b). The health services contribution is much more modest and growing much less rapidly from this producer view (i.e., "supply-side" view) than the demand-side perspective described previously.

7.3b As a producing industry, the value added by health services has grown more rapidly than for goods or non-health services

Value added as percentage of private industry output (based on current dollars)
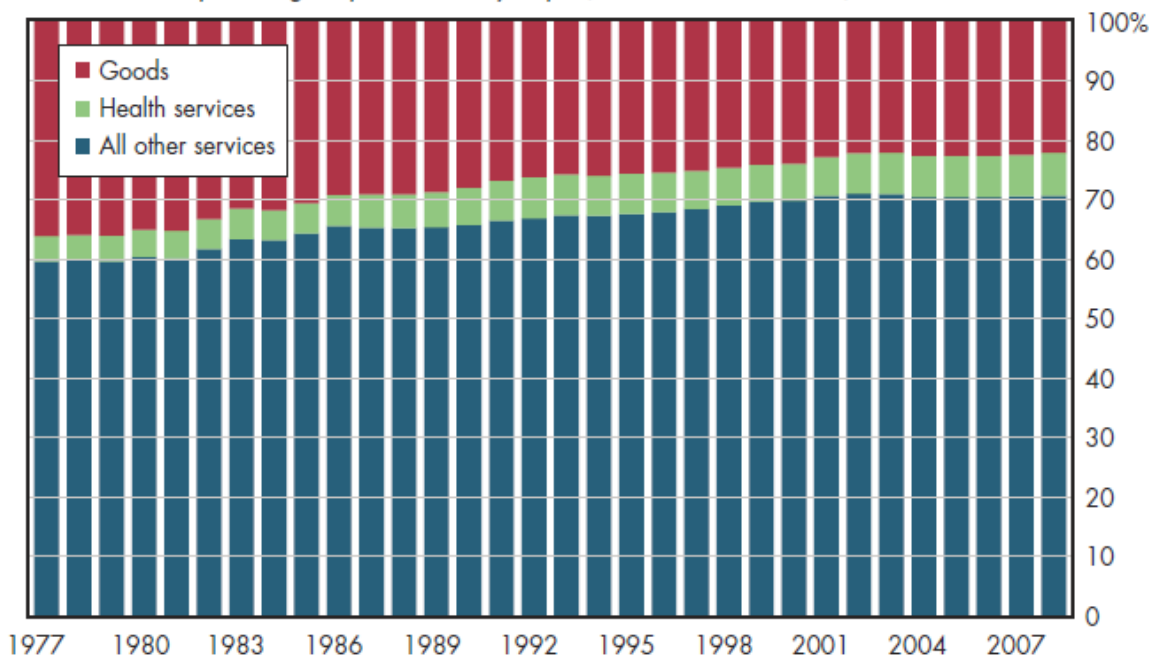
7.3.1 Downloads

Download Excel workbooks used to create Figure 7.3a Table[10] and Figure 7.3b Table[11] . [Note that you'd have separate links for each set of tables] Figures 7.3a and 7.3b were created from the following tables (the workbook includes all supporting tables used to create these tables):

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[10]https://hub.mili.csom.umn.edu/content/m10047/latest/7.3aTAB.xls
[11]https://hub.mili.csom.umn.edu/content/m10047/latest/7.3bTAB.xls

- Fig. 7.3a: Table 7.3.1. Gross Domestic Product by Major Type of Product, 1929-2009
- Fig. 7.3b: Table 7.3.2. Private Industries Value-Added for Selected Goods and Services, 1977-2012

Download PowerPoint versions of both figures.

- Figure 7.3a Image Slide (as it appears above)[12]
- Figure 7.3a Editable Slide (can be formatted as desired)[13]
- Figure 7.3b Image Slide (as it appears above)[14]
- Figure 7.3b Editable Slide (can be formatted as desired)[15]

7.3.2 References

A. Department of Commerce. Bureau of Economic Analysis.

7.4 7.4 Health Services Output, 1929-2009[16]

Overall output for health services has increased 19-fold since 1929. In contrast, GDP rose only 13-fold. The numbers shown in figure 7.4 remove the effects of inflation and are intended to measure the net increase in quantity of goods and services produced relative to the base year. As with the numbers for workers' compensation, these estimates exclude some important components of health sector output, including pharmaceuticals, medical devices, non-durable medical products, and output for government-run enterprises such as publicly owned hospitals.

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[12]https://hub.mili.csom.umn.edu/content/m10047/latest/7.3aIMG.ppt
[13]https://hub.mili.csom.umn.edu/content/m10047/latest/7.3aDATA.ppt
[14]https://hub.mili.csom.umn.edu/content/m10047/latest/7.3bIMG.ppt
[15]https://hub.mili.csom.umn.edu/content/m10047/latest/7.3bDATA.ppt
[16]This content is available online at <https://hub.mili.csom.umn.edu/content/m10048/1.2/>.

7.4 Output in the health sector has increased much more rapidly than in goods-producing industries, the service sector or the GDP

Chained quantity index (1929=100)
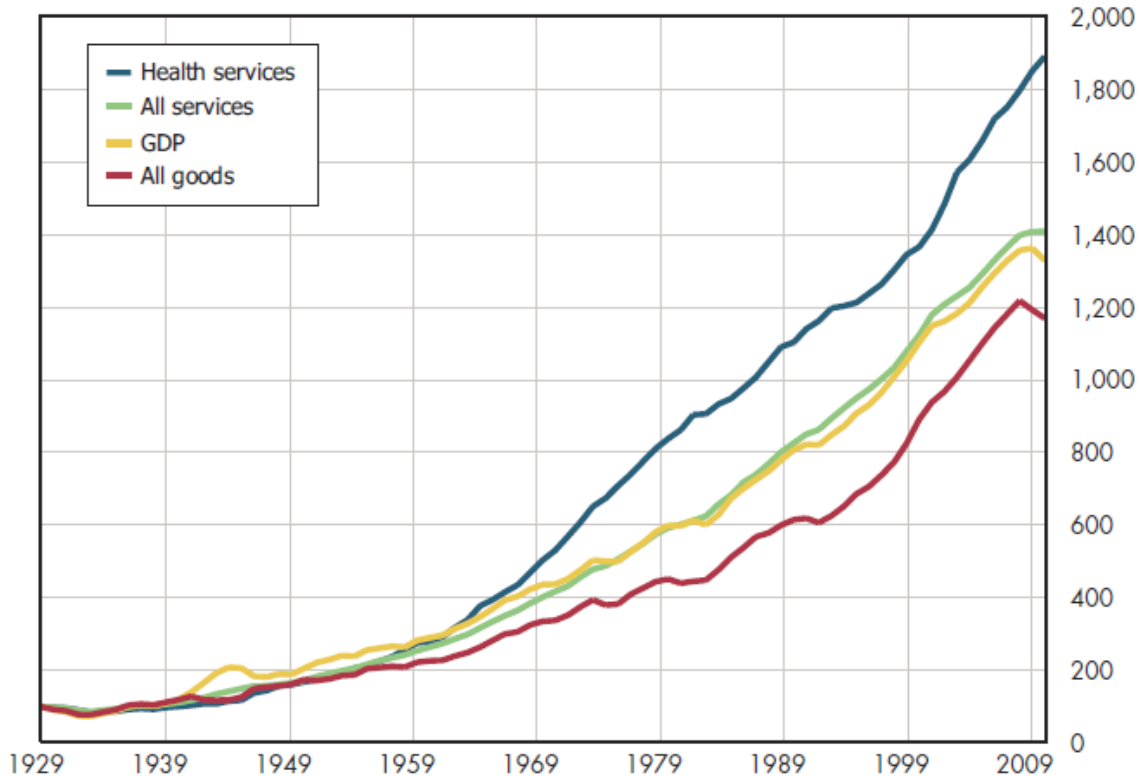
Until the early 1960s, the rate of increase in health sector output did not diverge substantially from growth in economy-wide output (that is, GDP). The introduction of Medicare and Medicaid substantially expanded the number of individuals who have health insurance coverage, producing a surge in added demand for health services. With the exception of a brief period in the mid- to late-1990s, health services output almost invariably has grown faster than real GDP. In contrast, the real quantity of all services (inclusive of health services) rose almost in lockstep with GDP, while output in goods-producing industries lagged behind GDP growth. This might seem inconsistent with the previous data that America has increasingly become a service economy. The numbers shown in figure 7.4 isolate the quantity of output from the cost of providing it. It is possible to infer from the difference that prices in the service sector (including health) have increased much more rapidly than in the economy overall.

It is noteworthy that although GDP and output in goods-producing industries declined during the most recent recession (and real output in the service sector remained flat), health care output continued to rise. While past recessions have tended to slow the rate of growth in real health output, they rarely have resulted in an actual downturn. This is discussed further in chapter 16.

Even under the most ambitious versions of health reform, long-term trends in health spending are likely to absorb a growing share of GDP (chapter 20). Thus, the divergence in growth rates between health care and the rest of the economy is extremely likely to grow larger, certainly within the next decade or two.

7.4.1 Downloads

Download Excel tables used to create figure: Figure 7.4 Table[17] . Figure 7.4 was created from the following table (the workbook includes all supporting tables used to create this table):

- Table 7.4. Changes in Production of Health Care, Goods, Services, and GDP

 Download PowerPoint versions of figure.

- Figure 7.4 Image Slide (as it appears above)[18]
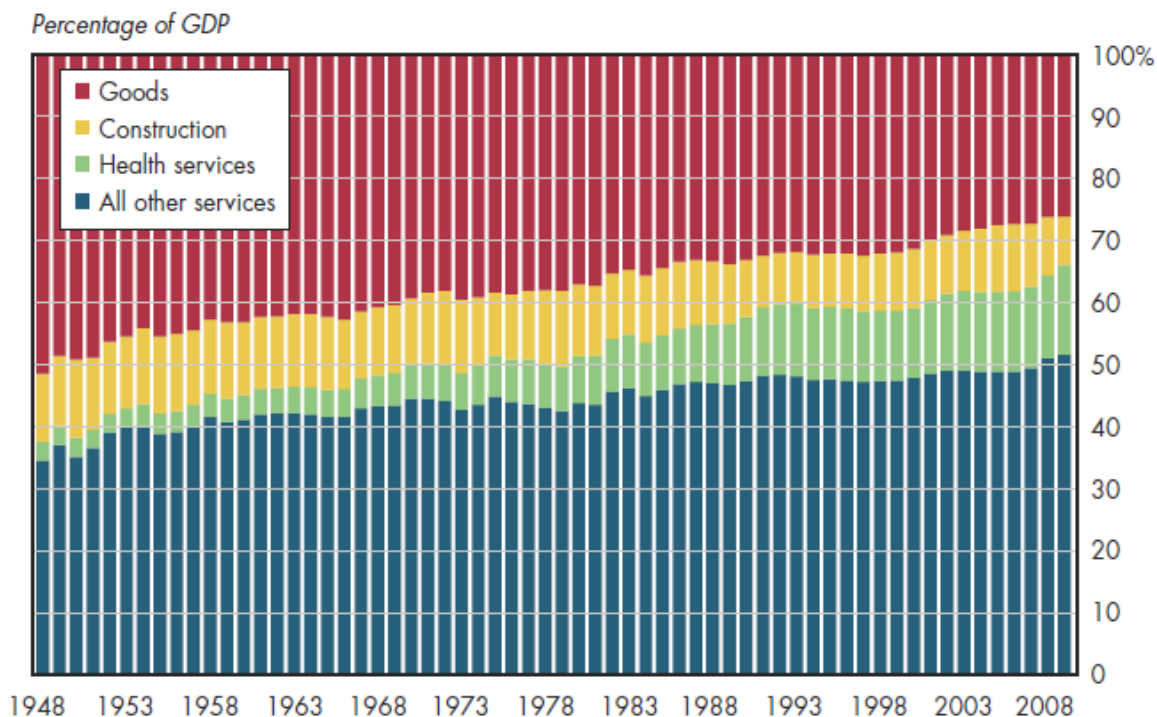- Figure 7.4 Editable Slide (can be formatted as desired)[19]

7.4.2 References

A. Department of Commerce. Bureau of Economic Analysis.

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[17]https://hub.mili.csom.umn.edu/content/m10048/latest/7.4TAB.xls
[18]https://hub.mili.csom.umn.edu/content/m10048/latest/7.4IMG.ppt
[19]https://hub.mili.csom.umn.edu/content/m10048/latest/7.4DATA.ppt

Chapter 8

Chapter 8: Health Services and the Distribution of National Income

8.1 8.1 Share of Health-Related Supplement in National Income, 1948-2008[1]

Health-related fringe benefits have grown far more rapidly than has national income over the past 60 years. Yet the share of national income accounted for by employee compensation — wages, salaries, and supplements — has declined somewhat since its 1980 peak (figure 8.1a). This again shows that in the end, fringe benefits come out of worker pay, not corporate profits.

8.1a Despite rapid growth in health-related supplements, employee compensation as a share of national income has declined since 1980
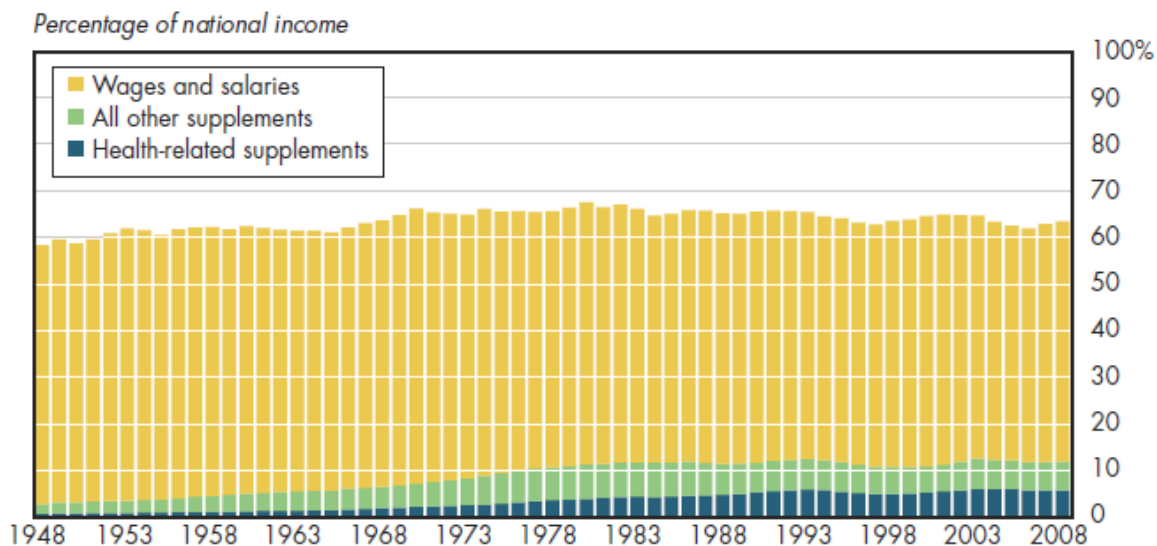
Note: Health-related supplements include employer contributions to health-related social insurance (Medicare Part A, workers' compensation, temporary disability insurance) and private group health insurance.

National income can be viewed as an alternative way of measuring the net value of annual output, by

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adding all the costs of producing it. GDP measures gross output, but to arrive at a net national product (NNP), capital consumption (for example, depreciation of machinery) is not included. In the Bureau of Economic Analysis (BEA) National Income and Product Accounts (NIPA), national income measures the earnings of all factors of production used to produce NNP. These factors include wages, salaries, supplements, rents, interest, and profits and losses. In principle, this should equal the same sum measured in terms of final products (consumption + investment + government purchases + imports). However, because NNP and national income are measured using completely different methods, a small statistical adjustment is needed to reconcile the two totals.

Health-related supplements include not only employer-provided health coverage, but also legally required payroll deductions made by employers for Medicare and workers' compensation. Other fringe benefits, such as pensions or employer-paid retirement contributions, also grew much more rapidly than wages and salaries during this period, although not as rapidly as health-related supplements.

Examined in more detail, mandatory health-related payroll deductions for workers' compensation and Medicare peaked at 1.7 percent of national income in the early 1990s and have declined subsequently (figure 8.1b). Employee health benefits reached 4.1 percent of national income by 1993, declined during the boom years of the 1990s, peaked again at 4.4 percent in 2003 to 2005, slightly declining again thereafter. Non-health supplements peaked at 7.4 percent in the early 1980s and steadily declined thereafter until 2002, when they began increasing again. If health reform is implemented, the combination of employer penalties and mandatory increases in generosity of coverage make it possible that the employee health-benefits share will increase in future years.

8.1b Over 60 years, health-related supplements have increased steadily as a share of national income except in the 1990s and recent years
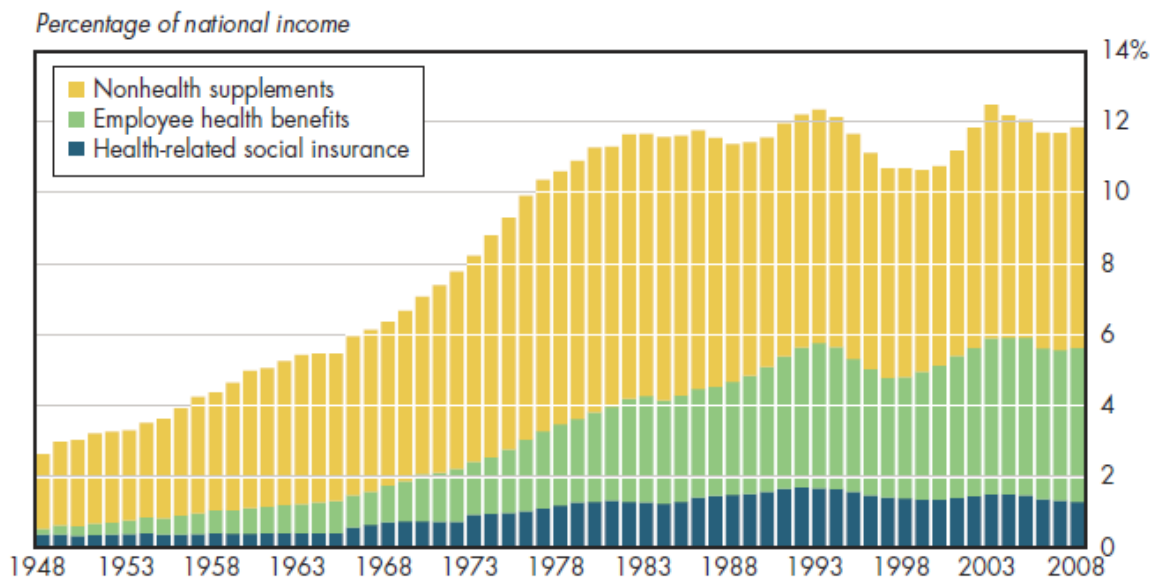
Note: Health-related social insurance includes mandatory employer payroll taxes for Medicare Part A (hospital insurance), military medical insurance (CHAMPUS/VA), state/local temporary disability insurance, and mandatory and voluntary employer contributions toward workers' compensation. Depending on jurisdiction, workers' compensation can serve as wage replacement (disability insurance), compensation for past or future economic loss, or payment of work injury-related medical expenses. Temporary disability insurance is for wage replacement but is counted as health insurance in the National Income and Product Accounts; the minuscule amounts for such insurance therefore are included in the data.

8.1.1 Downloads

Download Excel tables used to create Figures 8.1a/8.1b Tables[2] . Figures 8.1a and 8.1b were created from the following tables (the workbook includes all supporting tables used to create this table):

- Fig. 8.1a: Table 8.1.1. Total Employee Compensation – Wages, Salaries, and Fringes – As a Percentage of National Income, 1948-2008
- Fig. 8.1b: Table 8.1.2. Health-related Fringe Benefits as a Percentage of National Income by Type, 1948-2009

Download PowerPoint versions of both figures.

- Figure 8.1a Image Slide (as it appears above)[3]
- Figure 8.1a Editable Slide (can be formatted as desired)[4]
- Figure 8.1b Image Slide (as it appears above)[5]
- Figure 8.1b Editable Slide (can be formatted as desired)[6]

8.1.2 References

A. Department of Commerce. Bureau of Economic Analysis.

8.2 8.2 Wages and Salaries Account for Big and Growing Share of Income in Health Services[7]

A much higher share of national income for the health services sector flows to employee compensation than in the economy in general (figure 8.2a). The share allocated to wages and salaries, and fringe benefits, is higher than in the economy overall or in the services sector. The combined total exceeds 80 percent of health services-related national income. In the breakdown in figure 8.2a, health services include ambulatory care, hospitals, nursing homes, and residential care facilities. The category excludes the pharmaceutical industry, medical devices, and non-durable medical products sold in retail outlets such as pharmacies. More than 90 percent of national income from health facilities goes to employee compensation, compared with approximately 75 percent of national income having to do with ambulatory health services.

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[2]https://hub.mili.csom.umn.edu/content/m10109/latest/8.1TAB.xls
[3]https://hub.mili.csom.umn.edu/content/m10109/latest/8.1aIMG.ppt
[4]https://hub.mili.csom.umn.edu/content/m10109/latest/8.1aDATA.ppt
[5]https://hub.mili.csom.umn.edu/content/m10109/latest/8.1bIMG.ppt
[6]https://hub.mili.csom.umn.edu/content/m10109/latest/8.1bDATA.ppt
[7]This content is available online at <https://hub.mili.csom.umn.edu/content/m10110/1.1/>.

8.2a In health services, the share of income for wages and salaries as well as for fringe benefits are higher than in the service sector or general economy
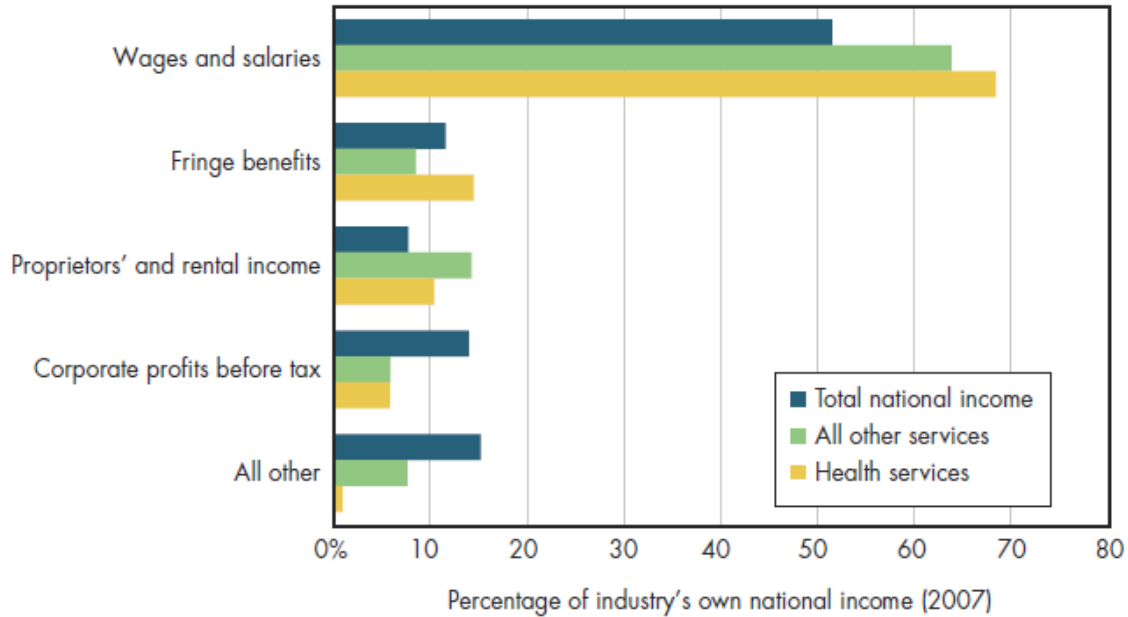
Percentage of industry's own national income (2007)

Note: "Health services" includes ambulatory health care services and hospitals, nursing, and residential care facilities. It does not include pharmaceuticals, medical devices, non-durable medical products, or the health insurance industry.

The share accounted for by proprietors' and rental income is more in the health services industry than in the general economy, albeit less than that in the services industry overall. Conversely, the share flowing into pre-tax corporate profits is twice as much in the general economy as in the health services industry, reflecting the dominance of non-profit and public service providers in health care described in chapter 7.

The employee compensation share of national income in the health services sector has grown dramatically in less than 50 years (figure 8.2b). Just before the introduction of Medicare and Medicaid (which began in 1966), employee compensation accounted for less than half of the national income generated by health services. But in less than 20 years after the massive infusion of public dollars into these new entitlement programs, the employee compensation share had climbed to more than 80 percent (where it has stayed ever since).

8.2b In the health services sector, both wages and salaries, and fringe benefits are substantially higher than they were 50 years ago

Percentage of national income related to health services
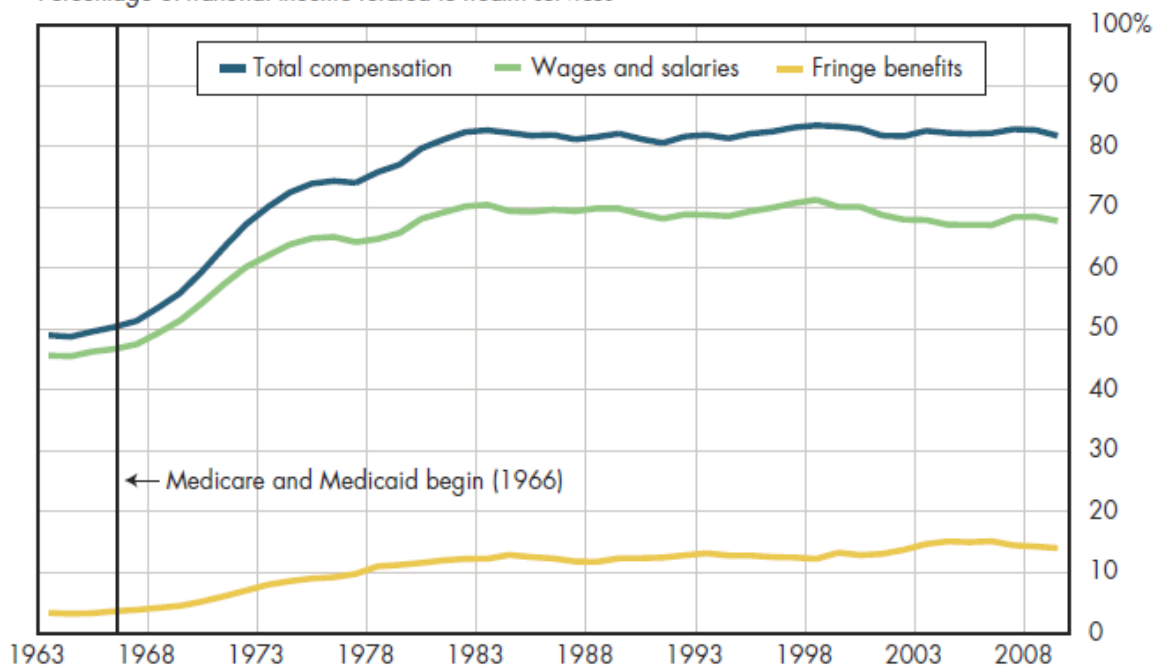
Unionization has helped spur this growth, but another factor has been the declining share of health services national income that went to proprietors' and rental income. Physicians who own their own practices get proprietors' income rather than wages. However, an increasing number of physicians are salaried, thereby elevating the relative importance of wages as a form of health sector compensation.

8.2.1 Downloads

Download Excel tables used to create Figures 8.2a/8.2b Tables[8] . Figures 8.2a and 8.2b were created from the following tables (the workbook includes all supporting tables used to create this table):

- Fig. 8.2a: Table 8.2.1. Percentage Distribution of National Income Related to Health Services, 2007
- Fig. 8.2b: Table 8.2.2. Employee Compensation as a Percentage of National Income Related to Health Services, 1963-2009

Download PowerPoint versions of both figures.

- Figure 8.2a Image Slide (as it appears above)[9]
- Figure 8.2a Editable Slide (can be formatted as desired)[10]
- Figure 8.2b Image Slide (as it appears above)[11]
- Figure 8.2b Editable Slide (can be formatted as desired)[12]

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[8]https://hub.mili.csom.umn.edu/content/m10110/latest/8.2TAB.xls
[9]https://hub.mili.csom.umn.edu/content/m10110/latest/8.2aIMG.ppt
[10]https://hub.mili.csom.umn.edu/content/m10110/latest/8.2aDATA.ppt
[11]https://hub.mili.csom.umn.edu/content/m10110/latest/8.2bIMG.ppt
[12]https://hub.mili.csom.umn.edu/content/m10110/latest/8.2bDATA.ppt

8.2.2 References

A. Department of Commerce. Bureau of Economic Analysis.

8.3 8.3 Share of Health-Related Income Accounted for by Proprietors' and Rental Has Fallen Steeply[13]

Before Medicare and Medicaid, approximately half of national income for health services went to proprietors' and rental income. Not even 20 years later, this amount was less than 15 percent. It has steadily declined further to approximately 10 per- cent today (figure 8.3a). During this period, the rest of the services sector also saw a declining share of its national income going to proprietors' and rental income, but this occurred much less rapidly than in health services.

8.3a The share of health-related national income accounted for by proprietors' and rental income has declined dramatically over 50 years

Percentage of sector-specific national income attributable to proprietors' and rental income
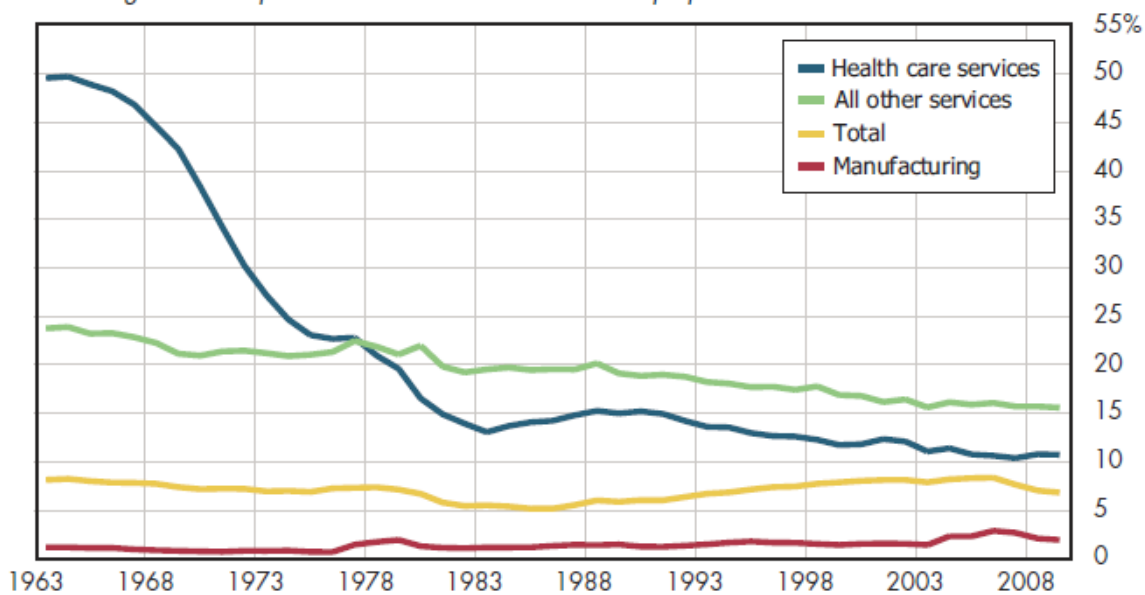
Note: Health services includes 1) ambulatory health care services, and 2) hospitals and nursing and residential care facilities. It does not include pharmaceuticals, medical devices, non-durable medical products, or the health insurance industry.

The current level in health care (just over 10 percent) is below the share seen in the rest of the services sector and is only slightly more than the percentage in the economy overall. In contrast, the share is less than 3 percent in manufacturing.

A growing number of physicians have abandoned their own practices in favor of a buy-out by hospitals or managed care plans. There now are thousands of retail clinics run by major chains such as CVS, Walgreen's, and Wal-Mart. With health reform, pressures to adopt electronic medical records are likely to fuel a continuation of this trend away from solo practices and partnerships into corporate medicine.

In principle, owner income reflects both what unincorporated health professionals earn as labor (wages, salaries, fringe benefits) and some hard-to-measure remainder (if anything) that represents profits. If a solo practitioner with a net income of $200,000 became a hospital employee whose total compensation was

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[13]This content is available online at <https://hub.mili.csom.umn.edu/content/m10111/1.1/>.

$200,000, total spending would remain unchanged. However, the employee compensation share of national income would rise by the identical amount that proprietors' income fell.

Another way to look at these trends is to consider what share of total proprietors' and rental income is accounted for by the health sector. Today, health services account for approximately one in eight dollars of such income (figure 8.3b), contributing more than $100 billion to the national total. In absolute dollar terms, this is the highest it has ever been. One-eighth also is the highest share since 1994 and is almost identical to the share observed in 1929. Even so, over 80 years, the health sector share has never exceeded 20 percent except in 1932.

8.3b The health services share of owner income is almost as high today as it was in 1929; the share for all other services has increased

Percentage of total proprietors' and rental income
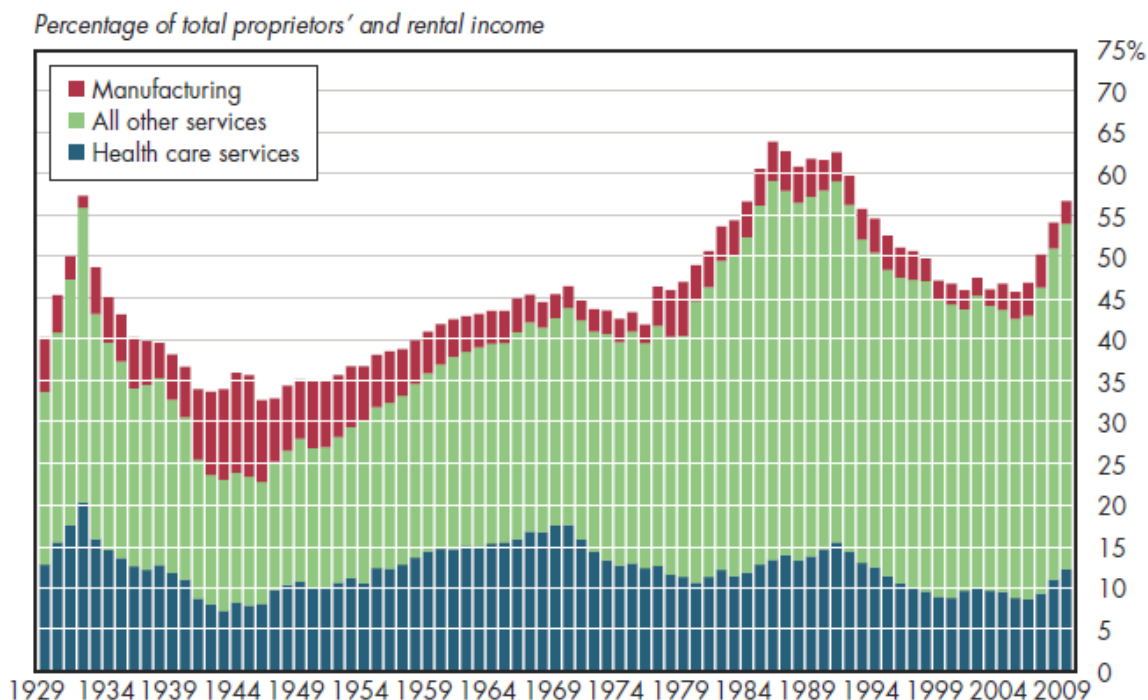
8.3.1 Downloads

Download Excel tables used to create both figures: Figures 8.3a/8.3b Tables[14] . Figures 8.3a and 8.3b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 8.3. Proprietors' and Rental Income as a Percentage of National Income for Selected Industries, 1929-2009

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- Figure 8.3a Image Slide (as it appears above)[15]
- Figure 8.3a Editable Slide (can be formatted as desired)[16]
- Figure 8.3b Image Slide (as it appears above)[17]
- Figure 8.3b Editable Slide (can be formatted as desired)[18]

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[14]https://hub.mili.csom.umn.edu/content/m10111/latest/8.3TAB.xls
[15]https://hub.mili.csom.umn.edu/content/m10111/latest/8.3aIMG.ppt
[16]https://hub.mili.csom.umn.edu/content/m10111/latest/8.3aDATA.ppt
[17]https://hub.mili.csom.umn.edu/content/m10111/latest/8.3bIMG.ppt
[18]https://hub.mili.csom.umn.edu/content/m10111/latest/8.3bDATA.ppt

8.3.2 References

A. Department of Commerce. Bureau of Economic Analysis.

8.4 8.4 Corporate Profits Have Reached Peak Share of Health Services Income[19]

After-tax corporate profits for health services now exceed $58 billion. This is a large number in absolute terms but accounts for only 6.1 percent of health services-related national income. The share of such income accounted for by profits has grown considerably since 1963, when both pre-tax and after-tax profits were less than 0.5 percent of health care's national income (figure 8.4a).

8.4a Health services profits have increased substantially since the advent of Medicare and Medicaid but still are below average

Profits as a percentage of industry's own national income
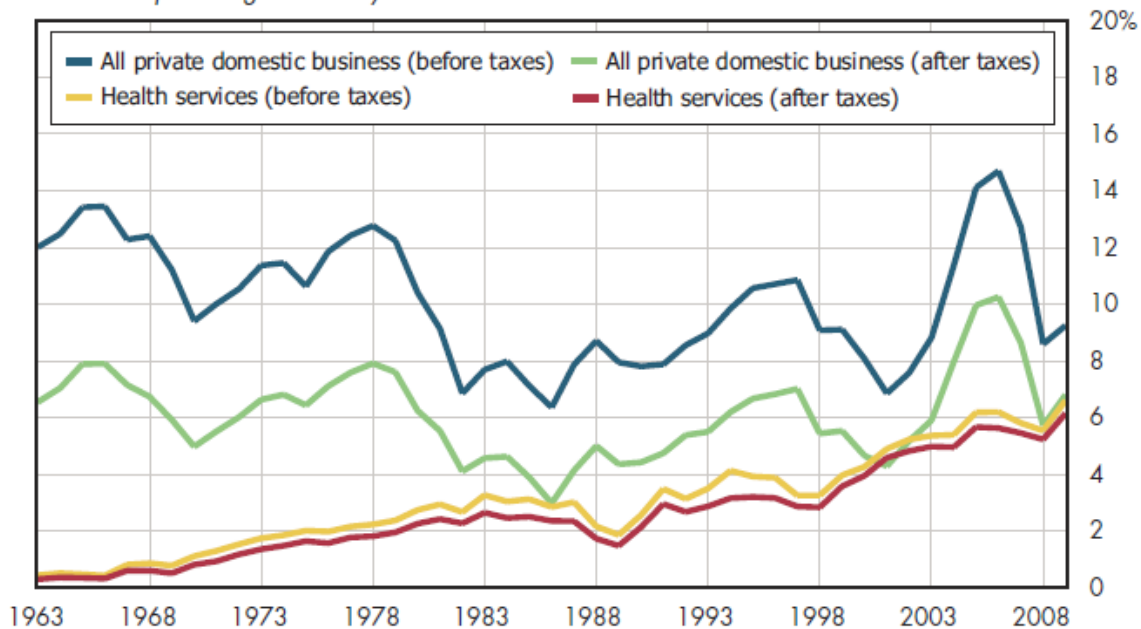
These numbers reflect the growing share of health services provided by for-profit organizations and the declining share of health-related national income accounted for by proprietors' and rental income. These numbers do not include profits in pharmaceuticals or medical devices, or they assuredly would be higher.

Corporate profits in most of the rest of the economy tend to be highly sensitive to changing business conditions. Little evidence of parallel fluctuations in health services profits exists. The decline in profits starting in 1983, for example, occurred after the deep recession of 1981-1982 had ended. It can be attributed to the introduction of the Medicare PPS for hospitals, which limited payments to a fixed amount that varied by diagnosis. In contrast to the earlier cost-based reimbursement system, PPS forced hospitals to economize by limiting lengths of stay and reducing the intensity of care per admission.

Likewise, much of the downturn in profits starting in 1997 is likely caused by the Balanced Budget Act of 1997 (BBA97), which included the largest cuts in Medi- care's history. BBA97 included payment cuts for hospitals and home health agencies that sharply crimped their profitability. In late 1999, Congress passed legislation to ameliorate some of BBA97's harshest fiscal consequences. As expected, profitability again

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[19]This content is available online at <https://hub.mili.csom.umn.edu/content/m10112/1.1/>.

started to increase. Nevertheless, the most recent decline in profitability started in 2006, long before the most recent recession started.

Although parallel profitability numbers are lacking at a more fine-grained level, approximate measures such as gross operating surpluses suggest that profits are high- er in the ambulatory health sector than in health facilities (figure 8.4b). In ambulatory care, corporate profits appear to be increasing in importance.

8.4b Gross operating surpluses—an extreme approximate measure of profitability—are higher in ambulatory care than in health facilities

Gross operating surplus (GOS) as a percentage of industry's own national income
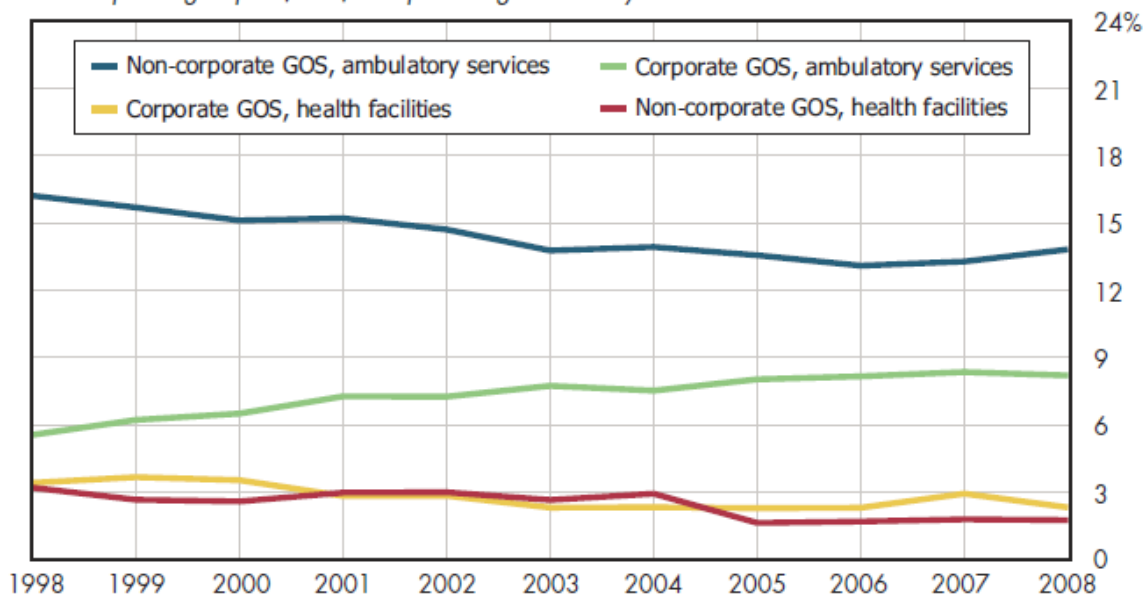
Note: GOS is the share of industry's national income remaining after deducting compensation for employees and indirect business taxes (for example, privilege licenses). GOS is somewhat more than pre-tax corporate profits because it includes net interest payments and adjustments for capital consumption and inventory valuation.

8.4.1 Downloads

Download Excel workbooks used to create Figure 8.4a Table[20] and Figure 8.4b Table[21] . [Note that you'd have separate links for each set of tables] Figures 8.4a and 8.4b were created from the following tables (the workbook includes all supporting tables used to create these tables):

- Fig. 8.4a: Table 8.4.1. Corporate Profits Before and After Taxes as Percentages of National Income Related to Health Care, 1963-2008
- Fig. 8.4b: Table 8.4.2. Gross Operating Surplus as a Percentage of National Income for Ambulatory Health Services and Hospitals and Nursing Facilities, 1998-2008

Download PowerPoint versions of both figures.

- Figure 8.4a Image Slide (as it appears above)[22]
- Figure 8.4a Editable Slide (can be formatted as desired)[23]

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[20]https://hub.mili.csom.umn.edu/content/m10112/latest/8.4aTAB.xls
[21]https://hub.mili.csom.umn.edu/content/m10112/latest/8.4bTAB.xls
[22]https://hub.mili.csom.umn.edu/content/m10112/latest/8.4aIMG.ppt
[23]https://hub.mili.csom.umn.edu/content/m10112/latest/8.4aDATA.ppt

- Figure 8.4b Image Slide (as it appears above)[24]
- Figure 8.4b Editable Slide (can be formatted as desired)[25]

8.4.2 References

A. Department of Commerce. Bureau of Economic Analysis.

8.5 8.5 Pre-Tax Corp Profits in Health Sector Are the Least among Major Sectors in Private Businesses[26]

Before-tax corporate profits for health services are generally less than half the levels seen in private businesses as a group, even during times of recession. As illustrated in figure 8.5, in goods-producing industries (agriculture, forestry, fishing and hunting, mining, manufacturing, and construction), pre-tax profits typically are in the double-digit range, reaching as much as 20 percent in recent years. In contrast, pre-tax corporate profits in health services, while increasing, have consistently been much less than 10 percent of that industry's national income.

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[24]https://hub.mili.csom.umn.edu/content/m10112/latest/8.4bIMG.ppt
[25]https://hub.mili.csom.umn.edu/content/m10112/latest/8.4bDATA.ppt
[26]This content is available online at <https://hub.mili.csom.umn.edu/content/m10113/1.1/>.

8.5 Pre-tax profits as a share of income are lower in health care than in goods-producing industries but are comparable to non-health services

Profits before taxes as a percentage of industry's own national income
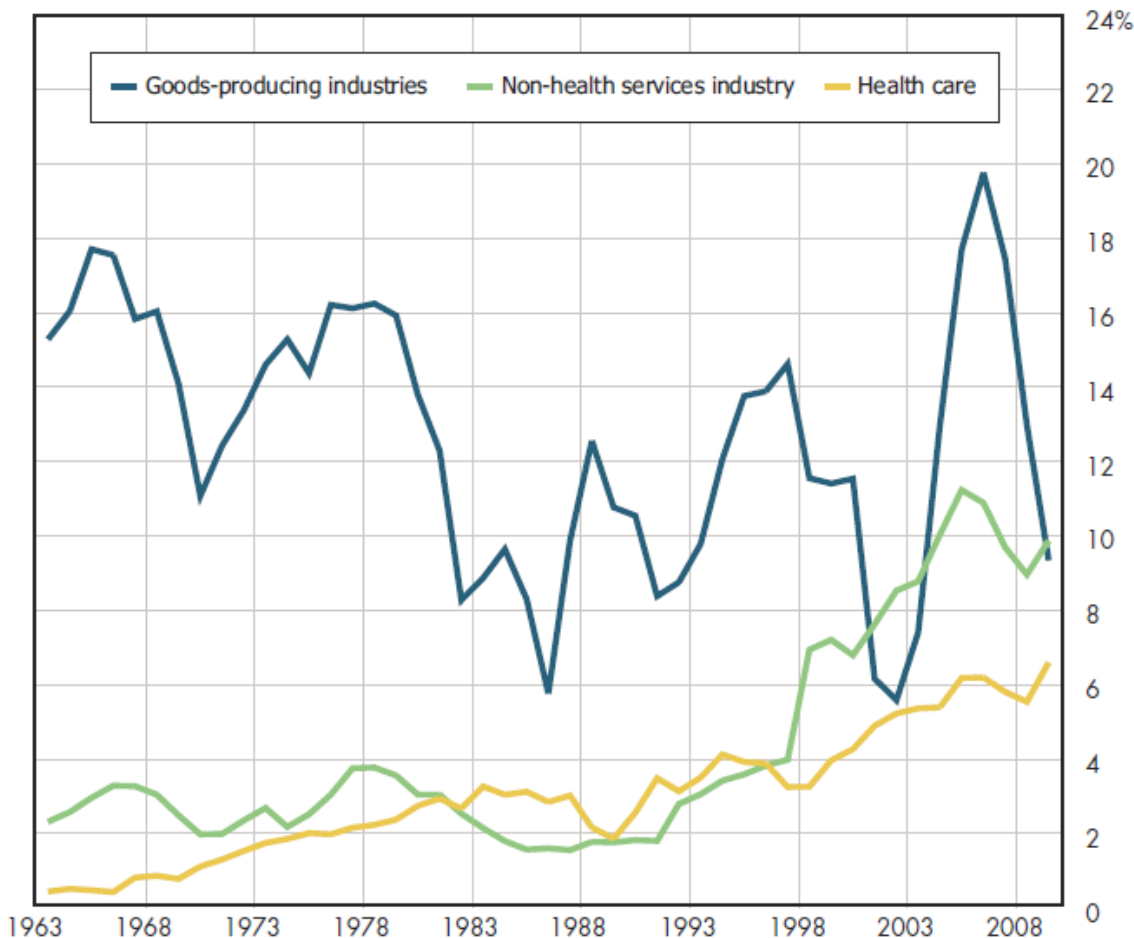
Note: The industry classification system changed in 1998, substantially changing the components of the non-health services industry. Although every effort has been made to retain comparable industries within this category over time, this classification change might account for at least some of the apparent gap that appeared that year between health care and the rest of the services industry.

That said, profitability in the private economy, and major sectors such as goods and other services, are much more volatile than in the health services market. Consequently, there are brief periods during recoveries from recessions in which the share of national income going to profits in these other sectors increases more quickly than in health services. However, during the past 50 years, the secular rise in health sector profits as a share of health-related national income has been more rapid than in any other sectors.

The apparent sharp rise in profitability among all other services in 1998 might be a statistical anomaly. The BEA introduced a substantial revision in how industries were categorized, and they ceased reporting an aggregate number for "Services." Thus, since 1998, the total for services had to be derived by adding component parts. However, certain services (for example, information services) now appear in other BEA-reported aggregates. Conversely, some services appearing in the component parts might previously have been included in a different industry. Thus, the trend between 1998-2008 is more likely to be accurate than is the size of the large estimated increase between 1997 and 1998.

To avoid confusion, corporate profits shown here reflect the definitions used by the BEA. The BEA makes several adjustments (for example, inflation adjustments) to what are known as "book profits" that corporations report to stockholders in various financial reports. For most purposes, the adjusted BEA numbers are technically superior to these book amounts, but the adjustments also are arbitrary to some extent.

8.5.1 Downloads

Download Excel tables used to create figure: Figure 8.5 Table[27] . Figure 8.5 was created from the following table (the workbook includes all supporting tables used to create this table):

- Table 8.5. Corporate Profits Before Taxes as Percentages of Sector-Specific National Income, 1963-2008

  Download PowerPoint versions of both figures.

- Figure 8.5 Image Slide (as it appears above)[28]
- Figure 8.5 Editable Slide (can be formatted as desired)[29]

8.5.2 References

A. Department of Commerce. Bureau of Economic Analysis.

8.6 8.6 Among Fortune 500, Health Services Companies Have Lower Profits[30]

Even among publicly traded companies, industries having to do with health services tend to have lower rates of return than most other industries. Profitability for health services generally was less than in other major sectors of the economy (refer to figure 8.5). Some might view this as misleading because so much of the health industry is comprised of non-profit or government health providers.

An arguably fairer apples-to-apples comparison would be to restrict the comparison to for-profit firms within each sector. The most readily available numbers are rankings among Fortune 500 firms grouped by major industry (approximately 50 such industries are included in these rankings). This clearly is not complete because it ignores small- and medium-sized firms. Nevertheless, the Fortune 500 typically accounts for the lion's share of output in a given industry. Thus, these rankings provide an approximate idea of how health care firms compare to the rest of the economy. In figures 8.6a-c, the numbers in each bar show the ranking of each industry relative to all major U.S. industries. Although industry rankings were not reported with the most recently released 2009 and 2010 profit numbers, they are not likely to be sharply different from the rankings for prior years.

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[27]https://hub.mili.csom.umn.edu/content/m10113/latest/8.5TAB.xls

[28]https://hub.mili.csom.umn.edu/content/m10113/latest/8.5IMG.ppt

[29]https://hub.mili.csom.umn.edu/content/m10113/latest/8.5DATA.ppt

[30]This content is available online at <https://hub.mili.csom.umn.edu/content/m10114/1.4/>.

8.6a Profit margins generally are highest for "health insurance and managed care" and lowest for health care wholesalers for all health-related services

Profits as a percentage of revenue (return on revenue [ROR]), Fortune 500 publicly traded companies
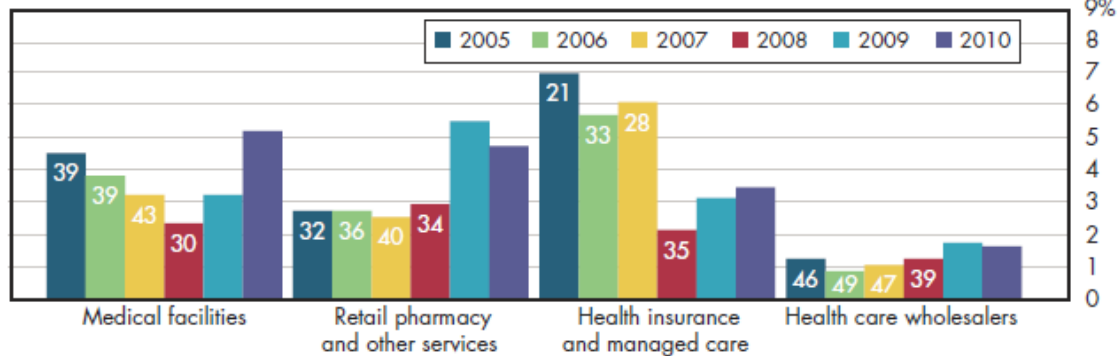
Note: Data labels indicate industry's ranking within Fortune 500 on ROR for year shown (rankings not available for 2009 or 2010). Although the number varies slightly by year and profitability measure, approximately 50 industries are included in each year's ranking.

8.6b Retail pharmacies generally have the highest return on assets and medical facilities the lowest for health-related services

Profits as a percentage of assets (ROA), Fortune 500 publicly traded companies

Note: Data labels indicate industry's ranking on ROA for year shown (rankings not available for 2009 or 2010). Although the number varies slightly by year and profitability measure, approximately 50 industries are included in each ranking.

8.6c Return on equity generally exceeds 10 percent among health-related services industries

Profits as a percentage of equity (ROE), Fortune 500 publicly traded companies

Note: Data labels indicate industry's ranking on ROE for year shown (rankings not available for 2009 or 2010). Although the number varies slightly by year and profitability measure, approximately 50 industries are included in each ranking.

I start with health services industries and then turn to goods-producing components of health care (pharmaceuticals and medical equipment) in figures 8.7a-c. There are three standard measures of profits. In each case, profits are defined as the difference between revenues and costs, but the denominator used to calculate the profit rate differs. Return on revenue (ROR), what many call "profit margin," calculates profits as a percent of total revenues. Most health services industries have single-digit RORs of less than 5 percent (figure 8.6a).

When profits are divided by assets, that is, the overall capital invested in a given company, the result is return on assets (ROA). Assets equal both equity (for example, stocks) and debt. Such returns also are typically at single-digit levels for health services industries (figure 8.6b). The final measure divides only by equity, that is, to exclude debt. Using the return on equity (ROE), the health services industries attain double-digit levels of returns, but again these typically rank them in the bottom half of industries overall (figure 8.6c).

8.6.1 Downloads

Download Figure 8.6a-c Tables[31] used to create Figures 8.6a-c (the workbook includes all supporting tables used to create these tables).

- Fig. 8.6a created from Table 8.6a. Trends in Profitability: Return on Revenue Among Fortune 500 Firms for Selected Industries, 2005-2013 (last updated 6.21.14)
- Fig. 8.6b created from Table 8.6b. Trends in Profitability: Return on Assets Among Fortune 500 Firms for Selected Industries, 2005-2013 (last updated 6.21.14)
- Fig. 8.6c created from Table 8.6c. Trends in Profitability: Return on Equity Among Fortune 500 Firms for Selected Industries, 2005-2013 (last updated 6.21.14)

Download PowerPoint versions of all three figures.

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- Figure 8.6b Image Slide (as it appears above)[34]
- Figure 8.6b Editable Slide (can be formatted as desired; last updated June 21, 2014)[35]
- Figure 8.6c Image Slide (as it appears above)[36]

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[31]https://hub.mili.csom.umn.edu/content/m10114/latest/8.6TAB
[32]https://hub.mili.csom.umn.edu/content/m10114/latest/8.6aIMG.ppt
[33]https://hub.mili.csom.umn.edu/content/m10114/latest/8.6aDATA.ppt
[34]https://hub.mili.csom.umn.edu/content/m10114/latest/8.6bIMG.ppt
[35]https://hub.mili.csom.umn.edu/content/m10114/latest/8.6bDATA.ppt
[36]https://hub.mili.csom.umn.edu/content/m10114/latest/8.6cIMG.ppt

- Figure 8.6c Editable Slide (can be formatted as desired; last updated June 21, 2014)[37]

8.6.2 References

A. Fortune 500. Our Annual Ranking of America's Largest Corporations. http://fortune.com/fortune500/ (accessed June 20, 2014).

8.7 8.7 Pharmaceutical and Medical Devices Are among Highest-Profit Industries[38]

Pharmaceuticals and medical devices typically rank among the top 10 most profitable industries in America. This is true whether profits are measured as a return on revenue (figure 8.7a), return on assets (figure 8.7b), or return on equity (figure 8.7c). Occasionally, one of these two industries ranks first among all industries in some measures of profitability (figure 8.7b).

8.7a Pharmaceuticals and medical devices typically rank in the top 10 among all industries in their return on revenue

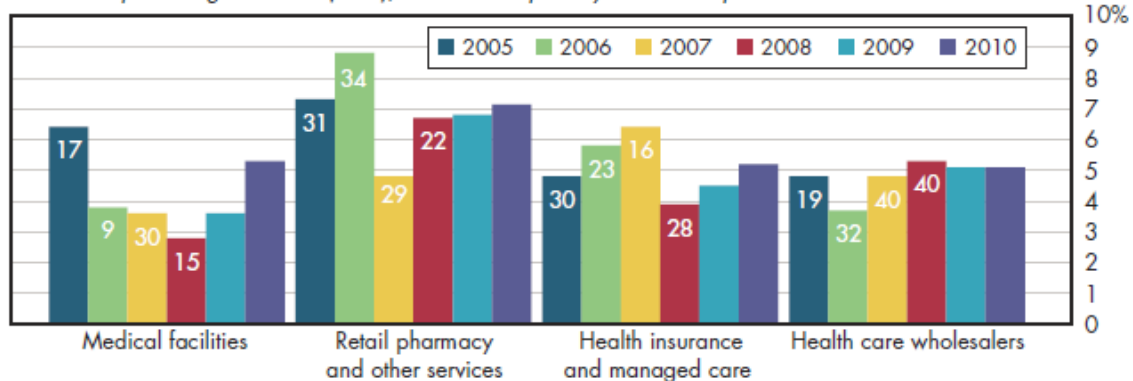Profits as a percentage of revenue (ROR), Fortune 500 publicly traded companies
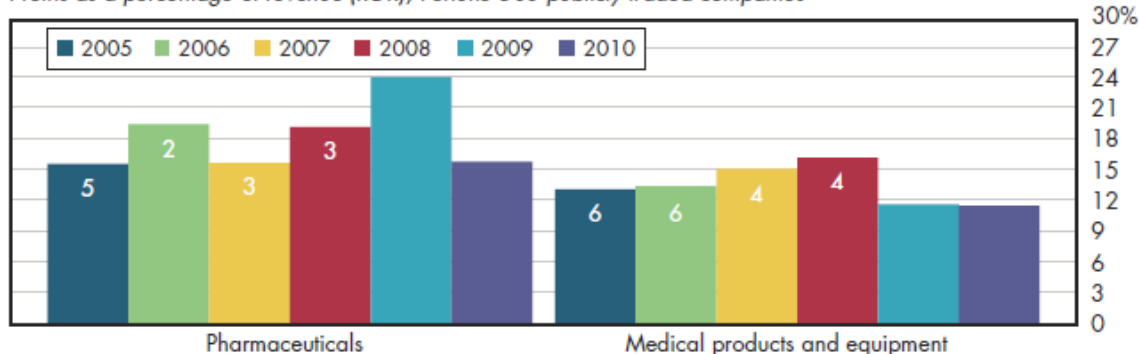
Note: Data labels indicate industry's ranking on ROR for year shown (rankings not available for 2009 or 2010). Although the number varies slightly by year and profitability measure, approximately 50 industries are included in each ranking.

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[37]https://hub.mili.csom.umn.edu/content/m10114/latest/8.6cDATA.ppt
[38]This content is available online at <https://hub.mili.csom.umn.edu/content/m10115/1.3/>.

8.7b Returns on assets for pharmaceuticals and medical devices place them among the top 10 industries in the United States
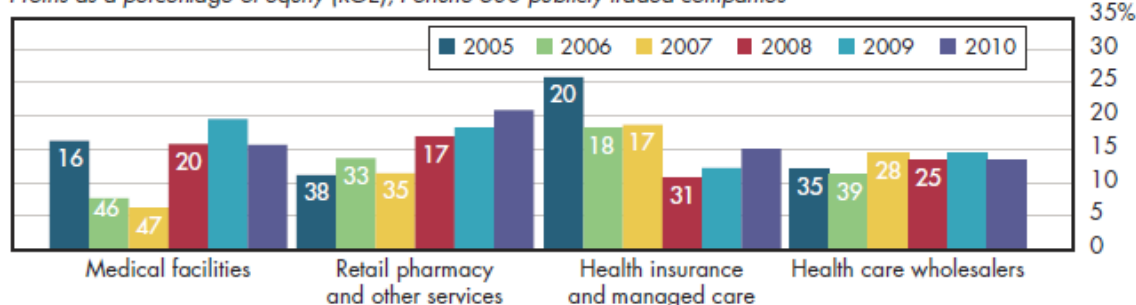
Profits as a percentage of assets (ROA), Fortune 500 publicly traded companies
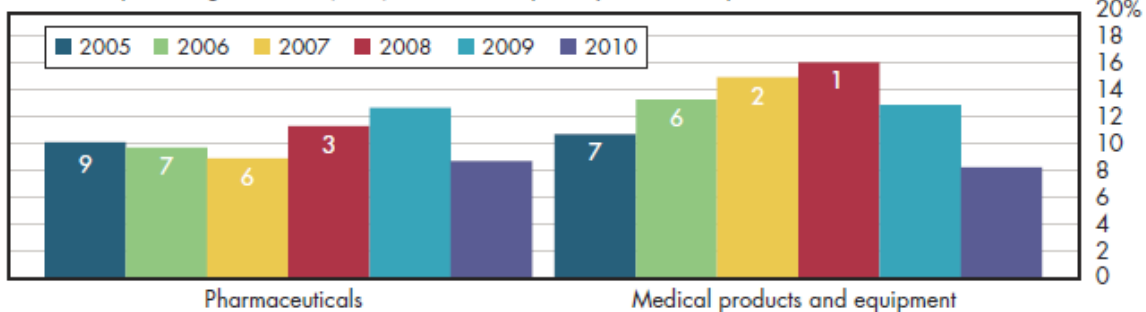
Note: Data labels indicate industry's ranking on ROA for year shown (rankings not available for 2009 or 2010). Although the number varies slightly by year and profitability measure, approximately 50 industries are included in each ranking.

8.7c Both pharmaceuticals and medical products have somewhat lower industry rankings on return on equity than other measures of profit

Profits as a percentage of equity (ROE), Fortune 500 publicly traded companies
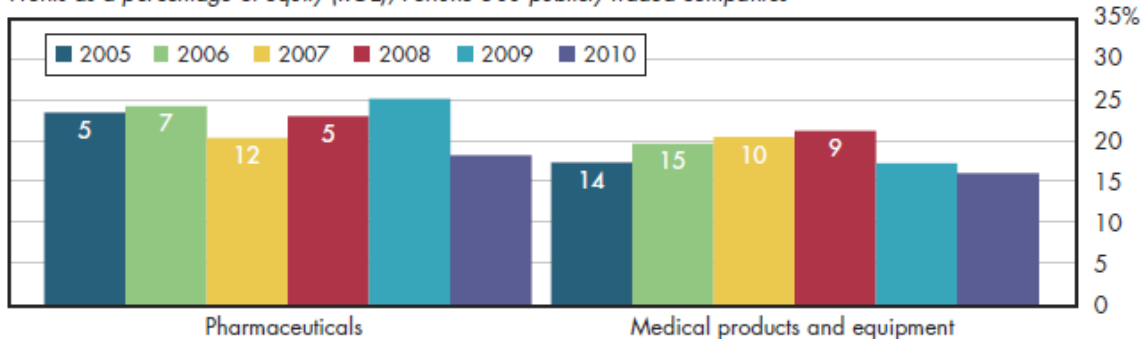
Note: Data labels indicate industry's ranking on ROE for year shown (rankings not available for 2009 or 2010). Although the number varies slightly by year and profitability measure, approximately 50 industries are included in each ranking.

Several reasons explain why these two health industries are so much more profitable than the various health-related services industries just examined. First, as shown previously, both industries consist entirely of for-profit firms, creating an arguably more competitive environment. Although there are mixed findings regarding performance of for-profit versus non-profit or government-owned enterprises, almost all comparisons agree that rates of return (however measured) are higher in for-profit firms relative to the not-for-profit counterparts.

Second, patents play a far more important role in pharmaceuticals and medical devices than in the rest of the health care sector. By design, patents are structured to encourage innovation by permitting their owners to earn monopoly returns for a limited time. Although the nominal patent term is 20 years, more than half of this time is typically lost before Food and Drug Administration (FDA) approval due to the lengthy time required for clinical trials and regulatory review.

Third (and related), pharmaceutical R&D especially is a complex, costly, risky, and time-consuming process. Including the costs associated with hundreds of compounds that do not succeed, as well as the cost of capital (financial resources) that is unavailable for other uses during this lengthy process, more than $1 billion is spent to bring a single new drug to market. Absent the incentives provided by the patent system, there is no question that the amount of pharmaceutical R&D would be considerably less. Concomitantly, the number of new drugs discovered would be fewer. Thus, high profits represent the price paid for the benefits

of new discoveries.

Whether profits are higher than needed to bring forth an optimal level of innovation is a perennial question. Several different analyses have concluded that the high level of pharmaceutical profits only slightly exceeds the industry's cost of capital. Briefly, investors demand higher profits to invest in an industry where returns on R&D are so risky.

8.7.1 Downloads

Download Figure 8.7a-c Tables[39] used to create Figures 8.7a-c (the workbook includes all supporting tables used to create these tables).

- Fig. 8.7a created from Table 8.6a. Trends in Profitability: Return on Revenue Among Fortune 500 Firms for Selected Industries, 2005-2013 (last updated 6.21.14)
- Fig. 8.7b created from Table 8.6b. Trends in Profitability: Return on Assets Among Fortune 500 Firms for Selected Industries, 2005-2013 (last updated 6.21.14)
- Fig. 8.7c created from Table 8.6c. Trends in Profitability: Return on Equity Among Fortune 500 Firms for Selected Industries, 2005-2013 (last updated 6.21.14)

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- Figure 8.7a Image Slide (as it appears above)[40]
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- Figure 8.7b Image Slide (as it appears above)[42]
- Figure 8.7b Editable Slide (can be formatted as desired; last updated June 21, 2014)[43]
- Figure 8.7c Image Slide (as it appears above)[44]
- Figure 8.7c Editable Slide (can be formatted as desired; last updated June 21, 2014)[45]

8.7.2 References

A. Fortune 500. Our Annual Ranking of America's Largest Corporations. http://fortune.com/fortune500/ (accessed June 21, 2014).

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[39]https://hub.mili.csom.umn.edu/content/m10115/latest/8.6TAB
[40]https://hub.mili.csom.umn.edu/content/m10115/latest/8.7aIMG.ppt
[41]https://hub.mili.csom.umn.edu/content/m10115/latest/8.7aDATA.ppt
[42]https://hub.mili.csom.umn.edu/content/m10115/latest/8.7bIMG.ppt
[43]https://hub.mili.csom.umn.edu/content/m10115/latest/8.7bDATA.ppt
[44]https://hub.mili.csom.umn.edu/content/m10115/latest/8.7cIMG.ppt
[45]https://hub.mili.csom.umn.edu/content/m10115/latest/8.7cDATA.ppt

Chapter 9

Chapter 9: Productivity in the Health Sector

9.1 9.1 Recent Increase in Health Services Productivity[1]

In 2007, the output of real health services in American health facilities was approximately double its level 20 years earlier. What was behind this production increase? To what extent did it reflect the use of more factors of production or inputs—the number of persons employed and the amount of capital they had to work with—and to what extent did it reflect greater efficiency in the use of inputs, that is, increased productivity? Measuring productivity growth is important because if productivity declines, the nation will require ever-increasing amounts of labor and capital to produce the same level of health output. This either will slow down or might even reverse the rise in general living standards.

The basic facts about the growth of output and input are compiled by the Bureau of Labor Statistics (BLS). Unfortunately, these facts are limited both in scope — covering only health services — and time — going back to only 1987. Typically, the growth of output is compared with the growth of labor input, which is measured in simplest terms by changes in employment and annual hours worked. Labor hours for health facilities rose just over 60 percent during these 20 years, approximately 2.5 percent annually (figure 9.1a). Output grew 3.4 percent a year. These numbers suggest a rise in labor productivity of 0.9 percent annually (3.4 minus 2.5).

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10122/1.2/>.

9.1a In hospitals and nursing homes, real output increased faster than labor hours over the past decade but more slowly than all inputs combined

Indexes: 1987=100
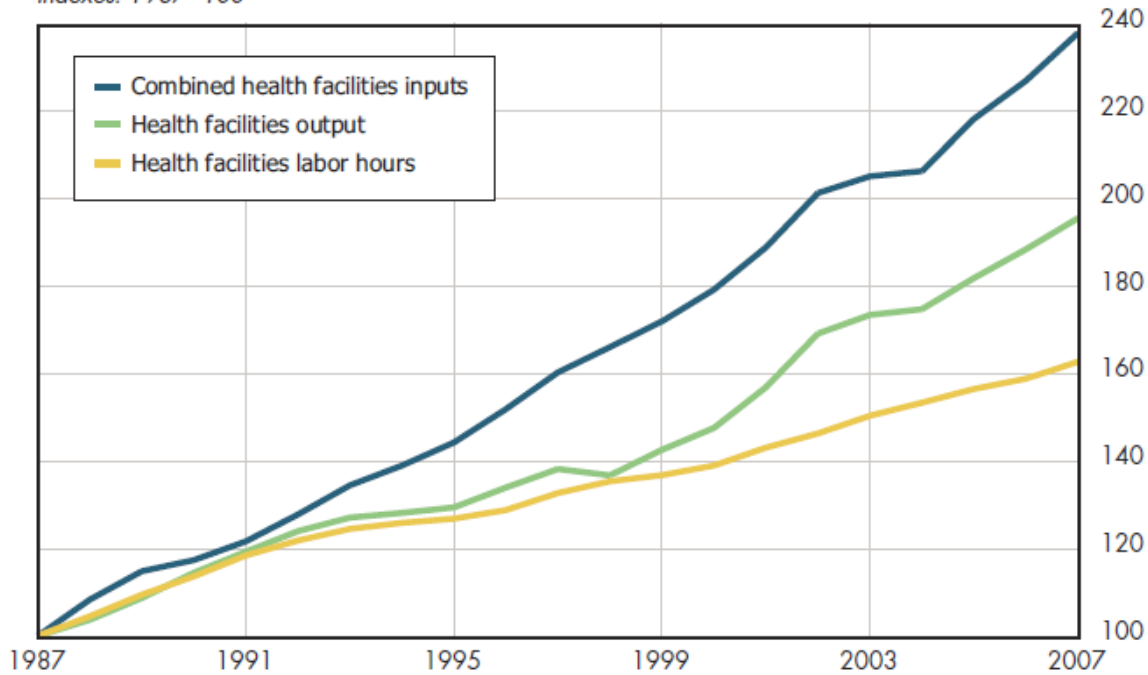
However, this particular measure ignores other important factors that contribute to production, including the physical facilities themselves, equipment, inventories, and land. With these taken into account, combined inputs for health facilities rose 140 percent during these 20 years, approximately 4.4 percent annually. This growth implies a *decline* in productivity more broadly measured.

A similar result, though less extreme, occurred in the ambulatory health services industry. Over the entire period since 1987, output rose at almost the identical rate as labor input, although declining labor productivity occurred during the entire 1990s (figure 9.1b). Output grew somewhat faster than among health facilities, but combined inputs grew faster still, again implying declining productivity.

9.1b Over the past 20 years, total inputs for ambulatory health care outpaced growth in output even as growth in labor hours slowed

Indexes: 1987=100
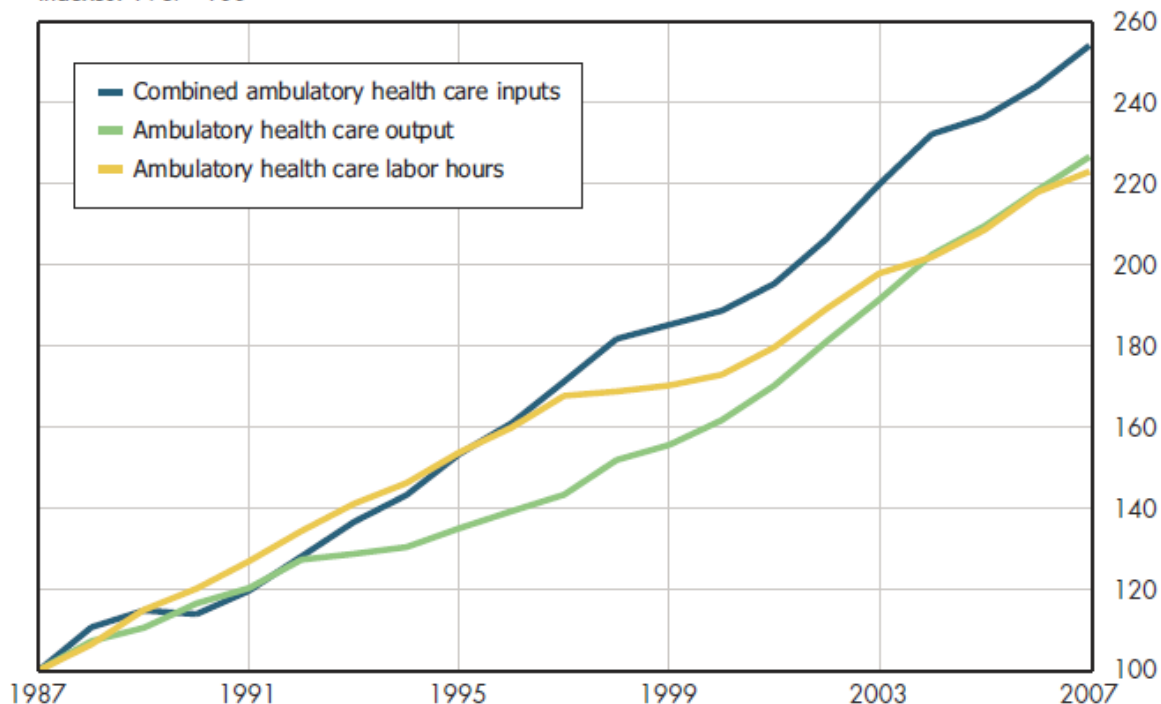
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- Figure 9.1b Editable Slide (can be formatted as desired)[5]

Download Excel tables used to create both figures: Figures 9.1a/9.1b Tables[6] . Figures 9.1a and 9.1b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 9.1. Total Output, Labor Hours, and Combined Inputs for Health Sector, 1987-2009

9.1.2 References

A. Author's calculations.
B. Department of Commerce. Bureau of Economic Analysis.
C. Department of Labor. Bureau of Labor Statistics.

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[2]https://hub.mili.csom.umn.edu/content/m10122/latest/9.1aIMG.ppt
[3]https://hub.mili.csom.umn.edu/content/m10122/latest/9.1aDATA.ppt
[4]https://hub.mili.csom.umn.edu/content/m10122/latest/9.1bIMG.ppt
[5]https://hub.mili.csom.umn.edu/content/m10122/latest/9.1bDATA.ppt
[6]https://hub.mili.csom.umn.edu/content/m10122/latest/9.1TAB.xls

9.2 9.2 Health Productivity Has Grown Less among Private Businesses[7]

Ambulatory care output per unit of input was less in 2007 than it had been 20 years earlier (figure 9.2a). This is only one way of measuring productivity. Even in terms of output per hour, productivity in the ambulatory health care industry generally declined into the 1990s and generally rose thereafter. Even so, hourly productivity in 2007 was almost identical to its 1987 level. In contrast, productivity grew much more steadily in the private sector overall during the same period. Hourly productivity climbed by approximately 60 percent while output per unit of input increased approximately 25 percent.

9.2a Since 1987, low or negative productivity growth in ambulatory health care contrasts with steadier private-sector productivity gains

Indexes: 1987=100

- Private output per hour
- Private output per unit of input
- Ambulatory HC output per hour
- Ambulatory HC output per unit of input
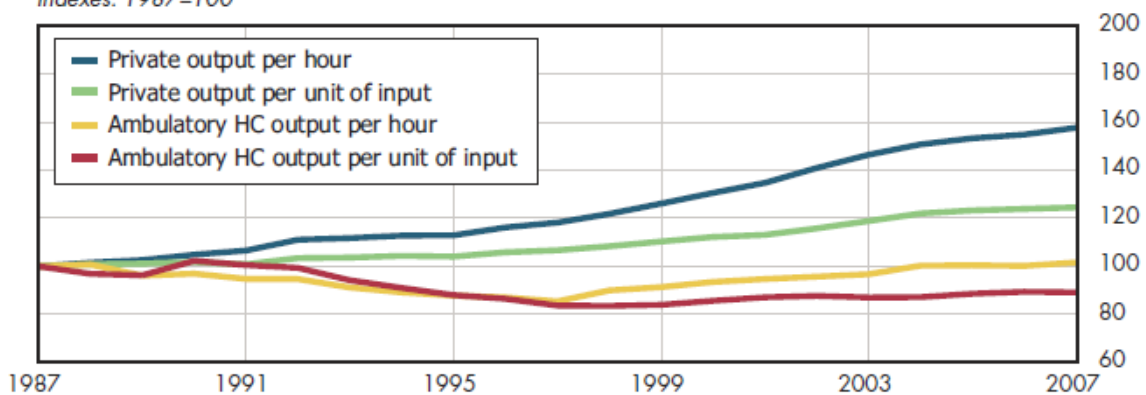
In health facilities, hourly productivity has tended to increase, especially since 1998. However, when capital inputs are taken into account, output per unit of input actually had fallen more by 2007 in health facilities than in ambulatory health care services (figure 9.2b).

9.2b Over 20 years, hourly output of health facilities increased even as productivity per unit of input declined, and then remained relatively flat

Indexes: 1987=100

- Health facilities output per hour
- Health facilities output per unit of input
- Ambulatory HC output per hour
- Ambulatory HC output per unit of input
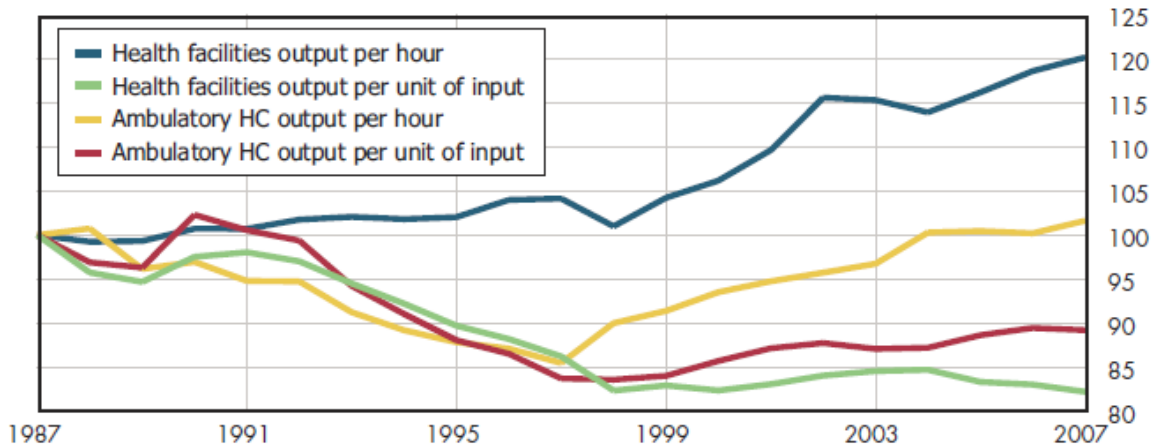
Note: Health facilities = hospitals and nursing and residential care facilities; outpatient = ambulatory health care services.

In the goods-manufacturing portion of the health industry, productivity trends are somewhat like those

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[7]This content is available online at <https://hub.mili.csom.umn.edu/content/m10123/1.2/>.

in the private economy overall. For manufacturers of medical equipment, the growth in hourly productivity and output per unit of input has easily exceeded the average levels experienced in the private sector (figure 9.2c).

9.2c Productivity has increased much faster in the medical device industry than in the pharmaceutical industry, where output per unit of input is decreasing
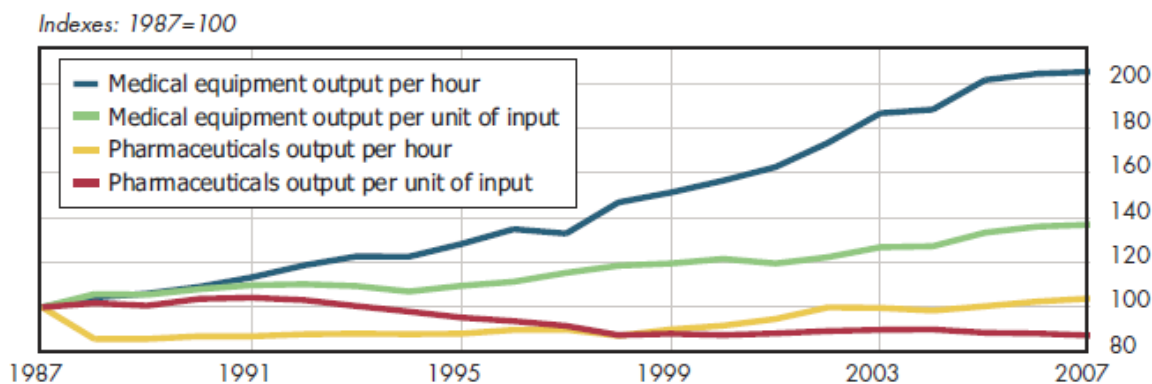
In pharmaceuticals, 2007 output per hour was approximately at the same level as in 1987. However, this combines a sharp drop in productivity in the late 1980s followed by rather steady annual increases thereafter. Pharmaceutical manufacturers saw a slight increase in output per unit of input at the start of this period, with generally falling productivity levels thereafter.

Falling productivity does not connote falling output. Output was increasing in all these health subsectors during this time. Because inputs into production also were increasing either more quickly or at approximately the same rate, productivity growth generally was more anemic in health care than elsewhere in the private economy. However, readers are cautioned that estimates of productivity are highly dependent on accurate price measurement. Accurate estimates of price changes are more challenging for health care than for most other goods and services because for the latter, it is easier to account for changes in quality.

9.2.1 Downloads

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- Figure 9.2b Editable Slide (can be formatted as desired)[11]
- Figure 9.2c Image Slide (as it appears above)[12]
- Figure 9.2c Editable Slide (can be formatted as desired)[13]

Download Excel tables used to create all figures: Figures 9.2a/9.2b/9.2c Tables[14] . Figures 9.2a and 9.2b and 9.2c were all created from the following table (the workbook includes all supporting tables used to create this table):

- Table 9.1. Total Output, Labor Hours, and Combined Inputs for Health Sector, 1987-2009

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[8]https://hub.mili.csom.umn.edu/content/m10123/latest/9.2aIMG.ppt
[9]https://hub.mili.csom.umn.edu/content/m10123/latest/9.2aDATA.ppt
[10]https://hub.mili.csom.umn.edu/content/m10123/latest/9.2bIMG.ppt
[11]https://hub.mili.csom.umn.edu/content/m10123/latest/9.2bDATA.ppt
[12]https://hub.mili.csom.umn.edu/content/m10123/latest/9.2cIMG.ppt
[13]https://hub.mili.csom.umn.edu/content/m10123/latest/9.2cDATA.ppt
[14]https://hub.mili.csom.umn.edu/content/m10123/latest/9.2TAB.xls

9.2.2 References

A. Author's calculations.
B. Department of Labor. Bureau of Labor Statistics.

9.3 9.3 Health Sector Has Better-Educated Workers among Industries[15]

Of those who work in the health industry, 75 percent of men and 50 percent of women have at least a college degree (figure 9.3a). Conversely, compared with the work force in general, a much lower share of health sector workers have less than a high school diploma or have graduated only from high school without any additional schooling. In the general economy, increased education of the work force has been an important source of growth in output. That is, higher levels of education have tended to contribute to productivity growth. Thus, low productivity growth in health care exists despite high levels of worker education.

9.3a For both men and women, education levels are much higher in health services than among employees in other industries

Percentage of workers with education level shown (March 2009)
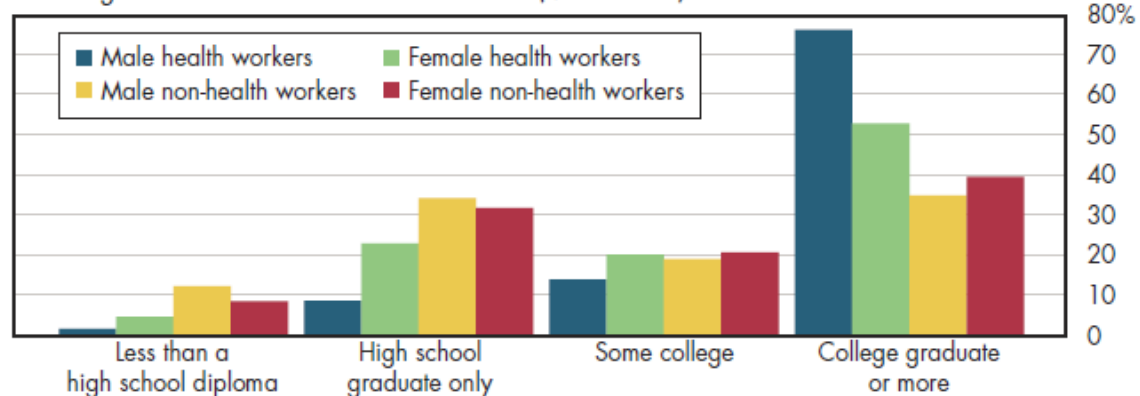
Earnings tend to rise with educational attainment. Compared with males whose highest level of education is a high school diploma, male health workers who have a bachelor's degree have average annual incomes that are twice as high. Males who have advanced degrees earn five times as much as high school graduates (figure 9.3b).

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[15]This content is available online at <https://hub.mili.csom.umn.edu/content/m10124/1.2/>.

9.3b Average earnings for full-time, year-round employees in the health industry generally increase with education

Index: Average earnings for full-time year-round male workers with high school diploma = 100
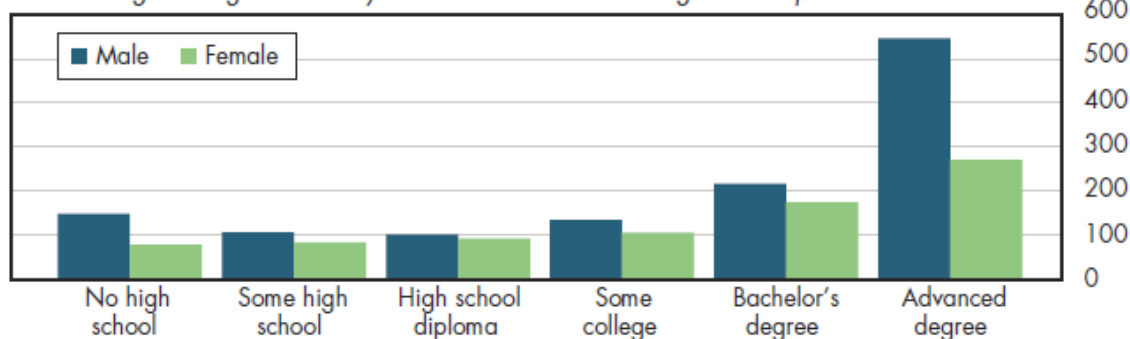
Note: Earnings are for 2008.

Many labor economists believe that individuals who have higher education levels earn more because they produce more. Education brings more skill and knowledge to the individual. A more educated person can perform several different tasks and has greater awareness of other job opportunities. A contrary view maintains that high school diplomas and college degrees are credentials, useful for hiring but not necessarily for measures of what people actually produce on the job, when hired. To an employer, a person who has a degree might seem well motivated and reliable, that is, likelier to have characteristics considered desirable in an employee than an equivalent individual who has no degree. In a heavily regulated industry such as health care, credentialing might have as much to do with professional rent-seeking behavior as it does with higher productivity. It is difficult to isolate a pure "education effect" on output because of the difficulty of measuring personal characteristics and because other attributes, such as experience, are closely related to education.

Whether it reflects lagging productivity or something else, recent growth in health sector earnings has been slower than for other workers (figure 9.3c).

9.3c Recent growth in health sector earnings has been slower than for other employees, except those who have the least education

Annual growth in mean earnings of full-time year-round workers 18 and older, 2003–2009
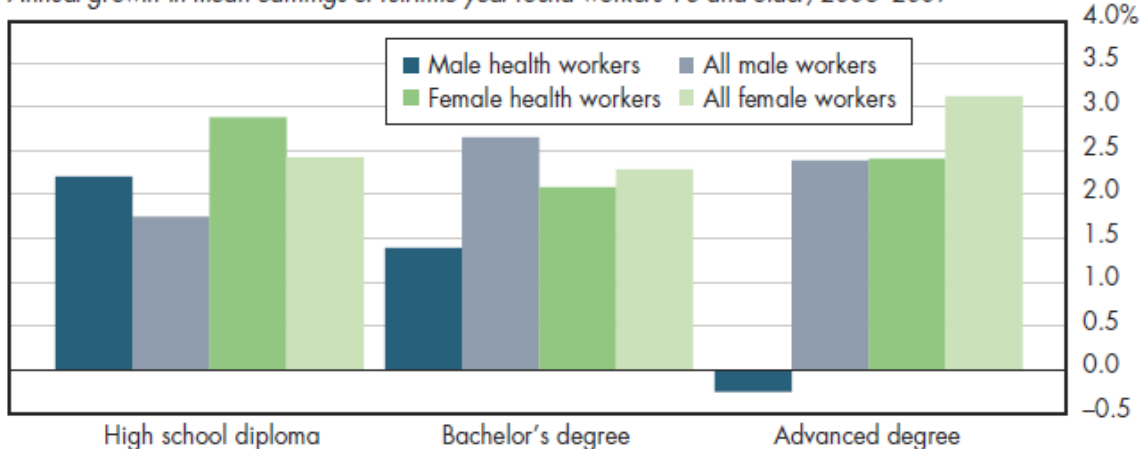
9.3.1 Downloads

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- Figure 9.3b Editable Slide (can be formatted as desired)[19]
- Figure 9.3c Image Slide (as it appears above)[20]
- Figure 9.3c Editable Slide (can be formatted as desired)[21]

Download Excel workbooks used to create Figure 9.3a Table[22] , Figure 9.3b Table[23] , and Figure 9.3c Table[24] . [Note that you'd have separate links for each set of tables] Figures 9.3a, 9.3b, and 9.3c were created from the following tables (the workbook includes all supporting tables used to create these tables):

- Fig. 9.3a: Table 9.3.1. Percentage of Civilian Labor Force Aged Twenty-Five to Sixty-Four, by Educational Attainment, 2009
- Fig. 9.3b: Table 9.3.2. Mean Incomes of Workers 18 and Older Who Work Full-Time Year-Round in Health Industry, by Educational Attainment, 2009
- Fig. 9.3c: Table 9.3.3. Annual Growth in the Mean Income of Men 18 and Older Who Work Full-time Year-Round in Health Industry, by Educational Attainment, 2003-2009

9.3.2 References

A. Department of Commerce. Bureau of the Census.

9.4 9.4 Information Capital Stock in Health Services, 1987-2007[25]

Information capital stock in the health services sector has approximately quadrupled in the 20 years since 1987 (figure 9.4a). Such capital stock includes computers, software, and communications equipment. It also includes traditional office equipment. As with many other data series presented up to this point, this one is restricted to ambulatory health services and health facilities. The picture might well be different were parallel numbers available for pharmaceutical and medical device manufacturing.

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[16]https://hub.mili.csom.umn.edu/content/m10124/latest/9.3aIMG.ppt
[17]https://hub.mili.csom.umn.edu/content/m10124/latest/9.3aDATA.ppt
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[19]https://hub.mili.csom.umn.edu/content/m10124/latest/9.3bDATA.ppt
[20]https://hub.mili.csom.umn.edu/content/m10124/latest/9.3cIMG.ppt
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[22]https://hub.mili.csom.umn.edu/content/m10124/latest/9.3aTAB.xls
[23]https://hub.mili.csom.umn.edu/content/m10124/latest/9.3bTAB.xls
[24]https://hub.mili.csom.umn.edu/content/m10124/latest/9.3cTAB.xls
[25]This content is available online at <https://hub.mili.csom.umn.edu/content/m10125/1.3/>.

9.4a Information capital stock in the health services sector has quadrupled during the past 20 years

Billions of 2000 dollars
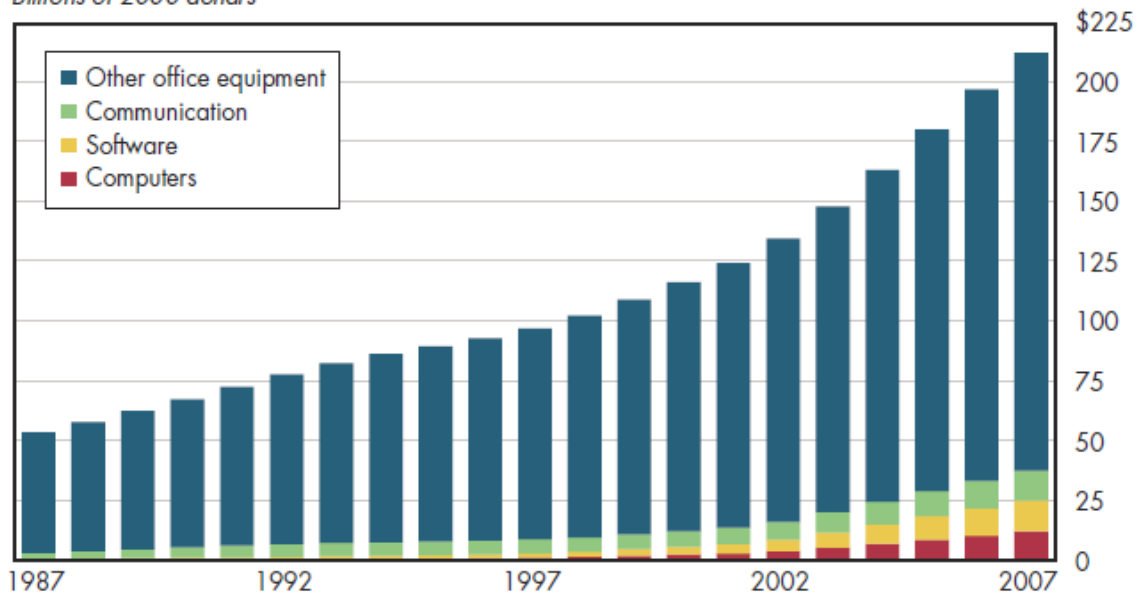
Note: All growth rates calculated through the end of the last year shown in each interval. Health services includes private sector ambulatory health services, hospitals, nursing and residential care facilities. It does not include pharmaceuticals, medical devices, health insurance, or government hospital workers. However, *other office equipment* includes medical and non-medical instruments used in the health services subsector.

More important, in the health sector, the BLS also includes medical instruments, whether as small as a pair of surgical clamps or as large as a PET scanner. With the huge growth in medical equipment (the industry's output more than doubled from 1987-2008), this large increase in information capital for medical services might not be that surprising. Indeed, excluding the "other office equipment" category, the total amount of information stock held in the form of computers, software, and communications equipment is less than $40 billion. This is 10 times the inflation-adjusted level of spending reported in 1987 but amounts to less than four cents per dollar of annual health services industry output.

A better metric compares real information capital to labor hours, because these too have grown since 1987. In the private sector overall, real information capital per hour quadrupled over the subsequent 20 years (figure 9.4b). For much of this period, the same metric for health facilities grew practically in lockstep with private business. After 2003, real information capital per labor hour grew somewhat faster in health facilities than in the rest of private industry. The growth rate for health facilities was almost triple the increase seen in the ambulatory health services industry.

9.4b Since 1987, real information capital per hour in health facilities grew almost three times as fast as in ambulatory health care services
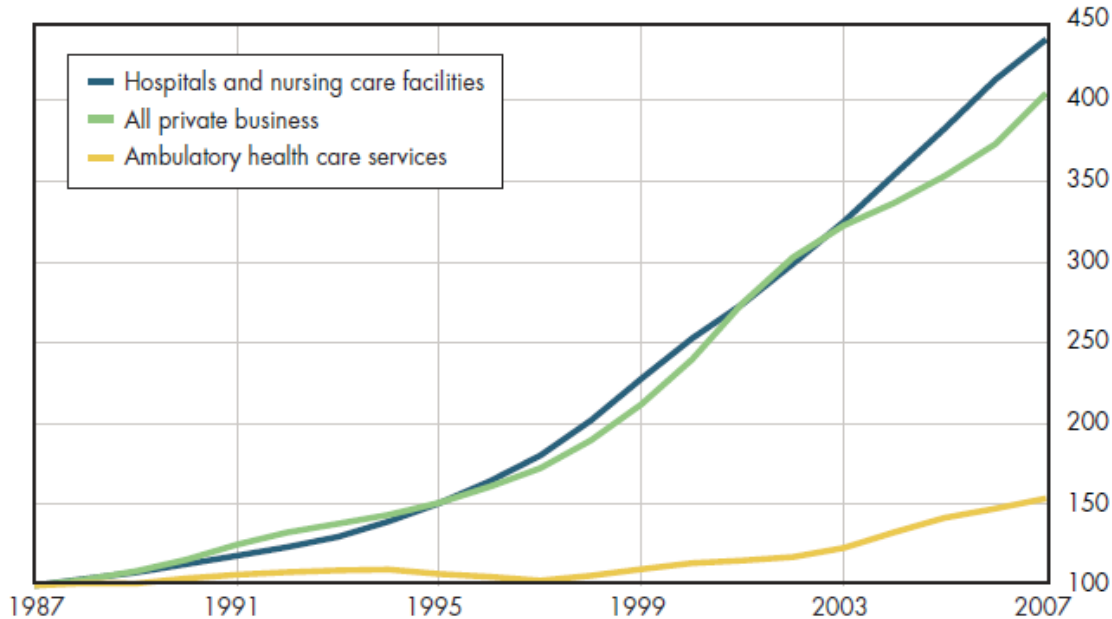
Selected provisions of health reform are intended to stimulate greater investments in electronic medical records and other forms of health information technology. How much such infusions of new information capital will affect the relative growth trends shown is unclear. That is, this will increase the aggregate amount of information capital. But some of this might be labor-saving. So, the rate of growth in real information capital per hour might be slower or faster than in recent decades, depending on the extent to which capital substitutes for labor.

9.4.1 Downloads

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- Fig. 9.4a: Table 9.4.1. Information Capital Stock, Private Health Care Services, 1987-2007
- Fig. 9.4b: Table 9.4.2. Information Capital per Labor Hour, Private Health Care Services and All Private Business, 1987-2007

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[26]https://hub.mili.csom.umn.edu/content/m10125/latest/9.4aIMG.ppt
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[29]https://hub.mili.csom.umn.edu/content/m10125/latest/9.4bDATA.ppt
[30]https://hub.mili.csom.umn.edu/content/m10125/latest/9.4aTAB.xls
[31]https://hub.mili.csom.umn.edu/content/m10125/latest/9.4bTAB.xls

9.4.2 References

A. Department of Labor. Bureau of Labor Statistics.

9.5 9.5 R&D Has Contributed to Increase in Health Sector Productivity[32]

Relative investments in R&D appear to be less in the health sector than in private business overall. By one traditional measure—the ratio of R&D capital to productive capital stock—R&D investments are approximately five times as large in the private sector as in the health services industry (figure 9.5a). Ignoring details of measurement, productive capital stocks simply are a way of measuring the total amount of capital available at any given time, accounting for the fact that all other things being equal, new capital is more productive than old capital.

9.5a The ratio of R&D capital to productive capital stock is approximately five times as high in private business as in health services

Net stock of R&D capital per $1,000 of productive capital stocks
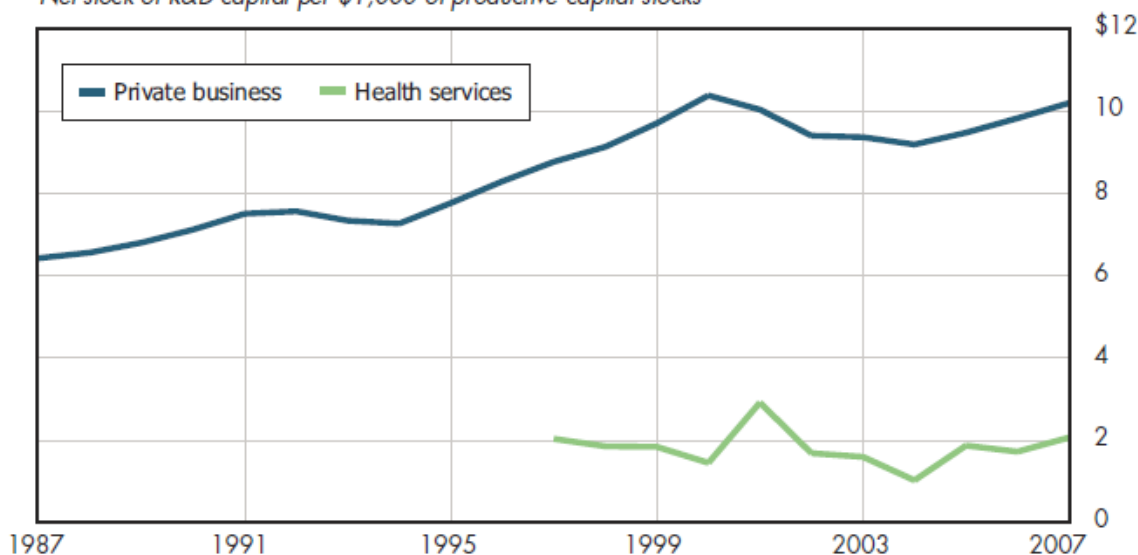
Note: All growth rates calculated through the end of the last year shown in each interval. Health services includes private sector ambulatory health services, hospitals, nursing and residential care facilities. It does not include pharmaceuticals, medical devices, health insurance, or government hospital workers. The data for health services did not begin until 1997.

By some measures, growth in capital stock is higher in some health-related industries than in the general economy. Unless R&D investments also increased at a similarly accelerated rate, the ratio of R&D to capital stocks would tend to decline even if investments in R&D were growing at identical rates in health care compared with the general economy.

Thus, a more "neutral" comparison would be to measure R&D relative to total output. When done, the health sector looks much more comparable to the general economy (figure 9.5b). There have been periods such as 1960-1979 in which relative R&D investments have been higher in health care. However, using this same measure, the current level of R&D in the overall economy is approximately 50 percent higher than in health care.

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[32]This content is available online at <https://hub.mili.csom.umn.edu/content/m10126/1.2/>.

9.5b The ratio of R&D capital to GDP is higher than the ratio of health care R&D to NHE; the opposite was true from 1960 to 1979

Net stock of R&D capital per $1,000 of GDP or NHE
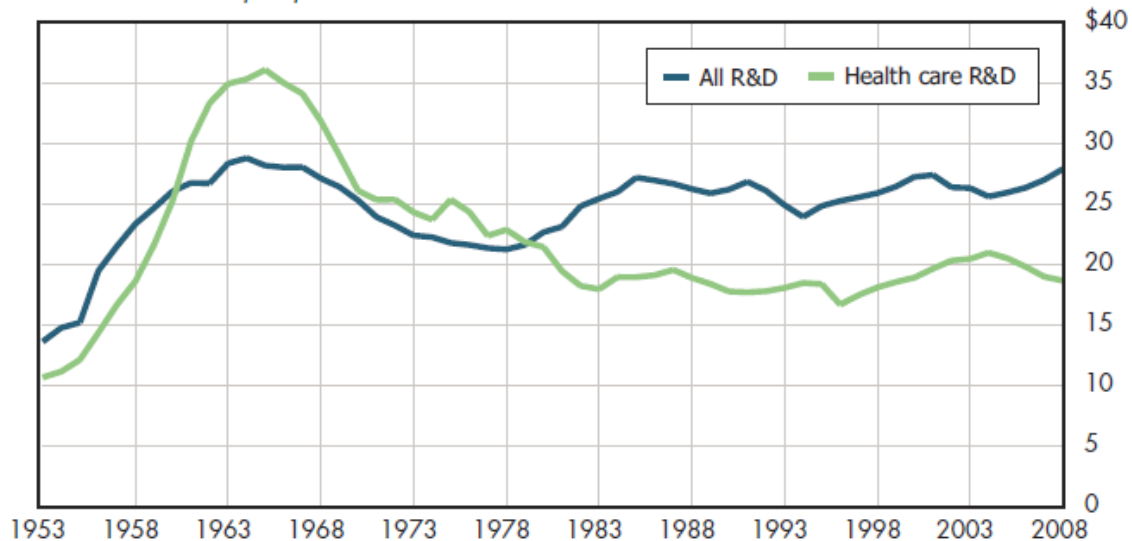
Note: R&D expenditures include both private and public sector spending, regardless of where the R&D was actually conducted.

   Neither of these measures proves that the health sector invests "too little" in R&D. First, they are only approximate measures. Second, the measure that compares R&D to productive stocks is limited to one component of the health industry, leaving out the subsector—pharmaceuticals—that arguably is the most important from an R&D perspective. Finally, whether an investment in R&D makes sense in any industry depends on the technological opportunity set available at that time. The expected rate of return to such investments often can depend on advances in basic science (for example, nanotechnology) that are beyond the control of any given industry. As long as there are differences in such rates of return, disparities in the rate of R&D investment are unavoidable.

9.5.1 Downloads

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- Figure 9.5a Image Slide (as it appears above)[33]
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- Figure 9.5b Editable Slide (can be formatted as desired)[36]

   Download Excel tables used to create both figures: Figures 9.5a/9.5b Tables[37] . Figures 9.5a and 9.5b both were created from the following table (the workbook includes all supporting tables used to create this table):

- Table 9.5.1. Net Stock of R&D Capital Compared with Productive Capital Stocks of Private Health Care Business, 1987-2008

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[33]https://hub.mili.csom.umn.edu/content/m10126/latest/9.5aIMG.ppt
[34]https://hub.mili.csom.umn.edu/content/m10126/latest/9.5aDATA.ppt
[35]https://hub.mili.csom.umn.edu/content/m10126/latest/9.5bIMG.ppt
[36]https://hub.mili.csom.umn.edu/content/m10126/latest/9.5bDATA.ppt
[37]https://hub.mili.csom.umn.edu/content/m10126/latest/9.5TAB.xls

9.5.2 References

A. Author's calculations.
B. National Science Foundation.

9.6 9.6 Increase in Health Spending Explained 80% of Decline in Personal Savings[38]

For at least 25 years, rising health expenditures generally have been matched by a parallel decline in the personal savings rate (figure 9.6a). Capital stocks are the accumulation of investment flows, the financing of which depends on savings. Total savings for the nation encompass private savings, government savings, and foreign investment.

9.6a The shares of income for personal health care and personal savings increased before 1982, but savings generally declined thereafter

Percentage of disposable personal income
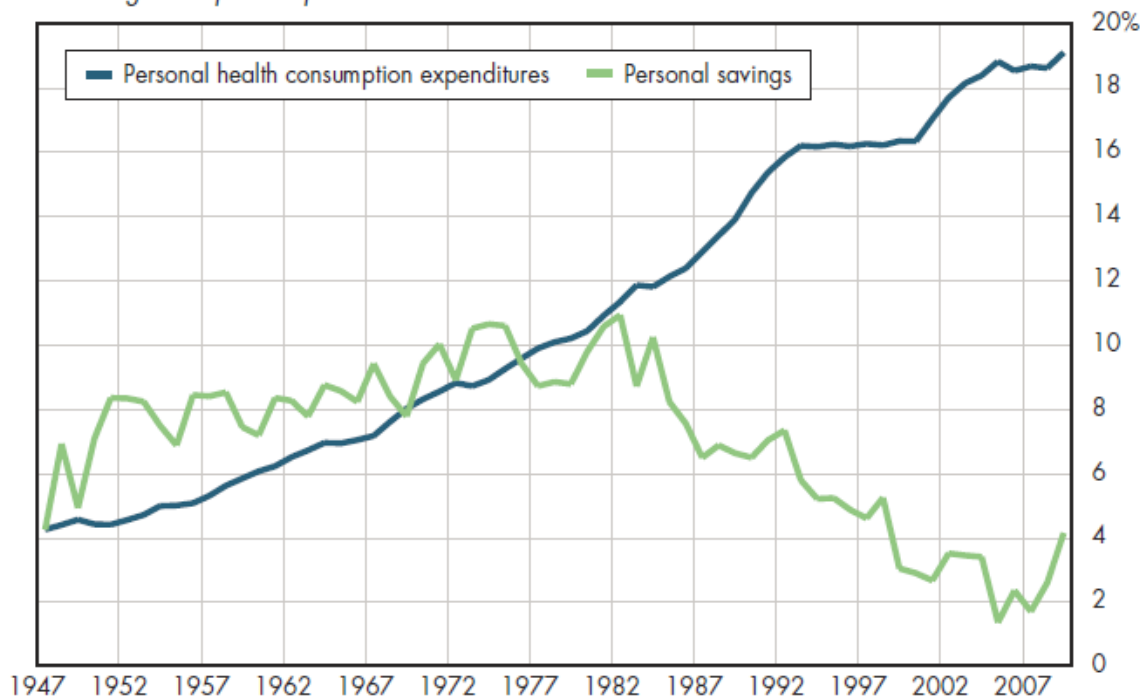
Measured relative to disposable (post-tax) personal income, the personal savings rate generally was on an upward path for 35 years starting in 1947 (figure 9.6a). Taken together, Americans typically saved more than they spent on personal health care during this period. After 1982, there was a sharp reversal in this trend. The savings rate generally declined even as personal health spending continued to rise. Mathematically, the positive slope of the personal health spending line is almost as steep as the negative slope of the personal savings line. Statistically, approximately 80 percent of the variation in the personal savings rate can be explained simply by knowing the share of disposable income allocated to personal health spending.

On average, gross annual saving in the United States is almost identical to its level of national health expenditures. In contrast, the savings rate among the rest of its G7 competitors generally is much more than their spending on health care (figure 9.6b).

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[38]This content is available online at <https://hub.mili.csom.umn.edu/content/m10127/1.2/>.

9.6b Health spending matches gross annual saving in the United States; in most other G7 countries, the national savings rate is much higher than their NHE

Percentage of GDP (2007)
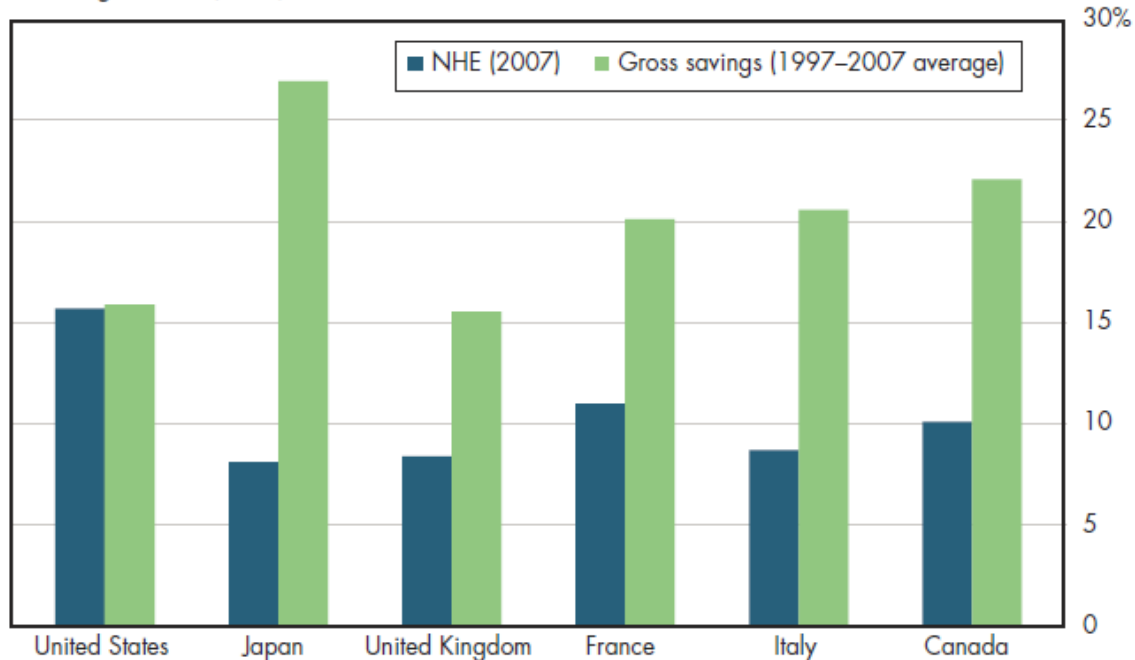
The relationship between savings and health spending is not nearly as tight at the cross-national level as it is within the United States over time. Although the nation that has the lowest share of GDP devoted to health spending also has the highest savings rate (Japan), the nation that has the next-lowest health spending also has a savings rate almost identical to that of the United States (the UK). In terms of comparable purchasing power, U.S. GDP per capita is much higher than among its biggest competitors. To match U.S. savings in real per capita terms would unavoidably require these nations to devote a higher share of GDP to savings.

9.6.1 Downloads

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- Figure 9.6a Image Slide (as it appears above)[39]
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- Figure 9.6b Image Slide (as it appears above)[41]
- Figure 9.6b Editable Slide (can be formatted as desired)[42]

Download Excel workbooks used to create Figure 9.6a Table[43] and Figure 9.6b Table[44] . [Note that you'd have separate links for each set of tables] Figures 9.6a and 9.6b were created from the following tables (the workbook includes all supporting tables used to create these tables):

- Fig. 9.6a: Table 9.6.1. Personal Saving and Personal Health Care Expenditures as a Percentage of Disposable Personal Income, 1947-2009

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[39]https://hub.mili.csom.umn.edu/content/m10127/latest/9.6aIMG.ppt
[40]https://hub.mili.csom.umn.edu/content/m10127/latest/9.6aDATA.ppt
[41]https://hub.mili.csom.umn.edu/content/m10127/latest/9.6bIMG.ppt
[42]https://hub.mili.csom.umn.edu/content/m10127/latest/9.6bDATA.ppt
[43]https://hub.mili.csom.umn.edu/content/m10127/latest/9.6aTAB.xls
[44]https://hub.mili.csom.umn.edu/content/m10127/latest/9.6bTAB.xls

- Fig. 9.6b: Table 9.6.2. Gross National Saving and National Health Expenditures as a Percentage of GDP, Selected Countries, 2007

9.6.2 References

A. Author's calculations.
B. Department of Commerce. Bureau of Economic Analysis.
C. Organisation for Economic Co-operation and Development.

9.7 9.7 Increase in Total Input Has Outpaced Output in Many Parts of Health Sector[45]

For much of the past 20 years, overall productivity growth has been negative for ambulatory health care and health facilities. Only in the last decade has multifactor productivity increased slightly in the ambulatory health services sector (figure 9.7a). Various factors of production such as labor, capital, and even information capital are discussed previously in this chapter. However, other inputs into the production process affect the level of output that is attainable. These include energy, materials, and purchased services (for example, legal services), among others. The various inputs are combined, based on their relative contribution to the cost of production. Thus, the net increase in inputs essentially is a weighted average of changes in all the various factors of production. For example, conceivably, efficiency improvements in the energy sector would result in a net decrease in energy inputs required to produce a unit of health output. Thus, the multifactor measure of inputs would have to combine negative growth in energy inputs with positive increases in other factors of production.

9.7a Multifactor productivity growth has steadily increased in ambulatory care over 20 years but is negative for health facilities

Compound annual rate of change in multifactor productivity

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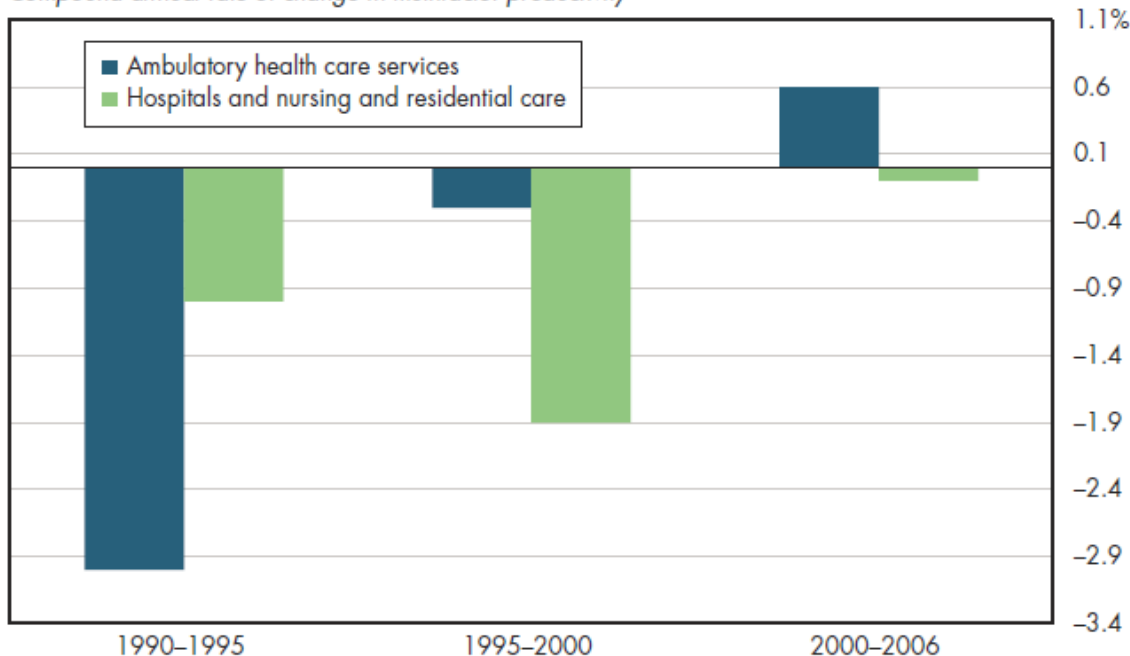
[45]This content is available online at <https://hub.mili.csom.umn.edu/content/m10128/1.3/>.

Viewed from this perspective, multifactor productivity generally has been declining in the pharmaceutical industry during the past 20 years (although this might have reversed itself since 1998). In sharp contrast, multifactor productivity in the medical device industry has grown by more than 30 percent during this period. This productivity outpaced the rate of increase in multifactor productivity in the private sector (figure 9.7b).

9.7b Multifactor productivity has decreased in pharmaceuticals even while increasing in the medical device industry more quickly than in the private sector

Multifactor productivity indexes: 1987=100
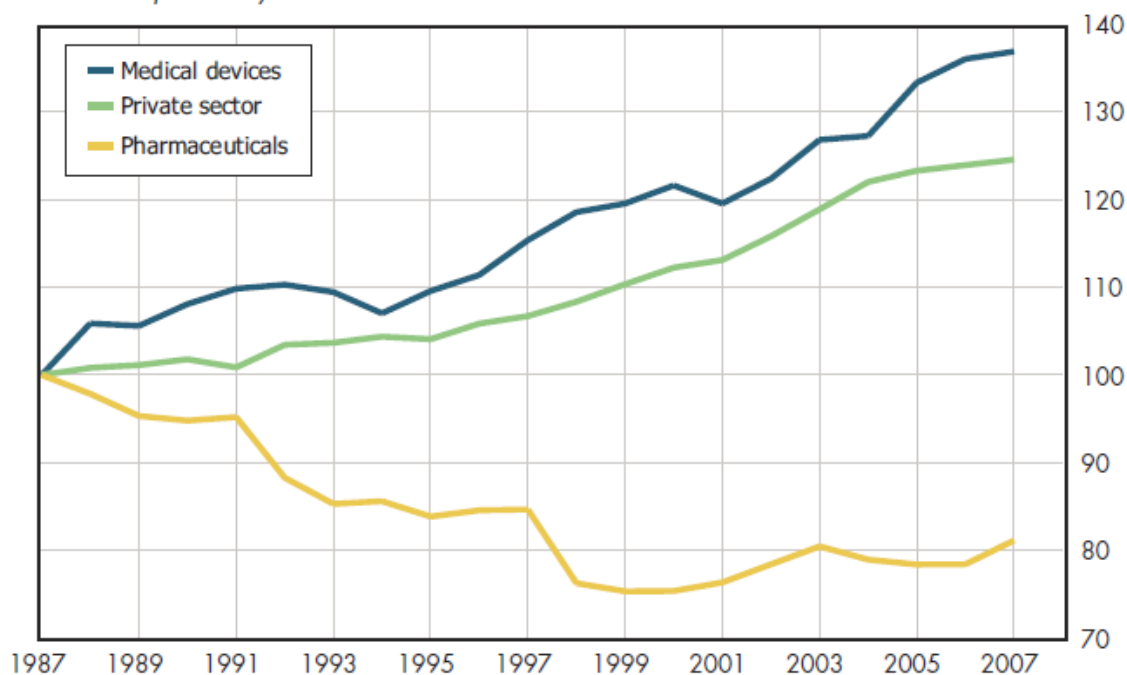
These disparate trends reinforce a general point that should have been increasingly clear as this chapter has evolved. The health industry comprises several subsectors that vary greatly in terms of the relative importance of labor, capital, and other factors of production, but also in terms of the degree that changes in such factors contribute to changes in overall output. The goods-producing portions of health care typically are different from the services-producing health industries. Even within the health services sector, health facilities are different from the components of ambulatory health services in terms of various productivity trends. This makes it difficult to generalize about the health industry as a whole.

9.7.1 Downloads

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- Figure 9.7a Image Slide (as it appears above)[46]
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- Figure 9.7b Editable Slide (can be formatted as desired)[49]

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[46]https://hub.mili.csom.umn.edu/content/m10128/latest/9.7aIMG.ppt
[47]https://hub.mili.csom.umn.edu/content/m10128/latest/9.7aDATA.ppt
[48]https://hub.mili.csom.umn.edu/content/m10128/latest/9.7bIMG.ppt
[49]https://hub.mili.csom.umn.edu/content/m10128/latest/9.7bDATA.ppt

Download Excel workbooks used to create Figure 9.7a Table[50] and Figure 9.7b Table[51] . [Note that you'd have separate links for each set of tables] Figures 9.7a and 9.7b were created from the following tables (the workbook includes all supporting tables used to create these tables):

- Fig. 9.7a: Table 9.7.1. Multifactor Productivity Growth in Health, Legal and Educational Services, Compound Annual Rates of Change, 1987-2006
- Fig. 9.7b: Table 9.7.2. Productivity Trends for Pharma, Medical Devices and Total Private Business, 1987-2007

9.7.2 References

A. Author's calculations.
B. Department of Labor. Bureau of Labor Statistics.
C. Harper MJ, B Khandrika, R Kinoshita and S Rosenthal. Nonmanufacturing industry contributions to multifactor productivity, 1987-2006. Monthly Labor Review 2010; June:16-31.

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[50]https://hub.mili.csom.umn.edu/content/m10128/latest/9.7aTAB.xls
[51]https://hub.mili.csom.umn.edu/content/m10128/latest/9.7bTAB.xls

Chapter 10

Chapter 10: The Labor Force and Employment in the Health Sector

10.1 10.1 Employment Has Increased Faster in Health Services than in the Rest of Economy[1]

In every decade since the 1930s, total health services employment has increased two to three times as fast as the number of workers in the general economy or private business (figure 10.1a). The numbers exclude workers in the goods-producing part of the health industry, along with employment by health insurers. It is uncertain whether inclusion of such workers would appreciably alter the data. Because the general population grows at approximately 1 percent a year, the numbers in figure 10.1a also illustrate the ratio of health services growth to the overall population. In none of those 80 years has health sec- tor growth been less than two percent a year; in the 1970s, the annual increase reached almost seven percent. These general trends are quite consistent with previous information about growth in health care expenditures relative to the economy (refer to figure 1.5a).

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10116/1.2/>.

10.1a For 80 years, growth in health services employment has greatly exceeded the rate of growth in the number of all employees, as well as for all workers in private business

Compound annual growth rate in number of full-time-equivalent (FTE) employees (percent)
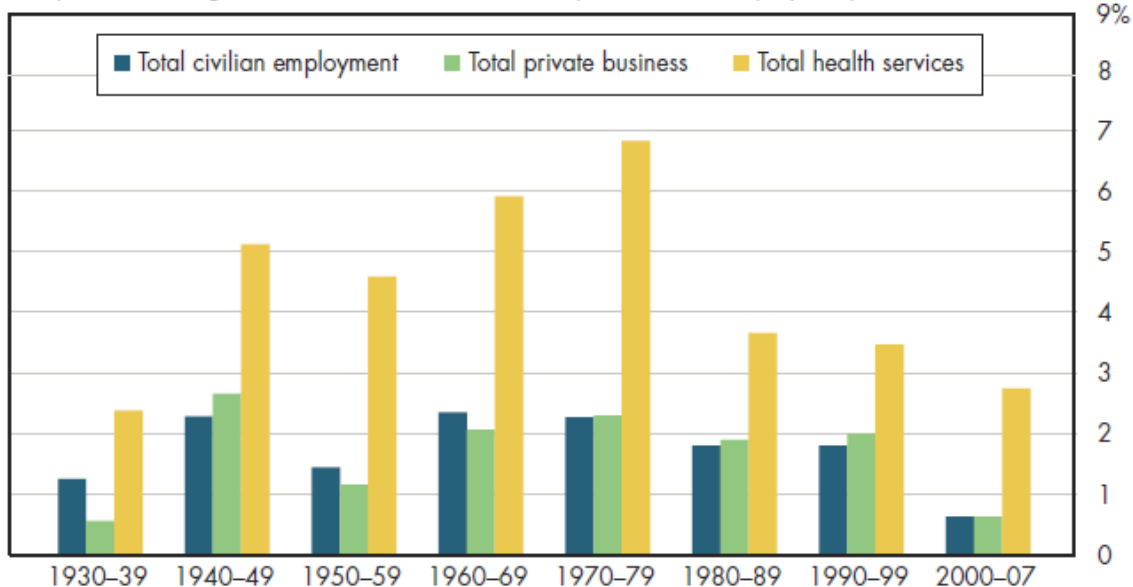
Note: All growth rates calculated through the end of the last year shown in each interval. Health services includes private sector ambulatory health services, hospitals, nursing and residential care facilities. It does not include pharmaceuticals, medical devices, health insurance, or government hospital workers.

In light of the surge in spending that occurred in the aftermath of the arrival of Medicare and Medicaid in the mid-1960s, the extremely high relative growth in health sector employment might not be surprising. However, even in the 1950s, the health sector work force also grew three times as quickly as employment in private businesses overall. The 1980s were characterized by increasing concerns about rising health expenditures; indeed, this became an important issue in the 1992 election and a failed effort at health reform in 1993-94. Conversely, the late 1990s saw a noticeable slowdown in health spending, yet that increase in health industry employment relative to the rest of the economy during that decade was practically the mirror image of the pattern in the 1980s.

Since 2000, growth in health sector employment reached its lowest level since the 1930s in absolute terms. Yet this growth rate nevertheless was triple the rate of increase in both overall civilian employment and private business employment during that period.

Employment consistently has grown faster in ambulatory health services than in health facilities (figure 10.1b). The annual rates of increase for all services except hospitals has declined for each of the snapshots shown in the figure. However, the rate of increase became larger for hospitals, but the absolute rate of increase for hospitals is lower than for ambulatory health services for all years, even 2000-2008. The introduction of Medicaid fueled a nursing home boom that lasted more than a decade.

10.1b Employment growth has steadily become smaller since 1972, except in hospitals, where the employee growth rate increased starting in 2000

Compound annual growth rate in number of total employees (percent)
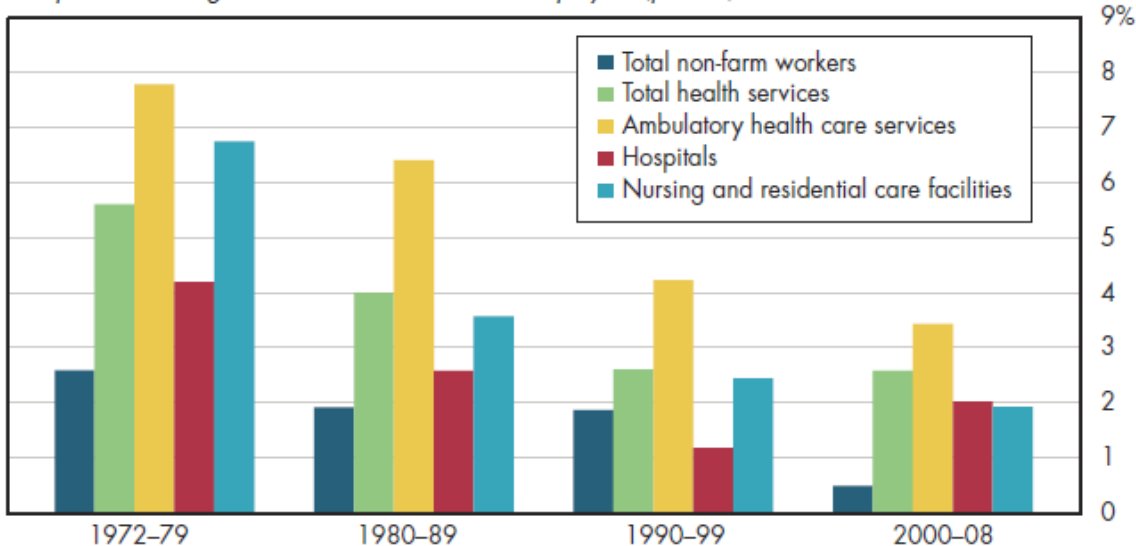
Note: All growth rates calculated through the end of the last year shown in each interval. Health services includes private sector ambulatory health services, hospitals, nursing and residential care facilities. It does not include pharmaceuticals, medical devices, health insurance, or government hospital workers.

10.1.1 Downloads

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Download Excel workbooks used to create Figure 10.1a Table[6] and Figure 10.1b Table[7] . [Note that you'd have separate links for each set of tables] Figures 10.1a and 10.1b were created from the following tables (the workbook includes all supporting tables used to create these tables):

- Fig. 10.1a: Table 10.1.1. Average Annual Growth in Employment for Detailed Components of Health Sector and Total U.S. Employment, by Decade, 1929-2011
- Fig. 10.1b: Table 10.1.2. Average Annual Growth in Employment for Detailed Components of Health Sector and Total U.S. Employment, by Decade, 1970-2008

10.1.2 References

A. Author's calculations.

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[2] https://hub.mili.csom.umn.edu/content/m10116/latest/10.1aIMG.ppt
[3] https://hub.mili.csom.umn.edu/content/m10116/latest/10.1aDATA.ppt
[4] https://hub.mili.csom.umn.edu/content/m10116/latest/10.1bIMG.ppt
[5] https://hub.mili.csom.umn.edu/content/m10116/latest/10.1bDATA.ppt
[6] https://hub.mili.csom.umn.edu/content/m10116/latest/10.1aTAB.xls
[7] https://hub.mili.csom.umn.edu/content/m10116/latest/10.1bTAB.xls

   B. Department of Commerce. Bureau of Economic Analysis.

   C. Department of Labor. Bureau of Labor Statistics.

10.2 10.2 US Share of Health Sector in Employment Is High among Industrialized Countries[8]

The share of civilian employment in the health and social work sector is higher in the United States than in other nations in the G7 (figure 10.2a). Nevertheless, compared with 1995, all these major competitors experienced, along with the United States, an increase in health sector employment relative to all civilian workers. It is worth noting that in the three OECD countries most comparable to the United States in terms of standardized per capita health expenditures (Norway, Switzerland, and the Nether- lands), health employment exceeds 11.5 percent of total employment; in Norway it equals 20 percent. The U.S. level is assuredly not the highest in the world.

10.2a Employment in the health and social work sector has a higher share of total civilian employment in the United States than in other G7 nations

Health and social work sector employment as a percentage of total civilian employment
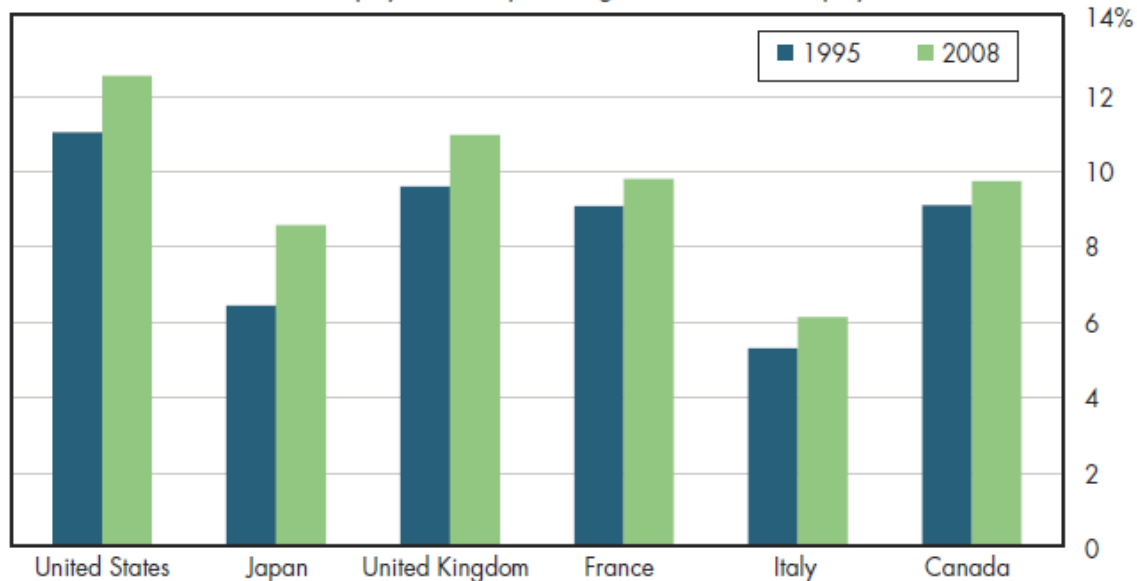
Note: Health and social work includes human health activities, veterinary activities, and social work activities. For the United States and Japan, the 1995 figure is imputed from 2003, which is the earliest year with data reported for this measure. In France, data refer to employees only (excluding the self-employed). This underestimates by about 10 percent the total number of people employed in health and social services.

   These data have three limitations. First, they combine health sector workers with veterinary workers and those doing other types of social work services. In the United States, "social assistance" makes up approximately 15 percent of the total for health services and social assistance. This is a catch-all category for various services: emergency and other relief, vocational rehabilitation, child day care, and other individual or family services. Unfortunately, data do not show whether this 15 percent share is similar in other G7 countries (a higher share would make the differences between the United States and other nations even more than shown). Second, reporting gaps for the United States, Japan, and France preclude an exact comparison

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[8]This content is available online at <https://hub.mili.csom.umn.edu/content/m10117/1.1/>.

of numbers, especially for 1995 (figure 10.2a note). Finally, the data shown are self-reported estimates from population surveys. In the United States, such self-reporting for health care is one-seventh higher than are more precise counts obtained through detailed employer surveys.

These limitations inhibit our ability to get precise cross-sectional comparisons between the United States and other nations. Nevertheless, it is possible to compare how employment in this health sector and social work aggregate grew relative to civilian employment overall in each country. In the United States, health sector and social work employment grew 1 percent a year faster than did civilian employment (figure 10.2b). This was much slower than in Japan and the same as the experience in the UK and Italy, but the U.S. increase was approximately double the added growth rate in health workers in France and Canada, relative to the whole work force.

10.2b U.S. growth in health sector employment relative to total employment has been approximately the same as in the other G7 countries

Compound annual growth rate (CAGR) in number of health/social work employees minus CAGR in number of all civilian workers, 1995–2008
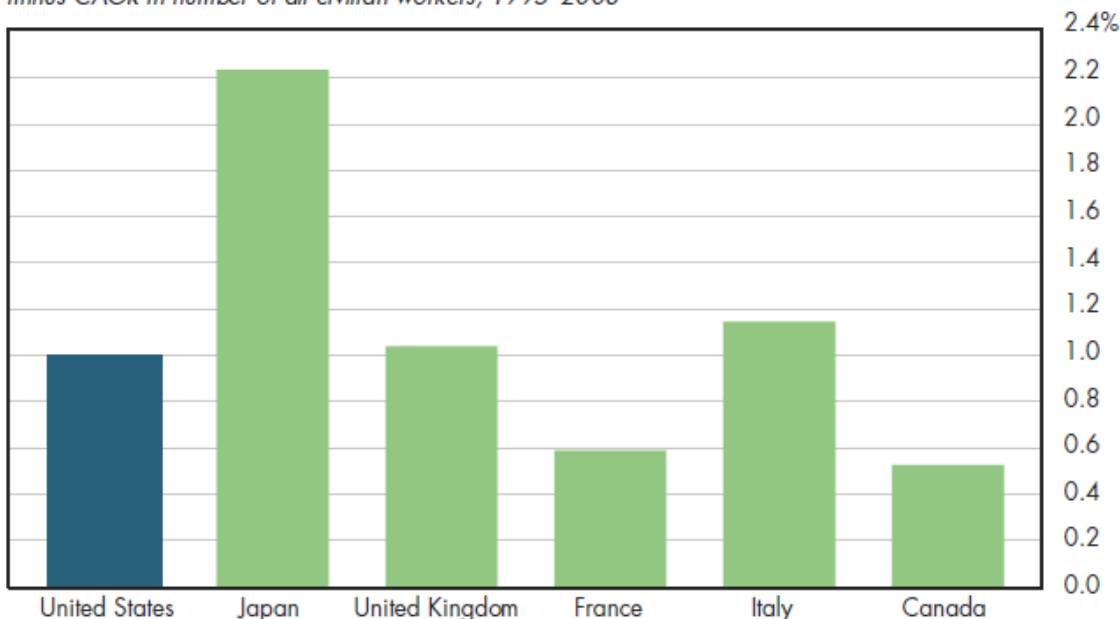
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- Figure 10.2b Editable Slide (can be formatted as desired)[12]

10.2.2 References

A. Author's calculations.

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[9]https://hub.mili.csom.umn.edu/content/m10117/latest/10.2aIMG.ppt
[10]https://hub.mili.csom.umn.edu/content/m10117/latest/10.2aDATA.ppt
[11]https://hub.mili.csom.umn.edu/content/m10117/latest/10.2bIMG.ppt
[12]https://hub.mili.csom.umn.edu/content/m10117/latest/10.2bDATA.ppt

B. Organisation for Economic Co-operation and Development.

10.3 10.3 The Opportunity Cost of Health Sector Employment in US and Other G7 Counties[13]

Health expenditures are not a good measure of whether the burden of medical care is more or less in the United States, compared with its major competitors. If markets are less competitive in health care due to regulation or other forces, this will result in higher prices. Thus, for each unit of resources used (for example, an hour of labor), spending might be more in medical care than if the identical resource were used elsewhere in the economy. Briefly, spending might be much more than costs.

However, because higher prices result in income to someone (for example, doctors, drug company shareholders), decreasing the medical prices might change the distribution income in the economy. Nevertheless, it will not make Americans better off in the aggregate (every dollar of income "won" by buyers would be matched by a corresponding loss by the sellers of medical services).

Two methods provide an approximate measure of the opportunity cost of health services labor across countries. One approach calculates the percentage of the population employed in health care. This method assumes that the cost to any economy of diverting a worker into the health care sector is approximated by GDP per worker in that economy. However, this would be a poor approximation for doctors, whose value to the economy presumably would be much higher than average GDP per employee even if they were employed elsewhere. Taking this into account — by weighting employment by the average ratio of doctor compensation to nurse compensation in the countries shown in figure 10.3a — the U.S. share of employment is higher than in its competitors, but not by much.

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[13]This content is available online at <https://hub.mili.csom.umn.edu/content/m10118/1.2/>.

10.3a The opportunity cost for health employees is only slightly more in the United States than in the rest of the G7

Weighted health employment as percentage of total (2006)
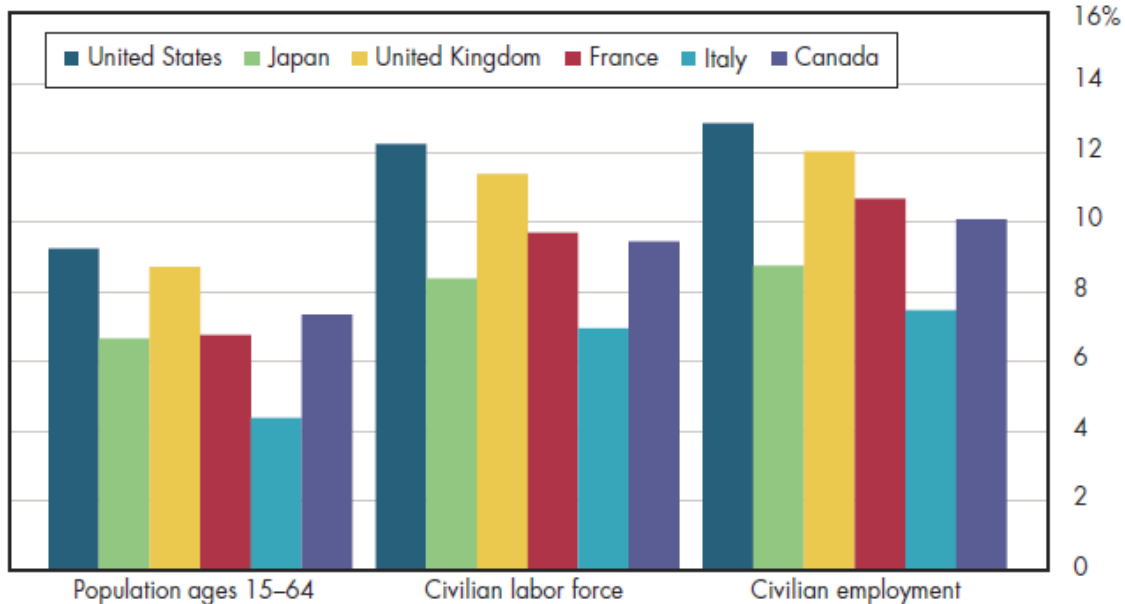
Note: Weighted figures are calculated by multiplying the number of general practitioners, specialists, and all other doctors times their respective salary ratios (see below) and adding this to the total number of non-physician health sector employees. The salary ratios were calculated as the average ratio of compensation for doctors relative to nurses for nine countries (six shown plus the three more with the highest level of health spending per capita: The Netherlands, Norway, and Switzerland). The ratios were: 1.8 for GPs, 2.8 for specialists, and 3.0 for all other MDs.

Another approach assumes that the opportunity cost of health workers is the same elsewhere as in the United States. When applying U.S. prices to the number of physicians, nurses, and other workers, the opportunity cost of medical labor is lower in the United States than in any of its major competitors (figure 10.3b). That is, after accounting for the higher prices paid for medical labor in the United States, the level of potential output these nations give up to produce health care is greater than in the United States.

10.3b When U.S. prices are applied to health sector employment, the United States has a lower relative share of GDP spent for doctors and nurses

Standardized spending on medical labor (U.S. prices) as percentage of GDP (2006)
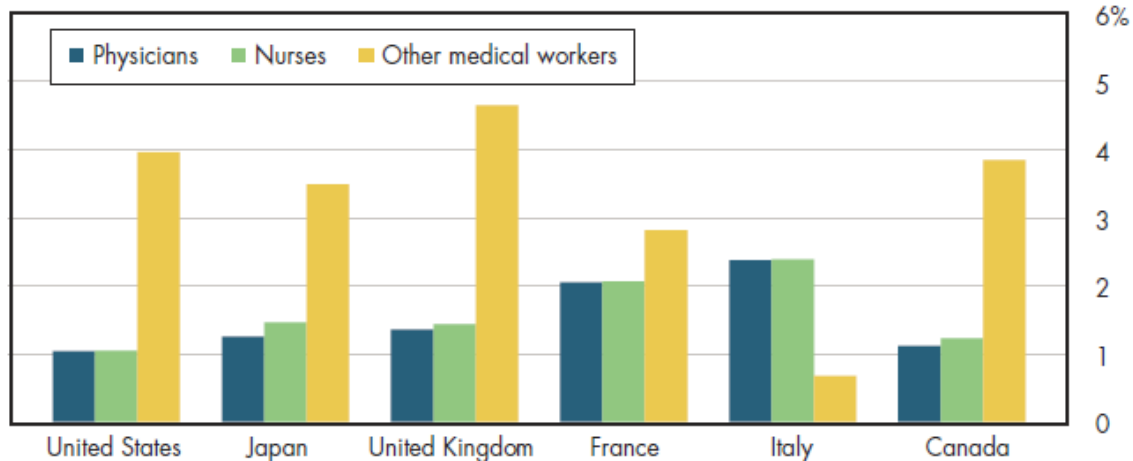
Note: Standardized spending is calculated using U.S. levels of compensation for general practitioners, MD specialists, and nurses (both standardized spending and GDP measured in 2006 U.S. dollars, purchasing power parity).

Neither of these exactly measures U.S. comparative performance. However, the truth is likely to fall somewhere in between these estimates.

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Download Excel tables used to create Figures 10.3a/10.3b Tables[18] . Figures 10.3a and 10.3b were created from the following tables (the workbook includes all supporting tables used to create this table):

- Fig. 10.3a: Table 10.3.1. Total Weighted Health Employment as a Percentage of Population in Selected Industrialized Countries, 2006
- Fig. 10.3b: Table 10.3.2. Standardized Expenditures on Medical Care Labor, as a Percentage of GDP in Selected Industrialized Countries, 2006

References

- A. Author's calculations.
- B. Organisation for Economic Co-operation and Development.
- C. Pauly MV. U.S. Health Care Costs: The Untold True Story. Health Affairs 1993;12(3):152-59.

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[14]https://hub.mili.csom.umn.edu/content/m10118/latest/10.3aIMG.ppt
[15]https://hub.mili.csom.umn.edu/content/m10118/latest/10.3aDATA.ppt
[16]https://hub.mili.csom.umn.edu/content/m10118/latest/10.3bIMG.ppt
[17]https://hub.mili.csom.umn.edu/content/m10118/latest/10.3bDATA.ppt
[18]https://hub.mili.csom.umn.edu/content/m10118/latest/10.3TAB.xls

10.4 10.4 Share of Female Employees in Health Sector[19]

Although females make up fewer than half of all civilian workers, they comprise more than 75 percent of workers in the health sector (figure 10.4a). This share varies dramatically across different components of the health industry. In the goods-producing part of the industry—manufacturing of pharmaceuticals, medical equipment, and supplies (which together make up only 6.5 percent of health sector employment)— the female share is slightly less than among all civilian workers.

10.4a Females account for more than 75 percent of health sector employees compared with fewer than half of civilian employment overall

Female percentage of employment (2009)
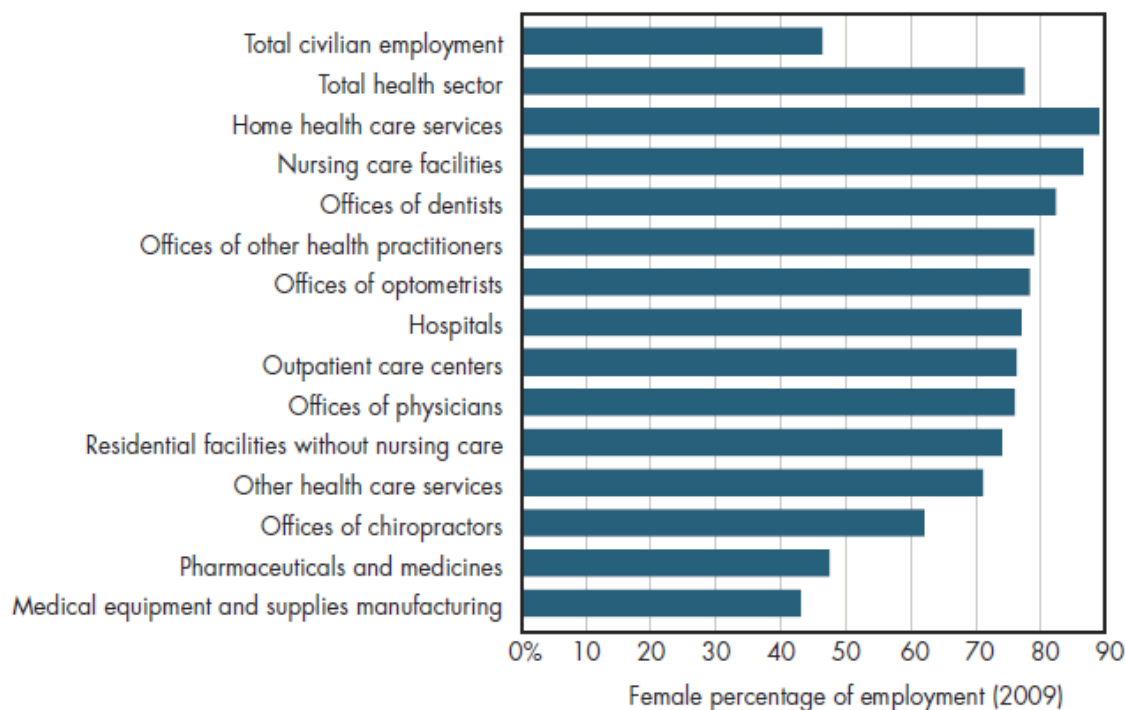
In the services part of health care, the share of female workers is dramatically higher. In home health care, nine of 10 workers are women. In nursing-care facilities, seven of eight workers are female (although in residential facilities that do not provide skilled nursing care, the female share is less than 75 percent). Most ambulatory health services have a workforce in which women make up 75 percent of employees. Hospital workers have approximately the same share of female workers.

The differences in share of females are even wider at the individual occupational level. Women make up 88 percent of health care support occupations such as nursing and home health aides, compared with fewer than 75 percent of workers in health care practitioner and technical occupations. In the five health-related occupations that have the highest share of females, women make up more than 90 percent of employees (figure 10.4b). Also shown are registered nurses (RNs), who make up the single largest occupation in health care, almost 90 percent of whom are female.

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[19]This content is available online at <https://hub.mili.csom.umn.edu/content/m10119/1.3/>.

10.4b Females tend to be concentrated more in health care support occupations than in health care practitioner or technical occupations

Female percentage of employment (2008)
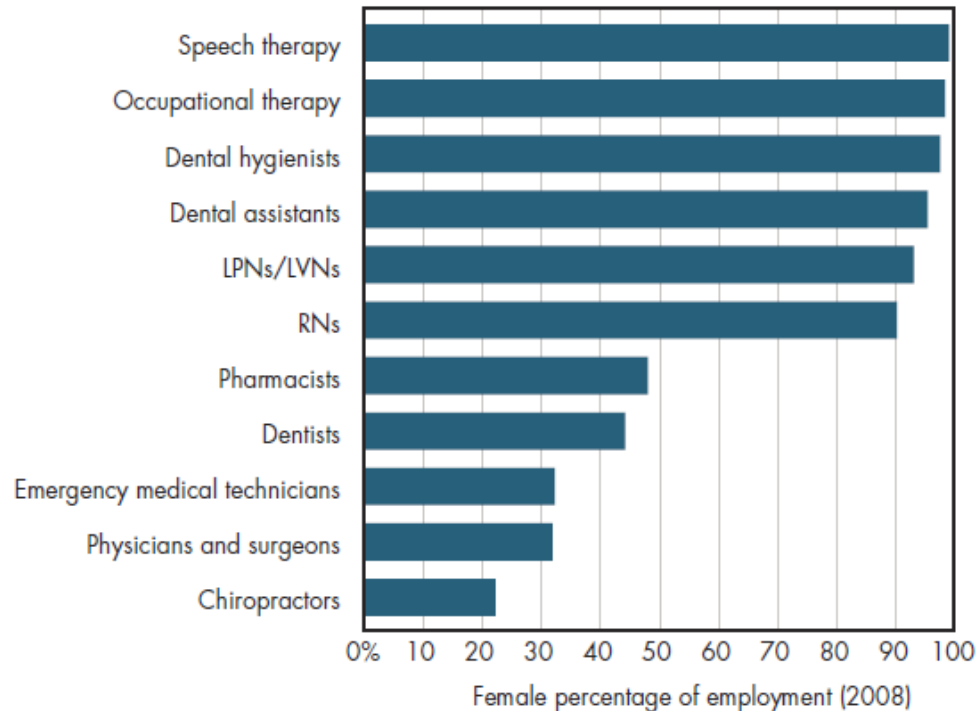
Note: LPN = licensed practical nurse; LVN = licensed vocational nurse; RN = registered nurse.

The five occupations in which women are least represented include four that require doctoral training; these include chiropractors (22 percent), physicians and surgeons (32 percent), dentists (44 percent), and pharmacists (48 percent). Although some pharmacists have only bachelor's degrees, all newly minted pharmacists now must have a doctorate. However, these numbers are gradually changing. Currently, females comprise half of all medical students; chiropractics is also seeing an increase in the female share of graduates.

10.4.1 Downloads

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- Figure 10.4a Image Slide (as it appears above)[20]
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[20]https://hub.mili.csom.umn.edu/content/m10119/latest/10.4aIMG.ppt
[21]https://hub.mili.csom.umn.edu/content/m10119/latest/10.4aDATA.ppt
[22]https://hub.mili.csom.umn.edu/content/m10119/latest/10.4bIMG.ppt
[23]https://hub.mili.csom.umn.edu/content/m10119/latest/10.4bDATA.ppt
[24]https://hub.mili.csom.umn.edu/content/m10119/latest/10.4aTAB.xls
[25]https://hub.mili.csom.umn.edu/content/m10119/latest/10.4bTAB.xls

- Fig. 10.4a: Table 10.4.1 Female Percentage of All Employees by Health Sub-Sector and Total Civilian Employment, 2007, 2009 and 2010
- Fig. 10.4b: Table 10.4.2. Female Percentage of All Employees by Health Sub-Sector and Total Civilian Employment, 2008

10.4.2 References

A. Author's calculations.
B. Department of Labor. Bureau of Labor Statistics.

10.5 10.5 Health Service Employees Work for Less Hours than Employees in General[26]

The average health care worker spends fewer hours a year working than do employees in private business or all civilian workers (the latter includes government employees). This statement is valid regardless of whether hours per worker or average annual hours per full-time equivalent (FTE) worker are counted (figure 10.5a). Within the health services industry, hospital workers have the longest work-years, followed by ambulatory health care services employees and those in nursing and residential care facilities. These respective differences are less than the difference in hours worked in health care compared with the total economy.

10.5a Across the health services industry, annual hours per employee are shorter than in private business or the general economy

Average annual work hours per employee (2009)
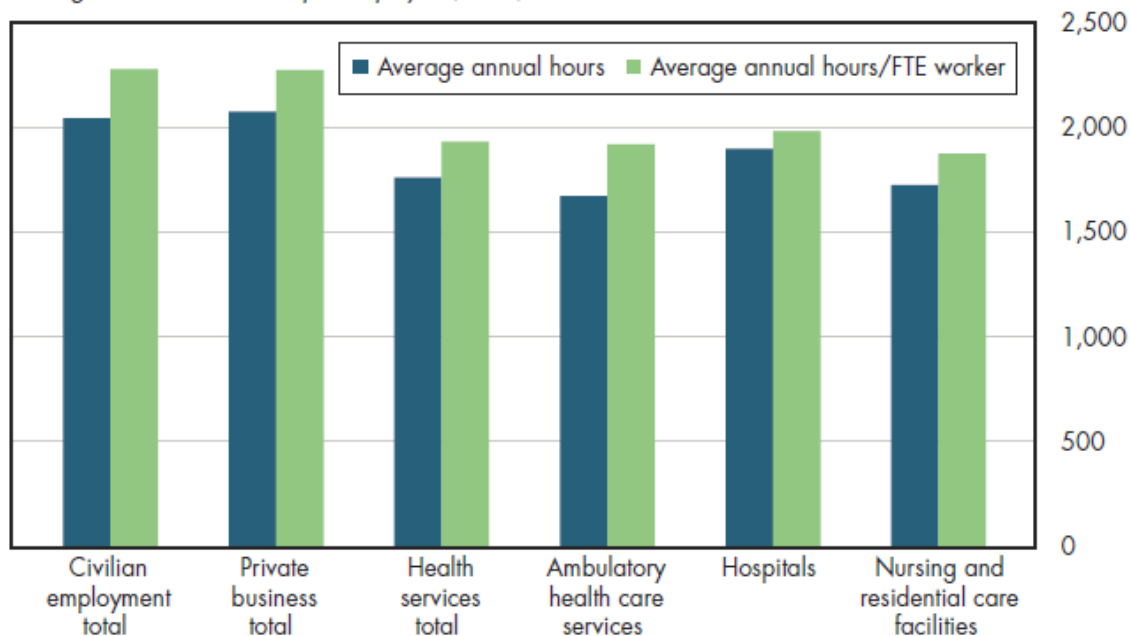
Annual hours worked in the goods-producing part of the health sector, including manufacture of pharmaceuticals and medical equipment, are much more than in the general economy. In pharmaceuticals, the length of the work-year peaked in 2002 but has declined subsequently, even though the total number of

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[26]This content is available online at <https://hub.mili.csom.umn.edu/content/m10120/1.3/>.

employees in the industry continues to grow (except for the years 2008 and 2009, which reflects the economic slow-down).

In the hospital industry, the work-year has generally increased since 1987, but hospital employees also saw a sharp increase in their annual hours starting in 2002 (figure 10.5b). This increase likewise occurred despite rising numbers of hospital employees. Changes in the length of the work-year have been more modest in ambulatory health care services, and nursing and residential care facilities. Since the start of the 21st century, there has been a general, modest decline in the length of the work- year among employees of nursing homes. In contrast, the length of the work-year generally has risen in the ambulatory care sector for approximately 20 years.

10.5b Annual hours per employee have declined in long-term care facilities during the past decade but have generally risen in hospitals

Average annual work hours per employee
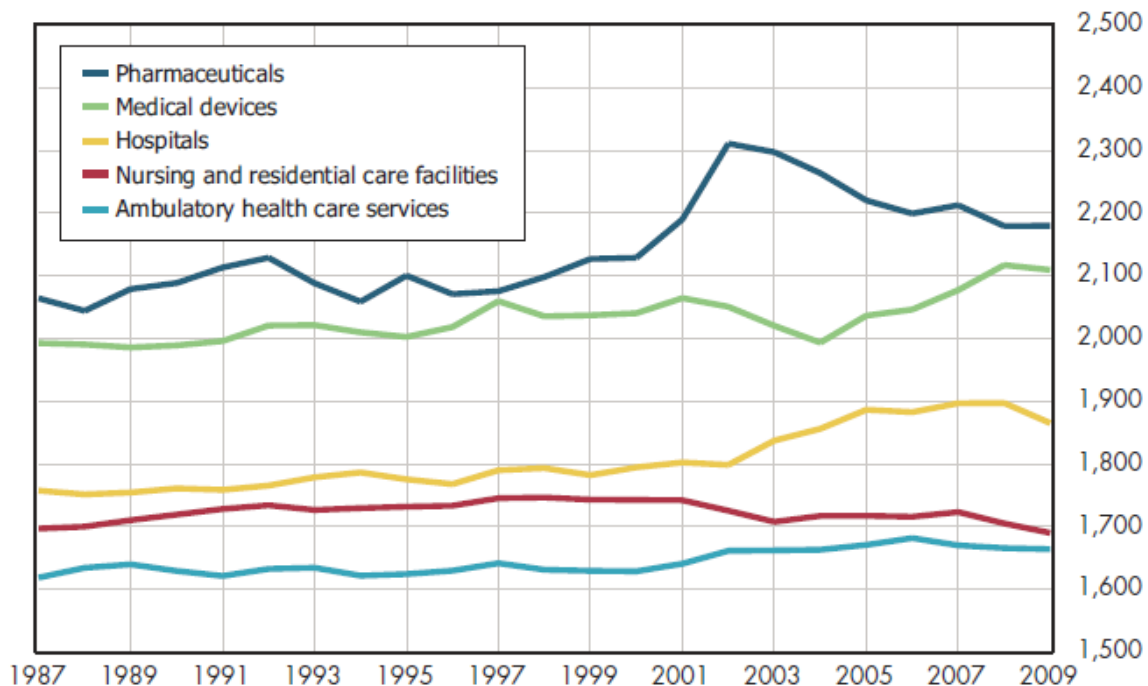
10.5.1 Downloads

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- Figure 10.5b Editable Slide (can be formatted as desired)[30]

Download Excel tables used to create Figures 10.5a/10.5b Tables[31] . Figures 10.5a and 10.5b were created from the following tables (the workbook includes all supporting tables used to create this table):

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[27]https://hub.mili.csom.umn.edu/content/m10120/latest/10.5aIMG.ppt
[28]https://hub.mili.csom.umn.edu/content/m10120/latest/10.5aDATA.ppt
[29]https://hub.mili.csom.umn.edu/content/m10120/latest/10.5bIMG.ppt
[30]https://hub.mili.csom.umn.edu/content/m10120/latest/10.5bDATA.ppt
[31]https://hub.mili.csom.umn.edu/content/m10120/latest/10.5TAB.xls

- Fig. 10.5a: Table 10.5.1. Average Annual Work Hours for Selected Components of the Health Sector, 2009
- Fig. 10.5b: Table 10.5.2. Annual Hours per Employee, by Industry, 1987–2009

10.5.2 References

A. Author's calculations.
B. Department of Labor. Bureau of Labor Statistics.

10.6 10.6 Increased Longevity and Shorter Working Life Have Lengthened the Period of Retirement for Males[32]

Since 1900, male life expectancy at age 20 has risen by 14 years, yet working-life expectancy currently is lower than it was when Theodore Roosevelt first was elected president. Working-life expectancy for men generally declined slowly but steadily starting in 1950, although it has increased slightly since 1990.

A baby born in 1900 had a life expectancy of only 47 years. A baby born in 2007 has a life expectancy of 77.9 years. The health sector cannot take credit for this entire 30-year increase in life expectancy. Public health measures such as improved sanitation and clean drinking water surely played a role. For the same reason, everyone believes that the rapid growth in the health care sector in the United States contributed to these remarkable gains in years of life.

At the start of the last century, a man age 20 could expect to live an additional 42 years, during which he could expect to work 38 years (figure 10.6a). The period of retirement was thus short. By 2004, life expectancy for a typical 20-year-old man had climbed to 56 years, yet his expected working-life expectancy still was 38 years! With a longer life expectancy and no change in working-life expectancy, the expected duration of retirement rose to 18 years, a considerable increase over four years a century earlier. Another way to look at this is to consider that in 1900, a man surviving to age 20 could expect to work 90 percent of his remaining life; by 2004, that share was less than 65 percent.

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[32]This content is available online at <https://hub.mili.csom.umn.edu/content/m10121/1.2/>.

10.6a The health sector helped contribute to increasing male life expectancy over the past century, yet working-life expectancy declined

Additional years of life expectancy at age 20
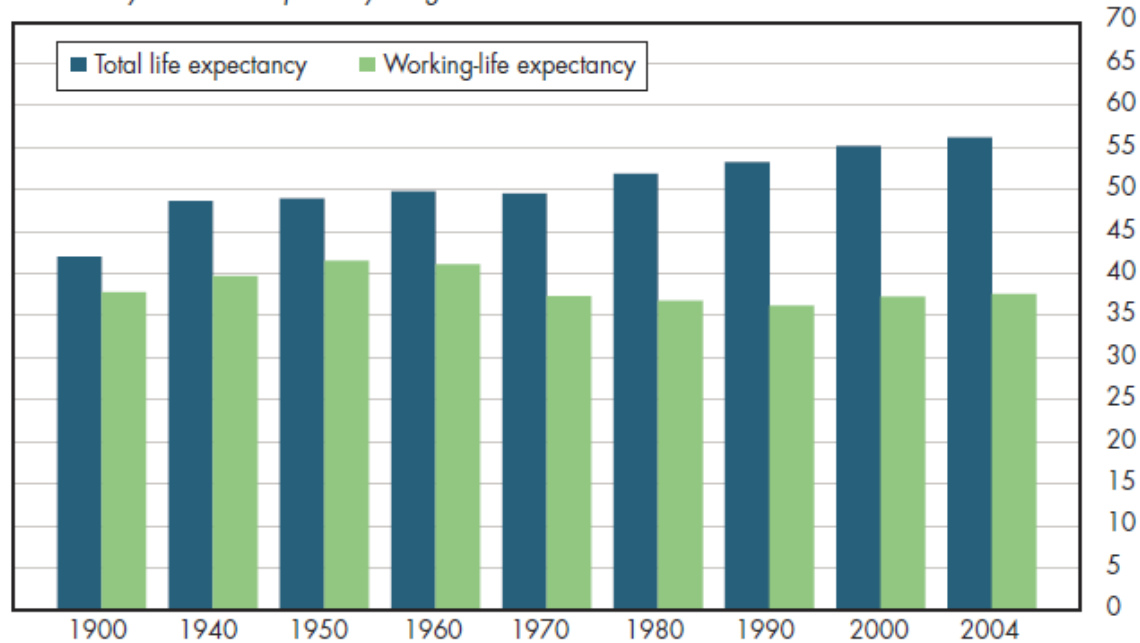
Women have a different course. Female life expectancy has risen even more than for men over the same period—from 44 to 61 years for a woman age 20 (figure 10.6b). Working-life numbers for women also rose more rapidly, as women's participation in the labor force has increased. In 1940, the average woman at age 20 could expect to be actively working in paid employment for only 12 years—less than 25 percent of her remaining years of life. This was 28 years fewer than the comparable number for men. By 2004, this male-female difference had decreased to only five years.

10.6b Increased life expectancy for females generally has been accompanied by rising working-life expectancy

Additional years of life expectancy at age 20
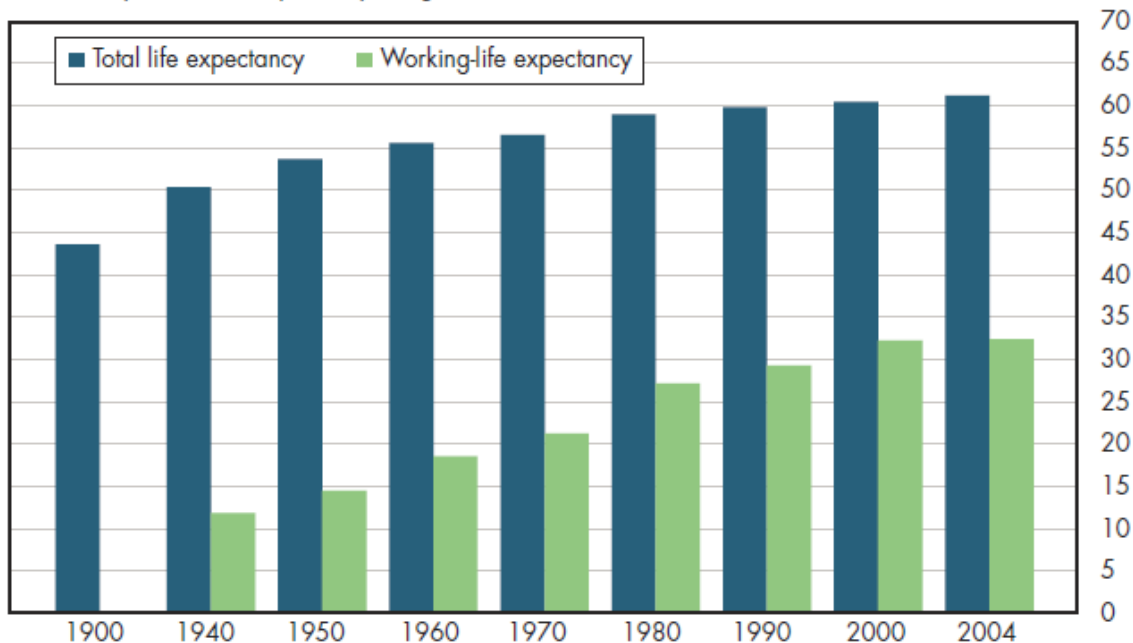
Note: Working-life expectancy not available for females in 1900.

Despite these changes, men today have 11 more working years than women do. Women spend far more time in paid employment than a century ago, but such work accounts for only approximately half of their adult lives.

10.6.1 Downloads

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- Figure 10.6b Editable Slide (can be formatted as desired)[36]

Download Excel tables used to create Figures 10.6a/10.6b Tables[37] . Figures 10.6a and 10.6b were created from the following tables (the workbook includes all supporting tables used to create this table):

- Fig. 10.6a: Table 9.6.1. Table 10.6. Life and Working-Life Expectancies for Males and Females At Age 20, 1900-2009
- Fig. 10.6b: Table 9.6.2. Table 10.6. Life and Working-Life Expectancies for Males and Females At Age 20, 1900-2009

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[33]https://hub.mili.csom.umn.edu/content/m10121/latest/10.6aIMG.ppt
[34]https://hub.mili.csom.umn.edu/content/m10121/latest/10.6aDATA.ppt
[35]https://hub.mili.csom.umn.edu/content/m10121/latest/10.6bIMG.ppt
[36]https://hub.mili.csom.umn.edu/content/m10121/latest/10.6bDATA.ppt
[37]https://hub.mili.csom.umn.edu/content/m10121/latest/10.6TAB.xls

10.6.2 References

A. Chiecka J, T Donley and J Goldman. Work Life Estimates at Millennium's End: Changes over the Last Eighteen Years. Illinois Labor Market Review 2000; 6(2). http://lmi.ides.state.il.us/lmr/worklife.htm (accessed June 30, 2010).

B. Department of Health and Human Services. Centers for Disease Control and Prevention.

C. Department of Labor. Bureau of Labor Statistics.

D. Krueger KV, GR Skoog and JE Ciecka. Worklife in a Markov Model with Full-time and Part-time Activity. Journal of Forensic Economics 2006; 19(1):61-82. http://legaleconometrics.com/P19_JFE8.pdf (accessed June 30, 2010).

E. Smith SJ. New Worklife Estimates Reflect Changing Profile of Labor Force. Monthly Labor Review March 1982:15-20. http://www.bls.gov/opub/mlr/1982/03/art2 full.pdf (accessed June 30, 2010).

Chapter 11

Chapter 11: Personal Incomes and Health Care

11.1 11.1 Rising Health Costs Hindered Growth in American Workers' Earnings[1]

Inflation-adjusted hourly wages in 2008 were 2.8 times as high as they were 60 years earlier. This has occurred despite rapid growth in supplements to wages and salaries, including employer-provided health coverage, payroll tax deductions for health-related purposes such as Medicare and workers' compensation, and other fringe benefits.

The data in figure 11.1 include only the employer's contribution toward health insurance and social insurance. Thus, the 1.45 percent employer contribution for Medicare is included but not the parallel contribution made by the employee that appears as a deduction on most employee paychecks. Likewise, the "hidden" employer contribution to employer-sponsored health insurance is included, but not the employee share of the premium (which again shows as a paycheck deduction that reduces the monetary compensation that otherwise would go to the employee).

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10104/1.1/>.

11.1 Rising health-related supplements are an important reason real hourly earnings have grown less quickly than average compensation

Inflation-adjusted hourly wages index using PCE deflator: 1948=100
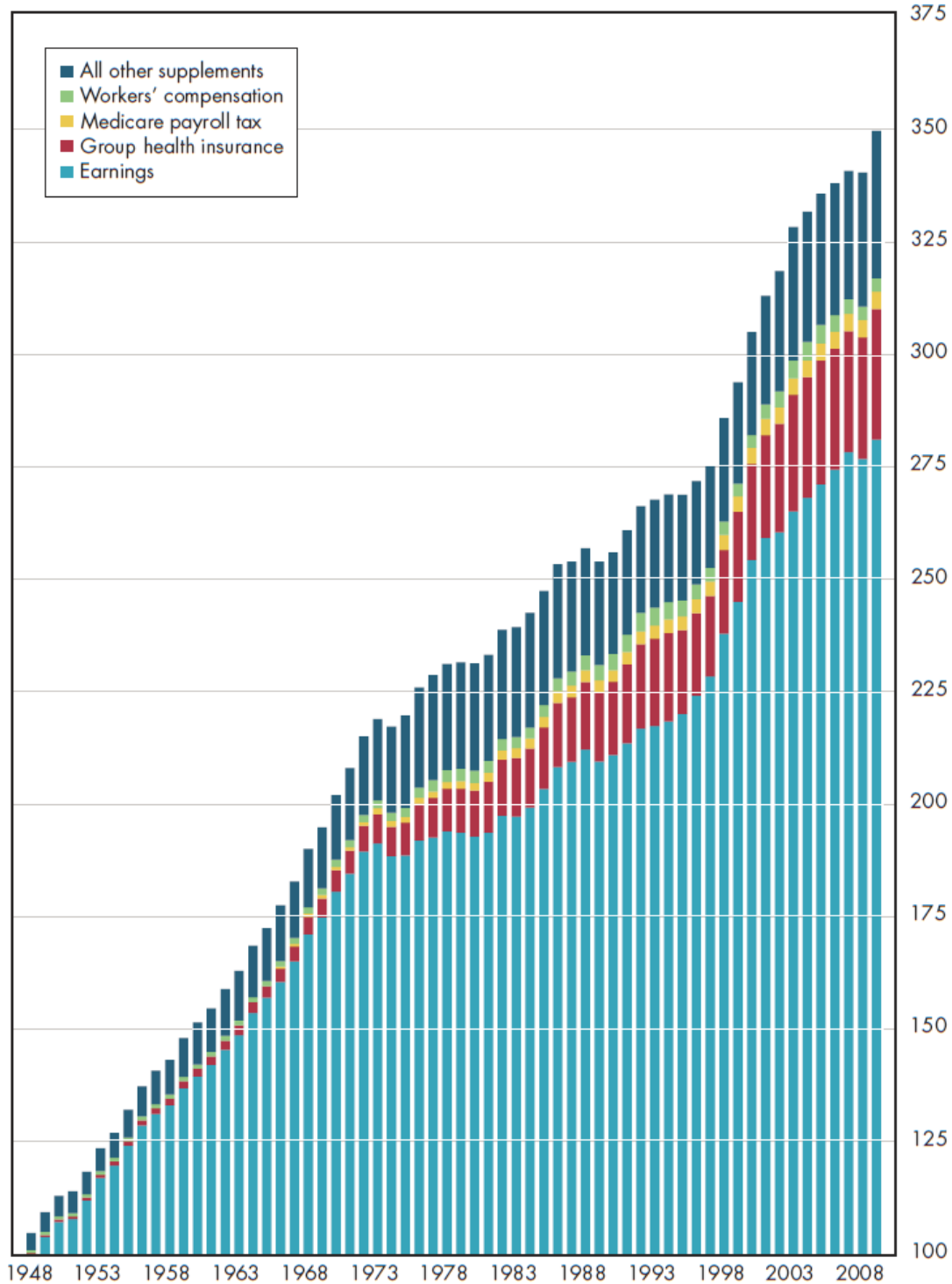
This calculation uses the PCE price deflator to remove the effect of inflation. For several reasons, the PCE price deflator is superior to the more commonly reported CPI. It more accurately reflects changes in the purchasing power of U.S. workers. Figure 11.1 is indexed to hourly earnings rather than total compensation. Thus, it also shows how much cash earnings would have increased had there been no increase in wage and salary supplements over the past 60 years. In that case, earnings would have been 3.5 times as high.

The exact percentages are not important. As an approximation, almost half the increase in compensation for wage and salary supplements was health-related. The lion's share of these health-related add-ons was for group health coverage. Because Medicare payroll taxes support the care of today's Medicare beneficiaries, some might question whether this is an employee "benefit" at all. However, from a social contract point of view, it does not matter whether individuals are literally banking for their own future retiree health expenses or merely making their contributions into a pool in exchange for a promise to receive such benefits in the future. The purpose is unquestionably health-related.

11.1.1 Downloads

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11.1.2 References

A. Department of Commerce. Bureau of Economic Analysis.

11.2 11.2 Employee Compensation in Health Services Is Slightly Higher than All Workers Average[4]

In the health services industry, the average compensation per FTE worker is more than $10,000 higher than for other workers in the service industry (figure 11.2a). It is lower than compensation in private goods-producing industries but slightly higher than the average for all private-sector workers. Both higher cash payments and fringe benefits contribute to the health care's margin of advantage.

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[2]https://hub.mili.csom.umn.edu/content/m10104/latest/11.1IMG.ppt
[3]https://hub.mili.csom.umn.edu/content/m10104/latest/11.1DATA.ppt
[4]This content is available online at <https://hub.mili.csom.umn.edu/content/m10105/1.1/>.

11.2a Average compensation in the health care industry is higher than in the rest of the service sector but lower than for public employees

Annual compensation per FTE worker (2008 dollars)
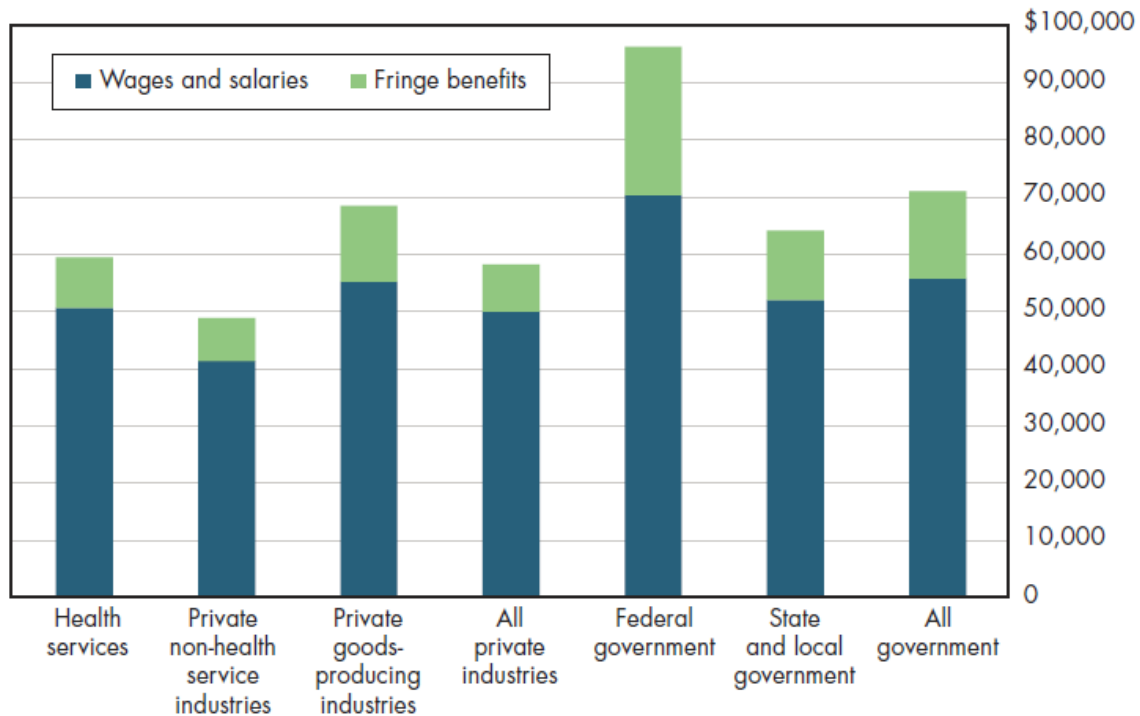
Because detailed data are not available, these numbers exclude workers in the pharmaceutical and medical device industries. They also do not count government workers who might be employed in hospitals or other government-owned facilities. However, average compensation for all types of government workers is much higher than in the private sector (figure 11.2a, right axis). Therefore, inclusion of public sector health workers might increase the health industry average overall rather than reduce it. This is not certain because some of the difference in public versus private compensation relates to differences in the skill mix used in each sector.

The average compensation for health services masks some sizable differences across different parts of the industry. Average compensation for nursing and residential facilities is only approximately half the level seen in ambulatory health care services such as physicians' offices (figure 11.2b). In the former facilities, a relatively large portion of the workforce is performing custodial care that requires less skill and training than is required for many of the highly specialized personnel used in hospitals, for example.

11.2b Average annual compensation is much lower in long-term care facilities, such as nursing homes, than elsewhere in the health sector

Annual compensation per FTE (2008 dollars)
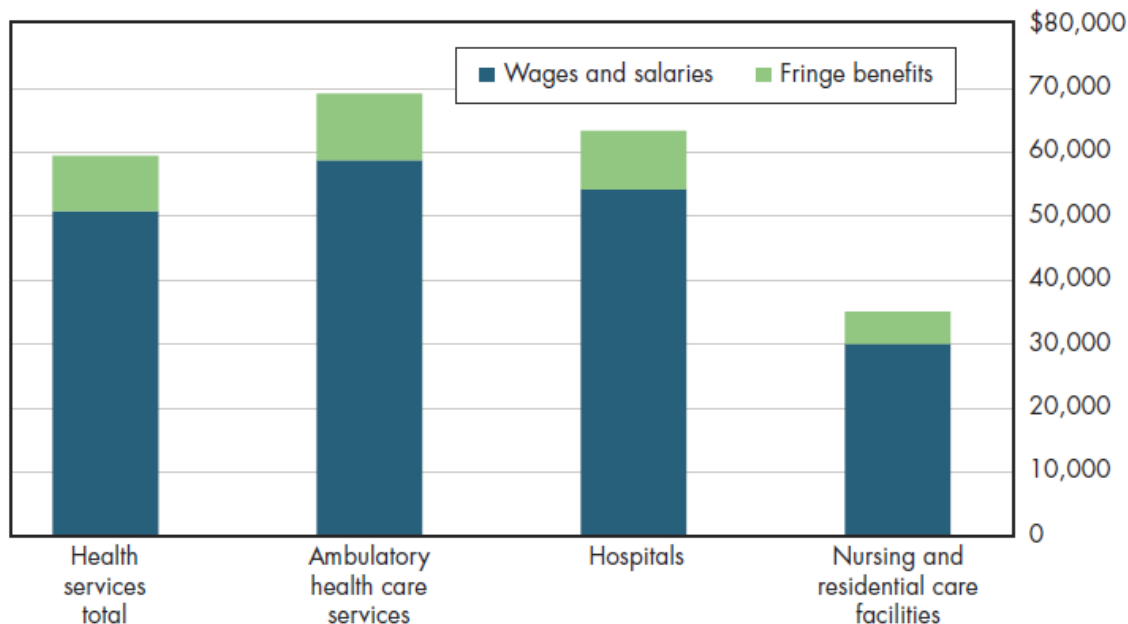
Currently, one of every nine private employees works in the health care industry, a fraction that the BLS projects will grow over the next decade. Of the 12.2 million FTE private workers in the health sector in 2008, 40 percent work in ambulatory health care services, slightly more than 30 percent work in hospitals, and the remainder work in nursing homes and residential care facilities. It is somewhat more difficult to forecast health services employment under the health reform law. Total health spending is expected to rise. However, stringent limitations on Medicare payments, for example, have raised the prospect that some health facilities will be forced out of business altogether.

11.2.1 Downloads

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- Figure 11.2b Editable Slide (can be formatted as desired)[8]

11.2.2 References

A. Author's calculations.
B. Department of Commerce. Bureau of Economic Analysis.

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[5]https://hub.mili.csom.umn.edu/content/m10105/latest/11.2aIMG.ppt
[6]https://hub.mili.csom.umn.edu/content/m10105/latest/11.2aDATA.ppt
[7]https://hub.mili.csom.umn.edu/content/m10105/latest/11.2bIMG.ppt
[8]https://hub.mili.csom.umn.edu/content/m10105/latest/11.2bDATA.ppt

11.3 11.3 Employee Compensation in Ambulatory Health Sector Grow Slowly[9]

In terms of worker purchasing power, real (inflation-adjusted) hourly compensation in ambulatory health care has matched changes in hourly output over the long haul (figure 11.3a). This might seem unremarkable except that it deviates from the experience in the private sector generally. In most of the economy, inflation-adjusted hourly compensation increased in the 20 years starting in 1987. However, it did not rise as quickly as changes in real hourly output over the same period.

11.3a In terms of employee purchasing power, real hourly compensation in ambulatory health care matches changes in hourly output over the long haul

Indexes: 1987=100

— Private business real hourly output
— Private business real hourly compensation
— Ambulatory health services real hourly output
— Ambulatory health services real hourly compensation
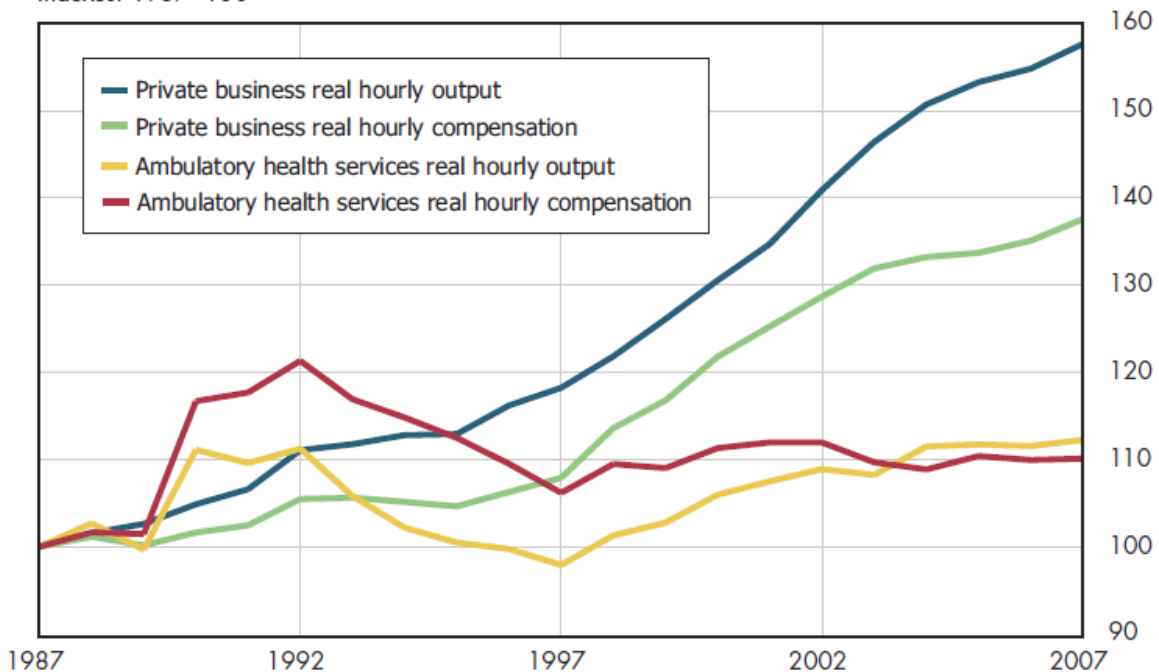
In ambulatory health services, real hourly compensation rose far more rapidly than either hourly compensation in the rest of the economy or hourly output in that industry. Subsequently, however, compensation steadily declined from its "excess" level in 1992 to a level more comparable with the change in hourly output by 2007. This is more in line with conventional economic theory that wages generally will reflect the productivity of labor. However, this compensation index measures wages in terms of worker purchasing power (as previously written, by dividing by the PCE price deflator to remove the effects of general inflation).

An alternative approach divides by the price of business output. This reflects the price of what a worker can produce in an hour. Doing this (figure 11.3b), the private sector shows a much tighter fit between changes in hourly output and what is paid to labor (although in recent years, compensation again has begun to lag behind higher productivity).

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[9]This content is available online at <https://hub.mili.csom.umn.edu/content/m10106/1.1/>.

11.3b Relative to the price of hourly output, real hourly compensation in ambulatory health services has decreased since 1992; it rose in private business overall

Indexes: 1987=100
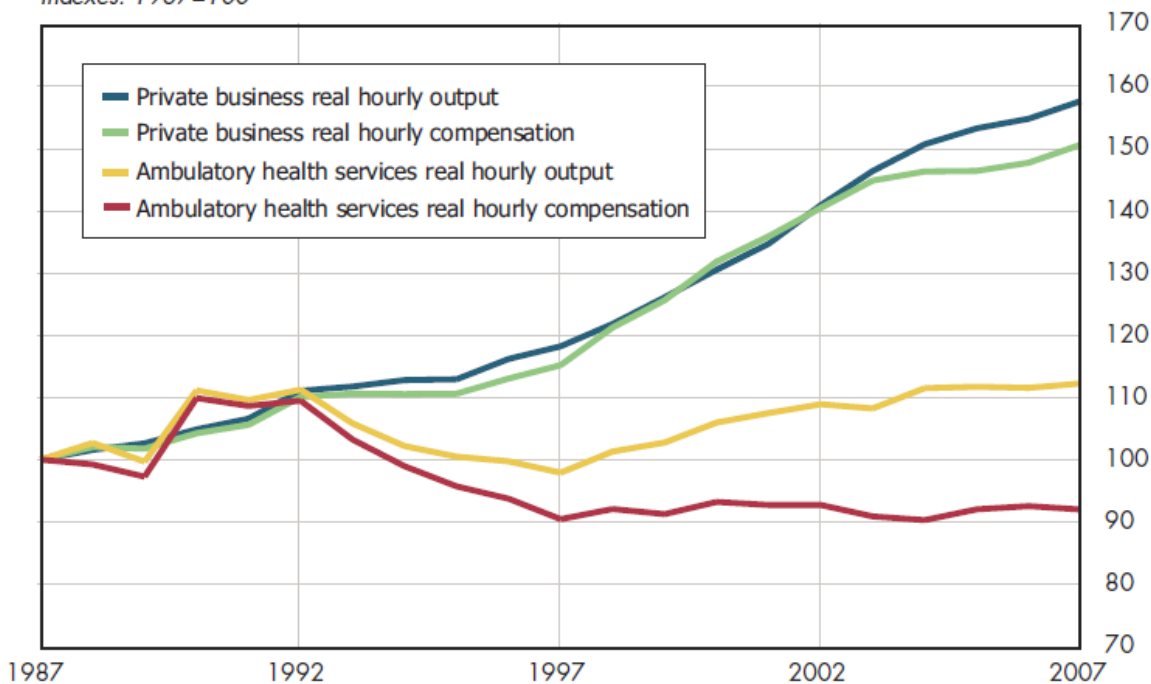
The facts in the ambulatory care sector are quite different. Although labor productivity increased by 10 percent over this period, hourly compensation declined by approximately the same amount. This reflects the fact that prices in the ambulatory health care sector have outpaced worker productivity gains. If prices rose in parallel with productivity gains—as apparently they do in the private sector generally—then real compensation for ambulatory services workers would have risen 10 percent also.

Briefly, real hourly compensation has risen less rapidly in the ambulatory health sector than in the rest of the economy. This reflects the reality that hourly productivity gains in that sector likewise have been less.

11.3.1 Downloads

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- Figure 11.3b Editable Slide (can be formatted as desired)[13]

11.3.2 References

A. Author's calculations.
B. Department of Labor. Bureau of Labor Statistics.

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[10]https://hub.mili.csom.umn.edu/content/m10106/latest/11.3aIMG.ppt
[11]https://hub.mili.csom.umn.edu/content/m10106/latest/11.3aDATA.ppt
[12]https://hub.mili.csom.umn.edu/content/m10106/latest/11.3bIMG.ppt
[13]https://hub.mili.csom.umn.edu/content/m10106/latest/11.3bDATA.ppt

11.4 11.4 US Health Professionals Are Paid Higher than Other Industrialized Countries[14]

In general, the United States pays higher prices for health labor than are paid else- where. The price differential varies a great deal, depending on the category of health professional examined. The average annual remuneration of physician specialists in the United States is more than six times the nation's GDP per capita (which was approximately $46,000 in 2009). Physician specialists in OECD countries for which such data are available also are well paid, but the comparable ratio to GDP per capita is less than four to one (figure 11.4a). Alternatively, even accounting for the fact that the United States has higher wages and GDP per capita than the OECD comparators have, U.S. specialists, relatively speaking, are paid 50 percent more than their counterparts in competitor nations receive.

11.4a Physicians and nurses are paid relatively more in the United States than in other OECD countries, but the largest pay differential is for specialists

Ratio of annual compensation to own country GDP per capita (2006)
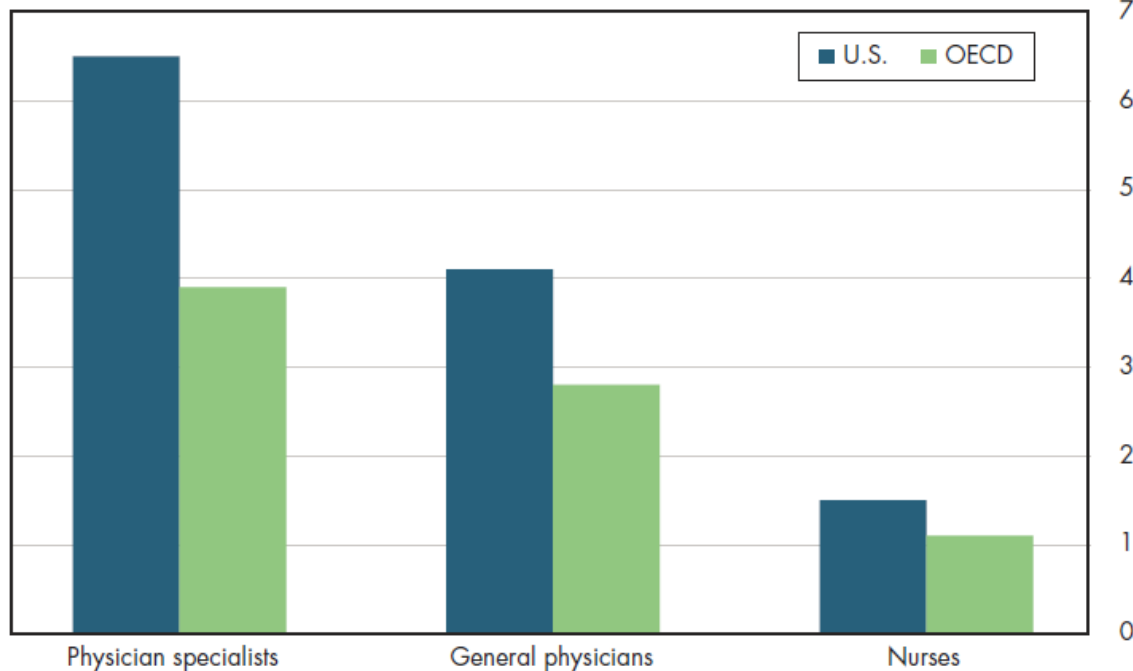
A similar result with less pronounced differences can be told for general physicians. In the United States, their relative compensation is the same as the average compensation of specialists in the OECD. Generalist physicians in the OECD earn on average less than three times per capita GDP in their own country. Thus, U.S. physician generalists are paid in relative terms almost 50 percent more than physicians in other industrialized nations receive.

The U.S. pay differential shrinks further in the case of nurses. U.S. nurses, on average, are paid approximately 50 percent more than GDP per capita, whereas in the OECD they are paid approximately 10 percent more on average. Thus, a typical U.S. nurse earns approximately 30 percent more than do counterparts in the OECD.

More detail illustrates some of the variation masked by using averages. The annual compensation for nurses employed in American hospitals is almost 2.5 times as high as that for the average U.S. worker (figure 11.4b). This is the same as the relative compensation of nurses in the UK. Although relative nurse pay

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[14]This content is available online at <https://hub.mili.csom.umn.edu/content/m10107/1.1/>.

is lower in some other countries (Finland and Norway), it is higher in Australia, Denmark, and Ireland. U.S. health workers generally are compensated well in absolute and relative terms. Even so, this does not imply that U.S. prices for health labor necessarily are the highest in the world when taking into account the earnings or resources available to the rest of a nation's workers or population.

11.4b Nurses in American hospitals are paid more than twice the average employee wage, but that is also true elsewhere

Ratio: annual compensation of salaried hospital nurses relative to all workers (2007)
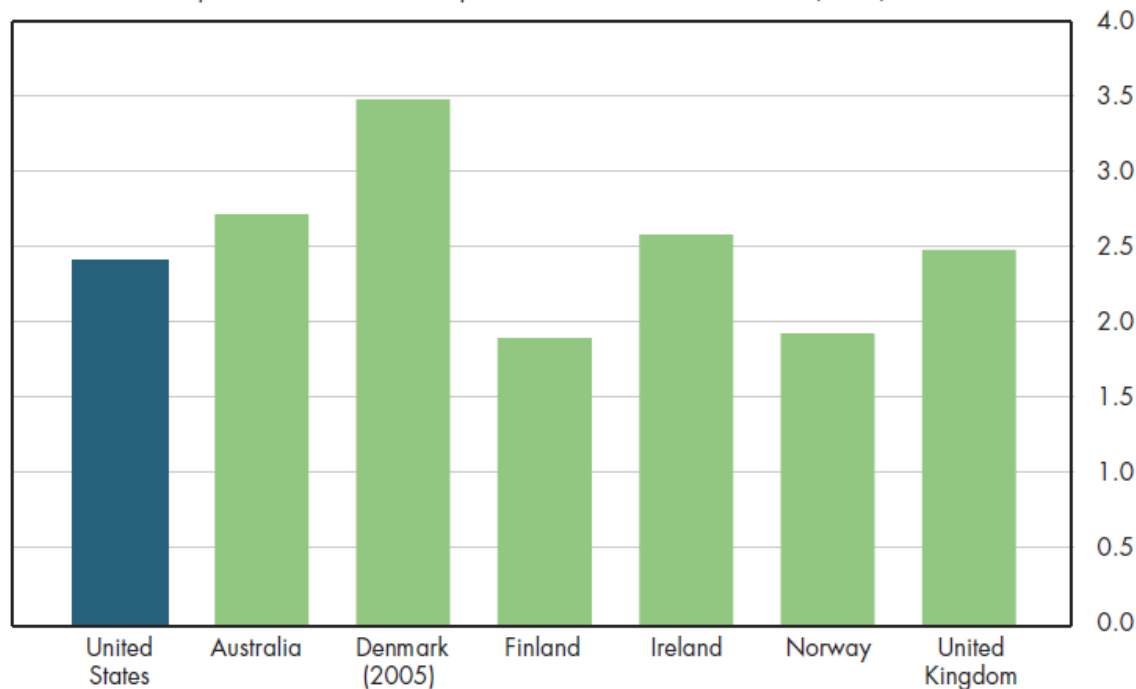
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- Figure 11.4b Editable Slide (can be formatted as desired)[18]

11.4.2 References

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

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[15]https://hub.mili.csom.umn.edu/content/m10107/latest/11.4aIMG.ppt
[16]https://hub.mili.csom.umn.edu/content/m10107/latest/11.4aDATA.ppt
[17]https://hub.mili.csom.umn.edu/content/m10107/latest/11.4bIMG.ppt
[18]https://hub.mili.csom.umn.edu/content/m10107/latest/11.4bDATA.ppt

11.5 11.5 Rise in US Rates of Return for Medical Education[19]

The annual rate of return to investment in physician education currently is at double- digit levels. Approximately 50 years ago, earlier studies found that such rates of return were much less than 10 percent (figure 11.5a). The numbers represent the hours-adjusted annualized rate of return on medical education over a doctor's working lifetime. The investment in medical education includes direct costs (tuition, books, and so forth) and indirect costs, that is, the income foregone by attending school/ residency rather than working.

11.5a The annual rate of return for medical education appears for some specialists to have increased over many decades

Hours-adjusted annualized internal rate of return on educational investment over a working lifetime
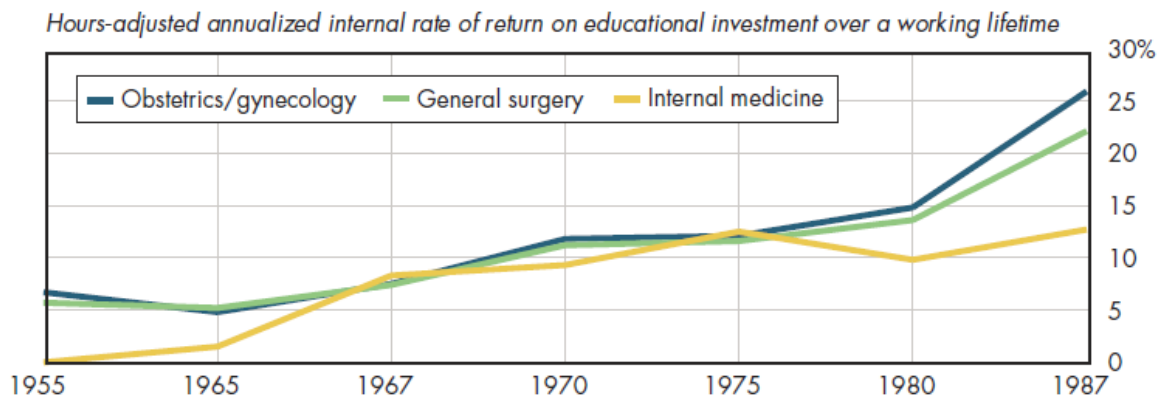
Note: The interval between years is not equal. Each year represents a different study. These studies have similar but not identical methodologies.

The return on this investment is the higher annual compensation physicians receive relative to what similar individuals receive on average during each year of their career. The hourly adjustment is important because physicians work longer hours than the average worker does. The rate of return is annualized to make it the same as other investments. For example, from 1900-2009, the total rate of return for the Dow Jones Industrial Average (DJIA) was 9.4 percent.

These data are approximations because such information for every category of physician is not available. Each of the studies that constitute the data displayed in figure 1.5b differs in its methodological details. However, they suggest that a typical physician earns a healthy rate of return compared with investing comparable resources in the stock market. These sizable rates of return appear somewhat less than for other professional degrees such as MBA or law degrees (figure 11.5b). Dentists and physician specialists have comparable rates of return, but primary care doctors have lower—albeit still impressive—rates of return. This is consistent with the general impression that primary care doctors are "underpaid" relative to specialists. The study shown defined procedure-based medicine as surgery, obstetrics, radiology, anesthesiology, and medical subspecialties. Trends for these other professions are not available, but CEO compensation has increased considerably, relative to that of average workers (figure 11.5c).

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[19]This content is available online at <https://hub.mili.csom.umn.edu/content/m10108/1.1/>.

11.5b Physician specialists have higher educational rates of return than primary care doctors have, but these rates are lower than those for lawyers or for those who have MBA degrees

Hours-adjusted annualized internal rate of return on educational investment over a working lifetime
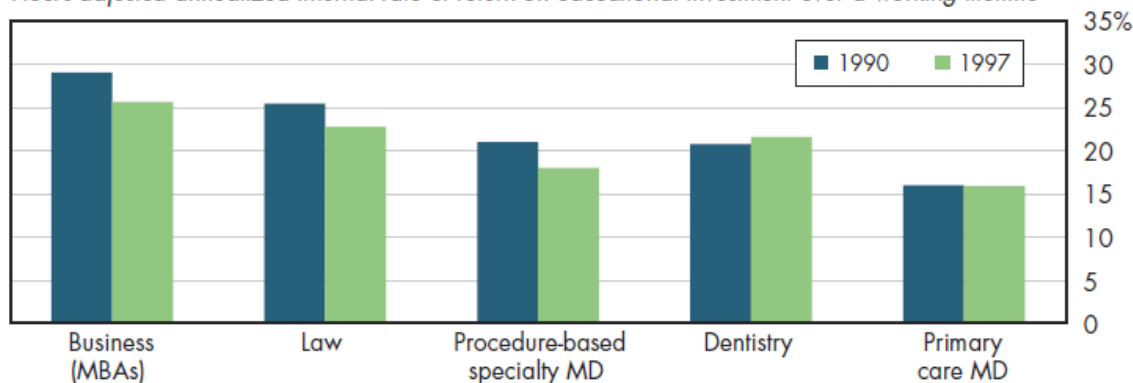
11.5c Increasing returns for physician education have occurred during a period in which CEO compensation also has been rapidly rising

Ratio: median CEO compensation compared with average U.S. worker compensation
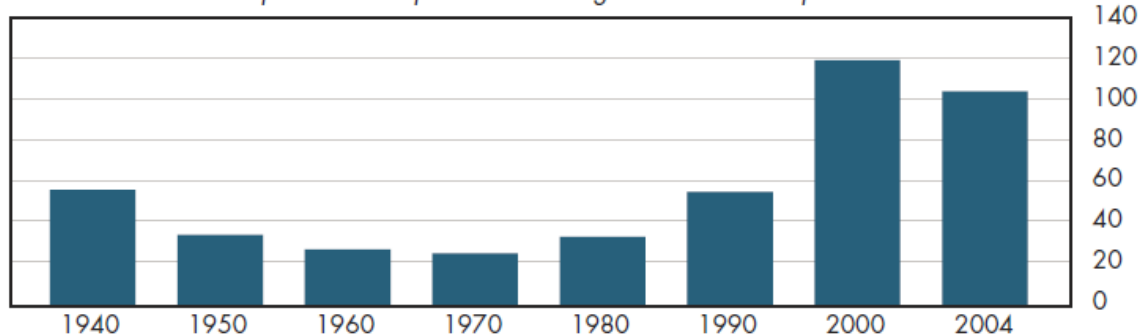
These comparisons suggest that high prices for health labor in the United States might simply reflect higher returns to skilled labor across the board. If doctors were paid much less, more people might get MBAs or law degrees instead. This might reduce health spending, but reasonable people might disagree on whether it would improve social welfare.

11.5.1 Downloads

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[20]https://hub.mili.csom.umn.edu/content/m10108/latest/11.5aIMG.ppt
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[22]https://hub.mili.csom.umn.edu/content/m10108/latest/11.5bIMG.ppt
[23]https://hub.mili.csom.umn.edu/content/m10108/latest/11.5bDATA.ppt
[24]https://hub.mili.csom.umn.edu/content/m10108/latest/11.5cIMG.ppt

- Figure 11.5c Editable Slide (can be formatted as desired)[25]

11.5.2 References

A. New York Times. The Wide Divide. April 6, 2006. http://www.nytimes.com/ imagepages/2006/04/09/business/businessspecial/20060409_PAY_GRAPHIC. html?ref=executivepay (accessed November 12, 2010).

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C. Weeks WB, AE Wallace, MM Wallace and HG Welch. A Comparison of the Educational Costs and Incomes of Physicians and Other Professionals. New England Journal of Medicine 1994; 330(18):1280-86.

D. Weeks WB and AE Wallace. The More Things Change: Revisiting a Comparison of Educational Costs and Incomes of Physicians and Other Professionals. Academic Medicine 2002; 77(4):312-19.

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[25]https://hub.mili.csom.umn.edu/content/m10108/latest/11.5cDATA.ppt

Chapter 12

Chapter 12: Distribution of Health Services

12.1 12.1 1% of Population Accounts for 25% of Health Spending[1]

The 1 percent of the population that has the highest annual health expenses accounts for almost 25 percent of health spending (figure 12.1a). Their annual spending in 2010 likely exceeded $125,000. Those in the top 5 percent account for just less than half of all spending, with average annual expenditures that exceed $50,000. With the average U.S. worker earning less than $50,000 a year, these numbers demonstrate the desirability of some kind of health insurance coverage. Few but the wealthiest families are in a position to self-insure spending at these amounts.

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10097/1.1/>.

12.1a One percent of the population accounts for approximately 25 percent of health spending; 5 percent accounts for almost half

Distribution of population ranked by annual per capita health spending
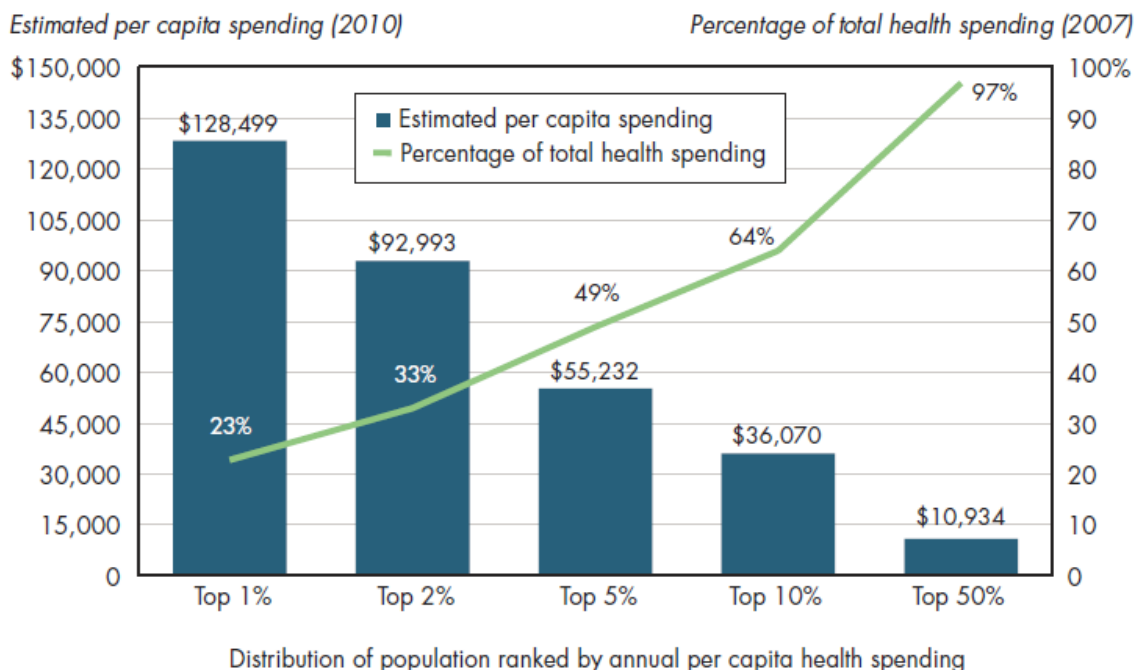
Note: Percentages are for the civilian, non-institutionalized population based on Medical Expenditures Panel Survey (MEPS) data for 2007. 2010 per capita spending has been calculated from 2007 figures, adjusted to account for increased personal health spending per capita and to reduce differences between MEPS and NHE estimates.

At the other end of the distribution, individuals in the bottom half of spenders account for only 3 percent of annual health costs. Their average annual spending is less than $350. Leaving aside administrative costs, an actuarially fair premium to cover only the catastrophic expenses of the top one percent would be almost $1300 a year. To cover the risk of being in the top 5 percent would require annual premiums of approximately $2,800. The challenge in a voluntary health insurance system is to convince a sizable share of those who have expected expenses of less than $350 to spend almost $3,000 to secure protection against risks that have only a 5 percent chance of occurring. The more low-risk individuals who opt out, the higher will be the premiums needed for those who remain. This greatly exaggerates the challenge when people are separated into different age groups. In that case, the difference between the lowest and highest spenders shrinks considerably.

Only selected snapshots in time are available The concentration of health spending might have become somewhat larger between 1963 and 1996 (figure 12.1b). However, there is evidence that it has fallen slightly in subsequent years. All the data from 1996 through 2007 come from the same household survey. Thus, one cannot dismiss the changes observed prior to that as an artifact of differences in methods of collecting this kind of statistics. Only one data point (from 1928) shows that the top 5 percent of spenders accounted for just over half of spending. This situation is almost identical to the share of spending accounted for by the same group 40 years later. In light of the enormous changes in technology that occurred in the intervening decades, there is no reason to expect such stability in the degree of health expenditure concentration.

12.1b The concentration of health spending has been stable over decades, but there is some indication it has declined recently

Percentage of total annual health spending accounted for by group
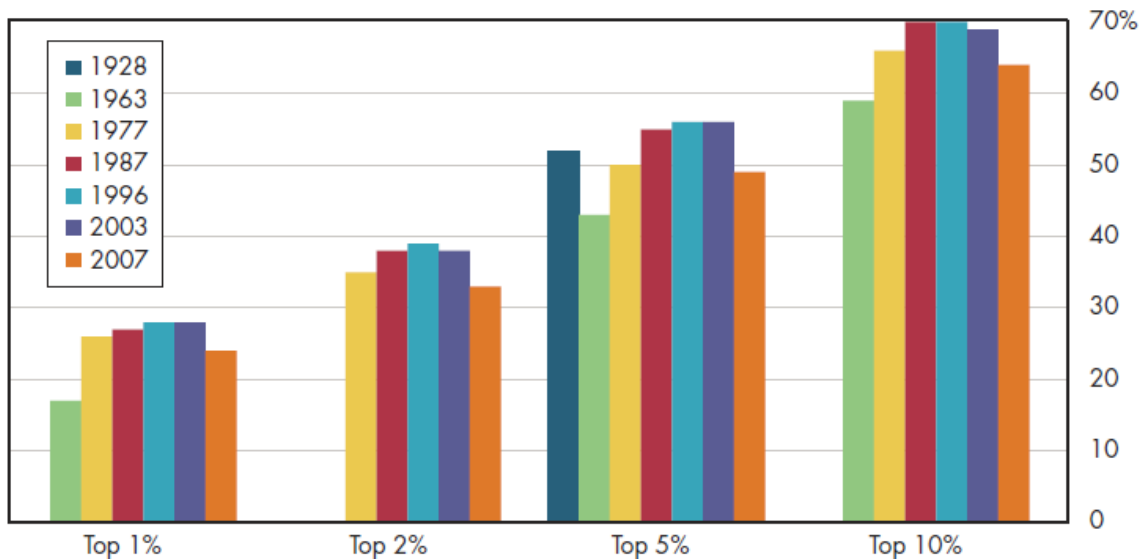
Distribution of population ranked by annual per capita health spending

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12.1.2 References

A. Author's calculations.
B. Berk ML and AC Monheit. The Concentration of Health Care Expenditures, Revisited. Health Affairs 2001; 20(2):9-18.
C. Cohen SB and W Yu. The Concentration and Persistence in the Level of Health Expenditures over Time: Estimates for the U.S. Population, 2006-2007. Agency for Healthcare Research and Quality. Rockville MD. March 2010.
D. Department of Health and Human Services. Agency for Healthcare Research and Quality.
E. Zuvekas SH and JW Cohen. Prescription Drugs and the Changing Concentration of Health Care Expenditures. Health Affairs 2007; 26(1):249-57.

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[2]https://hub.mili.csom.umn.edu/content/m10097/latest/12.1aIMG.ppt
[3]https://hub.mili.csom.umn.edu/content/m10097/latest/12.1aDATA.ppt
[4]https://hub.mili.csom.umn.edu/content/m10097/latest/12.1bIMG.ppt
[5]https://hub.mili.csom.umn.edu/content/m10097/latest/12.1bDATA.ppt

12.2 12.2 The Lowest-Income Families Have 2.5 Times Burden of Paying for Health Care Than That of the Highest-Income Families[6]

Households at the bottom of the income distribution devote more than 40 percent of their income to paying for health care (figure 12.2a). The corresponding number for those who have the highest incomes is approximately 15 percent. Thus, the relative burden (measured in terms of shares of income) is approximately $2\frac{1}{2}$ times more for the first group compared with the last.

12.2a The net burden of health-related expenditures is approximately 2½ times as large for extremely low-income families compared with extremely high-income families

Spending as percentage of family income (2002)

Income decile (1=10 percent of households with lowest incomes)
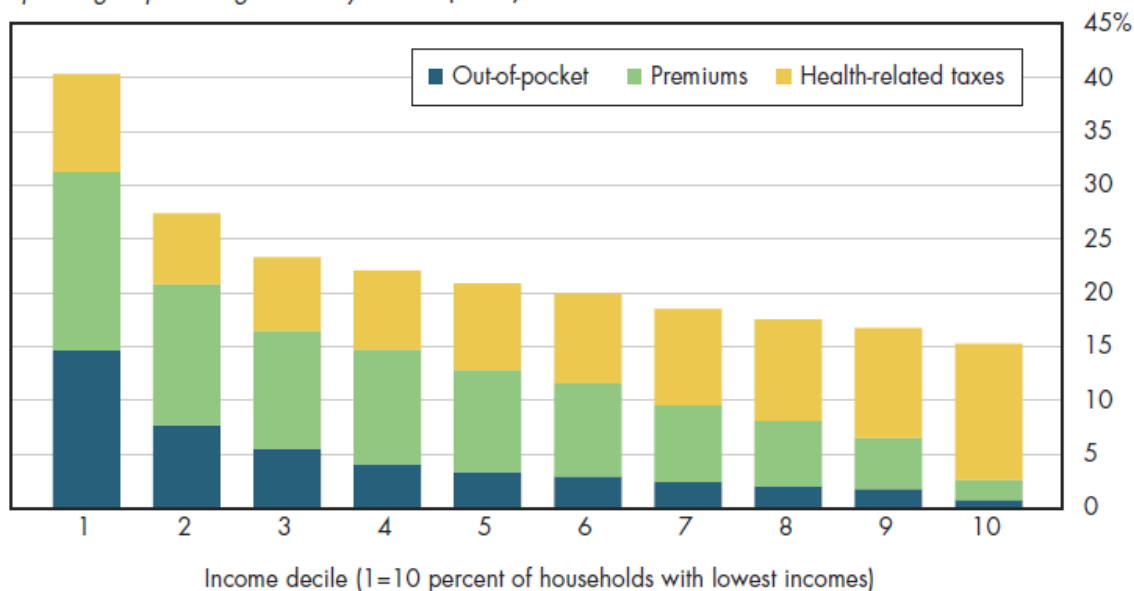
Note: The family burden of health expenditures includes out-of-pocket spending; premium payments for group and non-group health insurance (including the employer share) and Medicare Parts B and D; and health-related taxes, including payroll taxes for Medicare Part A and the family's share of other taxes used to pay for publicly-financed health care.

These data account for the entire burden of health spending for families in each income group. The spending data shown include the readily visible amounts paid by the family for out-of-pocket spending and premiums but also the hidden costs, such as the net employer share of premiums after subtracting any tax subsidies for health coverage. The hidden costs also include each family's estimated share of various payroll, income, and other taxes used to finance Medicare, Medicaid, and other health care spending.

Two points are worth noting. First, the burden at the lowest end of the distribution would be considerably less if it were based on actual annual expenditures by these households rather than income (which is negative or zero for a non-trivial number of households in the lowest-income bracket). Second, tax-financed health care is to some considerable degree targeted for those who have lower incomes (refer to figure 4.2b). Therefore, a measure of actual expenditures for health care (including tax-subsidized care) would result in a ratio that would likely be much higher. Thus, the net burden is considerably more evenly distributed than if families had to pay for all health expenses entirely on their own.

Out-of-pocket spending accounts for more than 30 percent of this burden for the lowest income families

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[6]This content is available online at <https://hub.mili.csom.umn.edu/content/m10098/1.2/>.

compared with less than 5 percent for those with the high- est incomes (figure 12.2b). Conversely, health-related taxes make up more than 80 percent of the burden at the highest end of the income distribution compared with just over 20 percent for those at the lowest end. The premium share of the burden increases to the middle of the income distribution but declines thereafter.

12.2b Even for the lowest-income families, health-related taxes account for more than 20 percent of the net burden of paying for health care

Income decile (1=10 percent of households with lowest incomes)
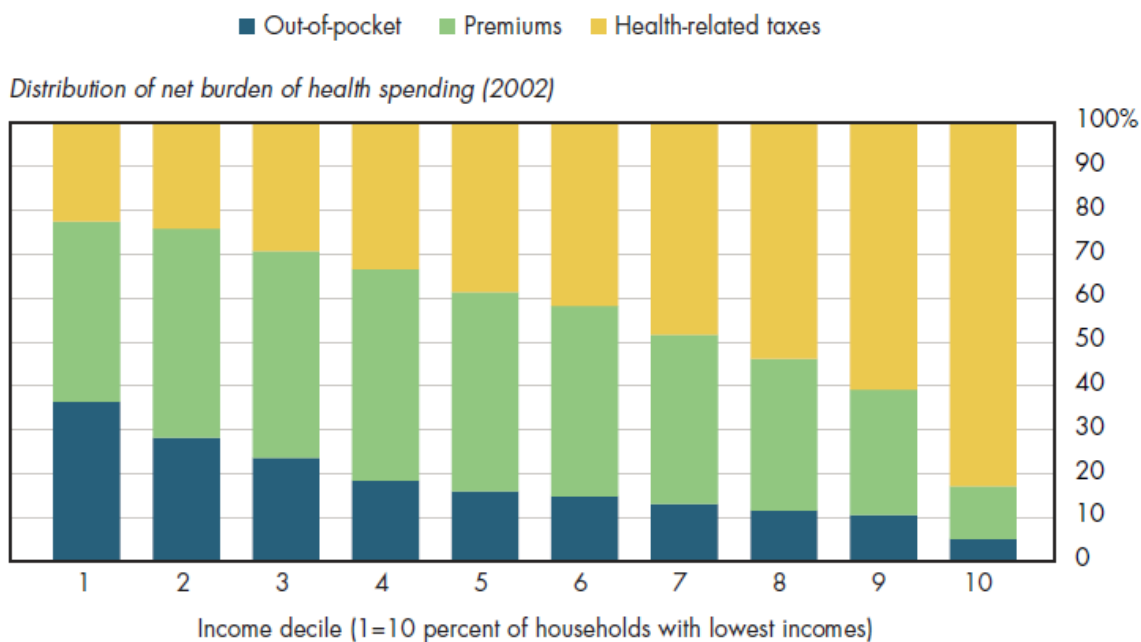
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12.2.2 References

A. Selden TM. Using Adjusted MEPS Data to Study Incidence of Health Care Finance. Agency for Healthcare Research and Quality. http://www.ahrq.gov/about/annual conf09/selden/selden.ppt (accessed July 16, 2010).

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[7]https://hub.mili.csom.umn.edu/content/m10098/latest/12.2aIMG.ppt
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[10]https://hub.mili.csom.umn.edu/content/m10098/latest/12.2bDATA.ppt

12.3 12.3 Burden of Paying for Health Care Has Increased[11]

Over the past 25 years, the direct visible burden of health spending has decreased for those in the lowest fifth of households ranked by income (figure 12.3a). For those in the higher income brackets, this burden has increased slightly (second highest quintile) or remained stable (top quintile). These data count only out-of-pocket spending and direct premiums paid by the family.

12.3a Direct health spending has been declining as a share of family after-tax income for families with the lowest incomes

Direct health spending as a percentage of family income

Income quintile before taxes
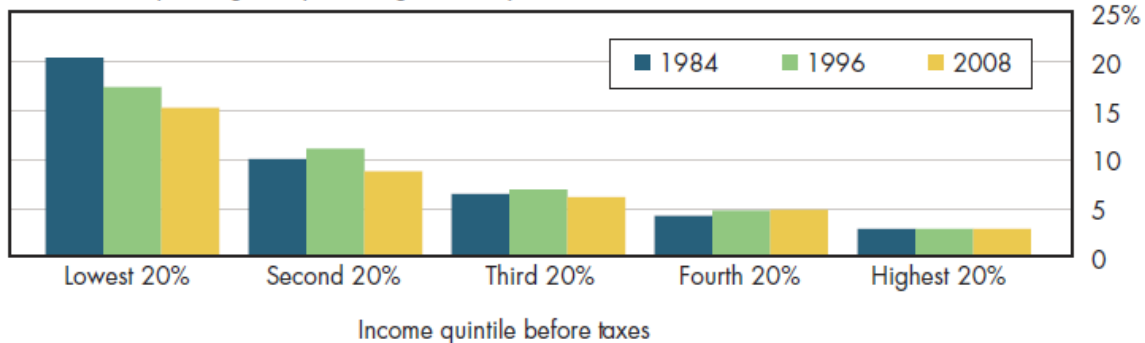
Moreover, a different scenario emerges if measures include health spending relative to annual consumption expenditures instead of income (figure 12.3b). Incomes can greatly vary from year to year and many economists believe that actual expenditures more closely reflect a family's permanent income. That is, if a family experiences a decline in income perceived to be temporary (for example, a lost job or a decision to return to school), it likely will borrow temporarily to avoid a steep decline in lifestyle that otherwise would result from limiting spending to income. From this perspective, the direct health spending burden is quite similar across households with widely varying incomes. However, according to this measure, this burden also has been rising for most income groups.

12.3b The burden of health spending is far smaller when compared with consumption rather than with spending

Direct health spending as a percentage of family consumption expenditures

Income quintile
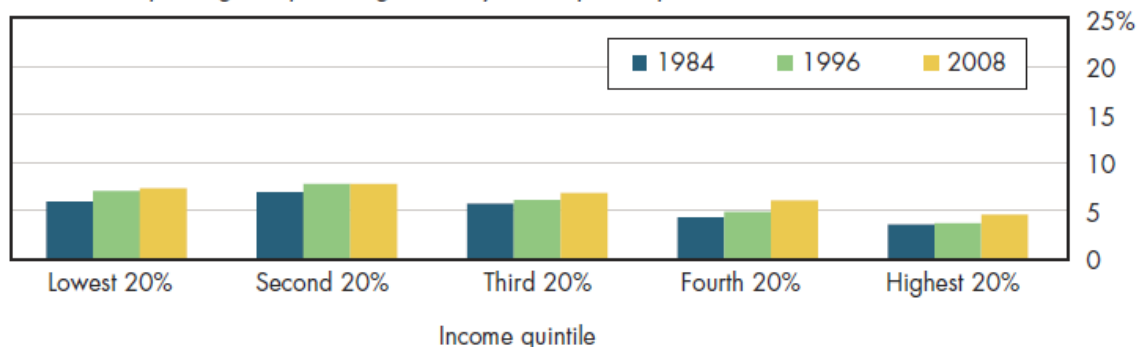
Note: Direct health spending includes only the family share of premiums paid for private or public health insurance, along with all out-of-pocket spending on medical services.

Note that switching from income to consumption reduces the burden in the lowest income quintile by approximately eight percentage points. This reduction would be even larger for the lowest decile rather than

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[11]This content is available online at <https://hub.mili.csom.umn.edu/content/m10099/1.1/>.

quintile because, by necessity, anyone who has a negative or zero income would be forced to borrow. Thus, the 40 percent net burden shown previously would be much lower using an arguably more accurate measure of permanent income.

The most complete way to look at burdens considers both hidden and unhidden costs and subsidies. One snapshot used methods similar (though not identical) to the net burden estimates described previously in figure 12.2a. Interestingly, this 1989 analysis also found approximately a two-and-a-half to one ratio between the net burden at the bottom compared with the top 10 percent of the income distribution (figure 12.3c). The absolute level of these burdens was approximately half the levels observed in 2002. The net burden rose almost equally across the income distribution. Consequently, the relative burden grew neither larger nor smaller during this period. No good way exists to determine whether this pattern is typical for the period that preceded it, or whether it has continued until the present.

12.3c Since 1989, the total net burden of health-related expenditures has approximately doubled at both ends of the income distribution

Net burden of health spending as percentage of family income
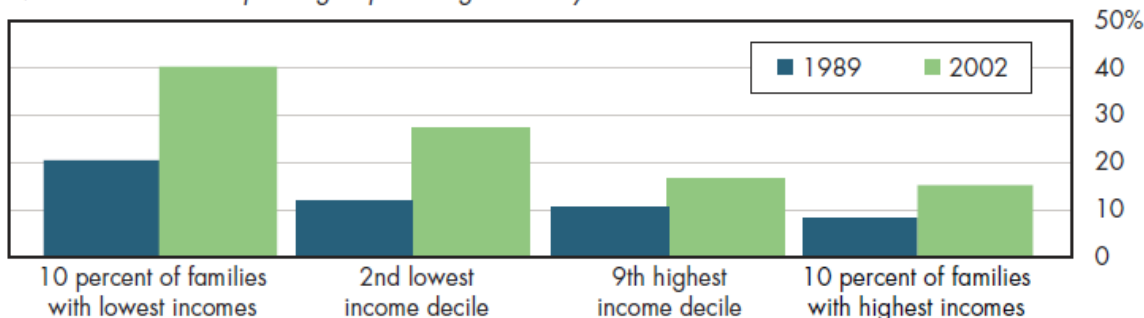
Note: The net burden of health spending includes out-of-pocket spending; premium payments for group and non-group health insurance (including the employer share) and Medicare Parts B and D; and health-related taxes, including payroll taxes for Medicare Part A and the family's share of other taxes used to pay for publicly financed health care.

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- Figure 12.3c Image Slide (as it appears above)[16]
- Figure 12.3c Editable Slide (can be formatted as desired)[17]

12.3.2 References

A. Department of Health and Human Services. Agency for Healthcare Research and Quality.
B. Department of Labor. Bureau of Labor Statistics.

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[16]https://hub.mili.csom.umn.edu/content/m10099/latest/12.3cIMG.ppt
[17]https://hub.mili.csom.umn.edu/content/m10099/latest/12.3cDATA.ppt

C. Holahan J and S Zedlewski. Who Pays for Health Care in the United States? Implications for Health System Reform. Inquiry 1992; 29:231-48.

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12.4 12.4 Per Capita Health Spending Increases with Age[18]

Total health spending by the "oldest old" is approximately nine times as much as is spending by school-age children (figure 12.4a). These numbers are for only the civilian non-institutionalized population. Because approximately one in six of the "oldest old" (age 85 and over) are in nursing homes and the average annual cost of a nursing home stay exceeds $75,000, this ratio would be considerably higher were costs of the nursing home population included.

12.4a Annual health spending increases sharply by age; health costs for the "oldest old" are approximately nine times as high as for school-age children

Per capita health spending (2007 dollars)
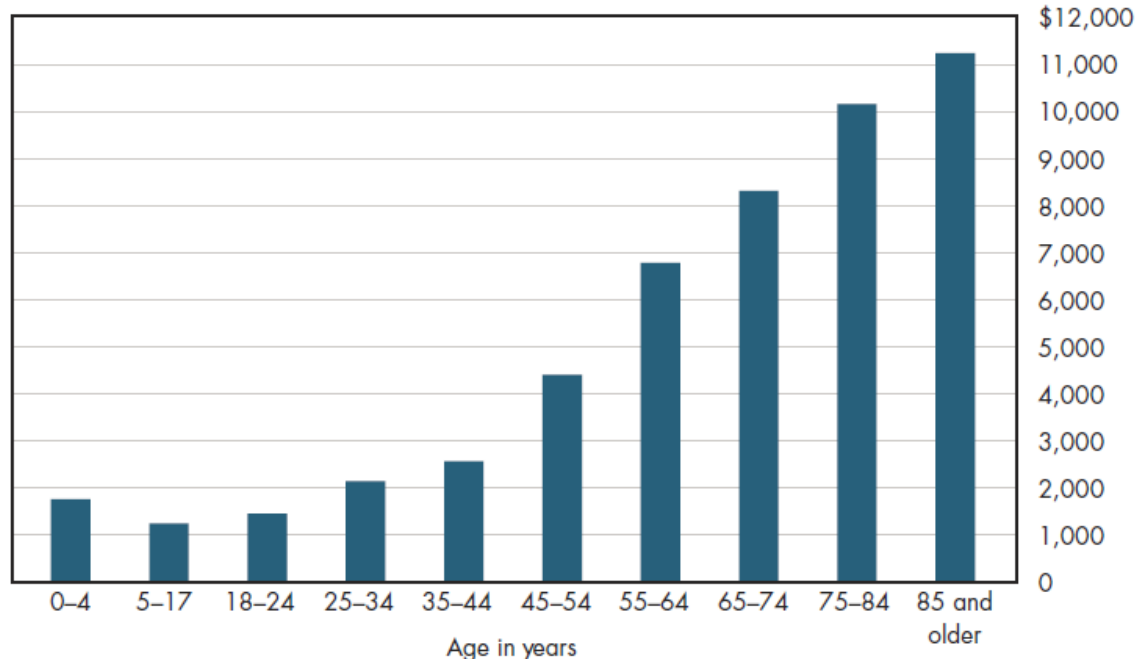
    The relatively low expense for children helps explain why it has been easier politically to secure expansions in Medicaid and SCHIP coverage for children rather than for non-elderly adults. Expenditures at childbirth are one important reason why pre-school health spending is higher than for school-age children. Forty percent of births are covered by Medicaid, which contributes to higher spending in the postnatal period, especially for newborns who otherwise would have been uninsured.

    Conversely, the relatively low spending among those ages 18-34 helps explain why these so-called "young invincibles" tend to have a much higher rate of being uninsured. In the group market, premiums are community-rated, which often makes them not a particularly good deal for young adults unless the employer substantially subsidizes the premium. In some states, the non-group market also faces community- rating restrictions or what is called "modified community rating." In many of these states, insurers can offer different

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[18]This content is available online at <https://hub.mili.csom.umn.edu/content/m10100/1.1/>.

rates based on age but within rating bands. The new health reform law will do the same. The difference between premiums for the most expensive age category and the lowest ages cannot vary by more than a factor of 3:1, even though it is clear from figure 12.4a that actuarially, the cost difference between age categories is substantially greater. The consequence will be higher rates for young adults than they would otherwise face in a less regulated environment.

Between 1977 and 2004, the average annual increase in expenditures declined for every major age category (figure 12.4b). These declines were much greater for children and the elderly than for other groups. Should the health reform law be fully implemented, this downward trend might reverse itself for two reasons. First, the expansion of coverage to tens of millions of uninsured will boost their previous levels of spending. Second, various regulations are having the effect of increasing premiums in the short run.

12.4b The rate of increase in per capita health spending declined for all age groups between 1977 and 2004, though at varying rates

Compound annual growth rate in per capita health spending
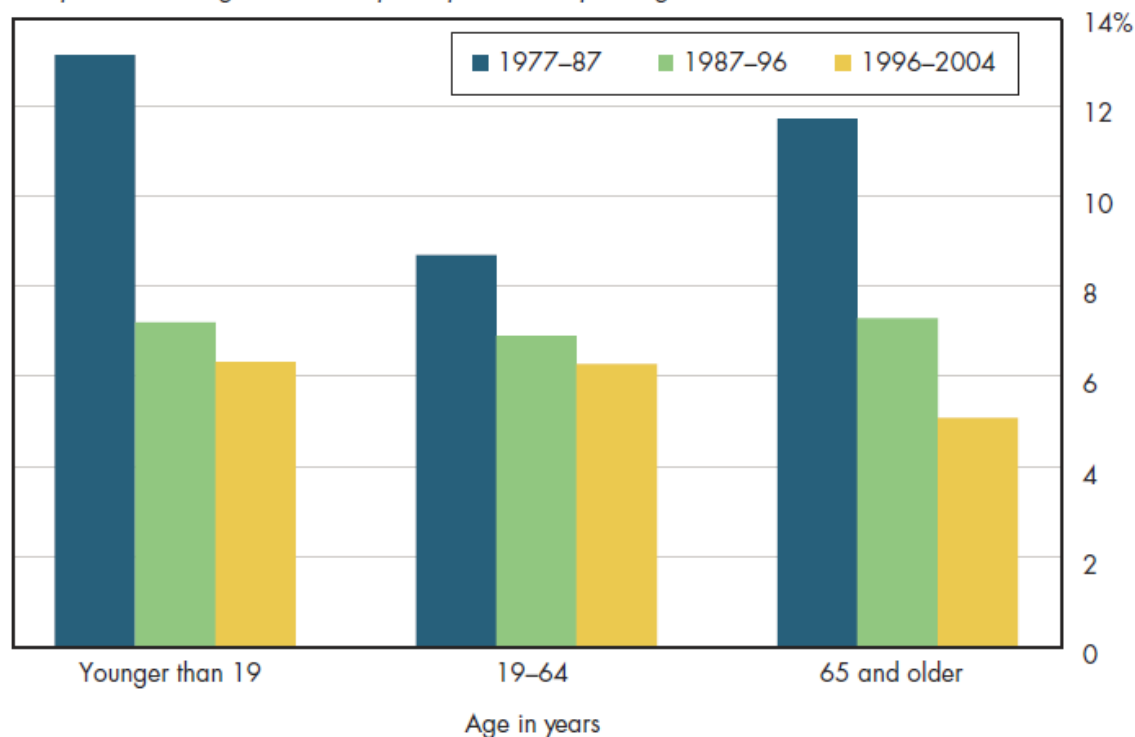
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[22]https://hub.mili.csom.umn.edu/content/m10100/latest/12.4bDATA.ppt

12.4.2 References

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B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.
C. Waldo DR, ST Sonnefeld, DR McCusick and RH Arnett III. Health Expenditures by Age Group, 1977 and 1987. Health Care Financing Review 1989; 10(4):111-20.

12.5 12.5 Difference between Men and Women's Health Costs Depends on Age[23]

When spending by gender is separated, the rise in spending with age no longer is inexorable. In reproductive years, women's health expenditures are approximately twice as large as that for men (figure 12.5). In 2007, the average childbirth cost $8,800. Because the average fertility rate is 2.1 births per female age 15-44, this alone would add more than $500 a year to annual spending by females. Figure 12.5 is indexed to health spending for males age 18-24 rather than in raw dollars. This difference between men and women during childbearing years is approximately $1,000; thus, childbirth accounts for much but not all of the difference.

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[23]This content is available online at <https://hub.mili.csom.umn.edu/content/m10101/1.1/>.

12.5 From childbirth through reproductive years and in early years of retirement, health spending for females is higher than for males

Index: 100=annual per capita health spending for males 18–24 (2007)

100 = $1,045 per year

Age in years
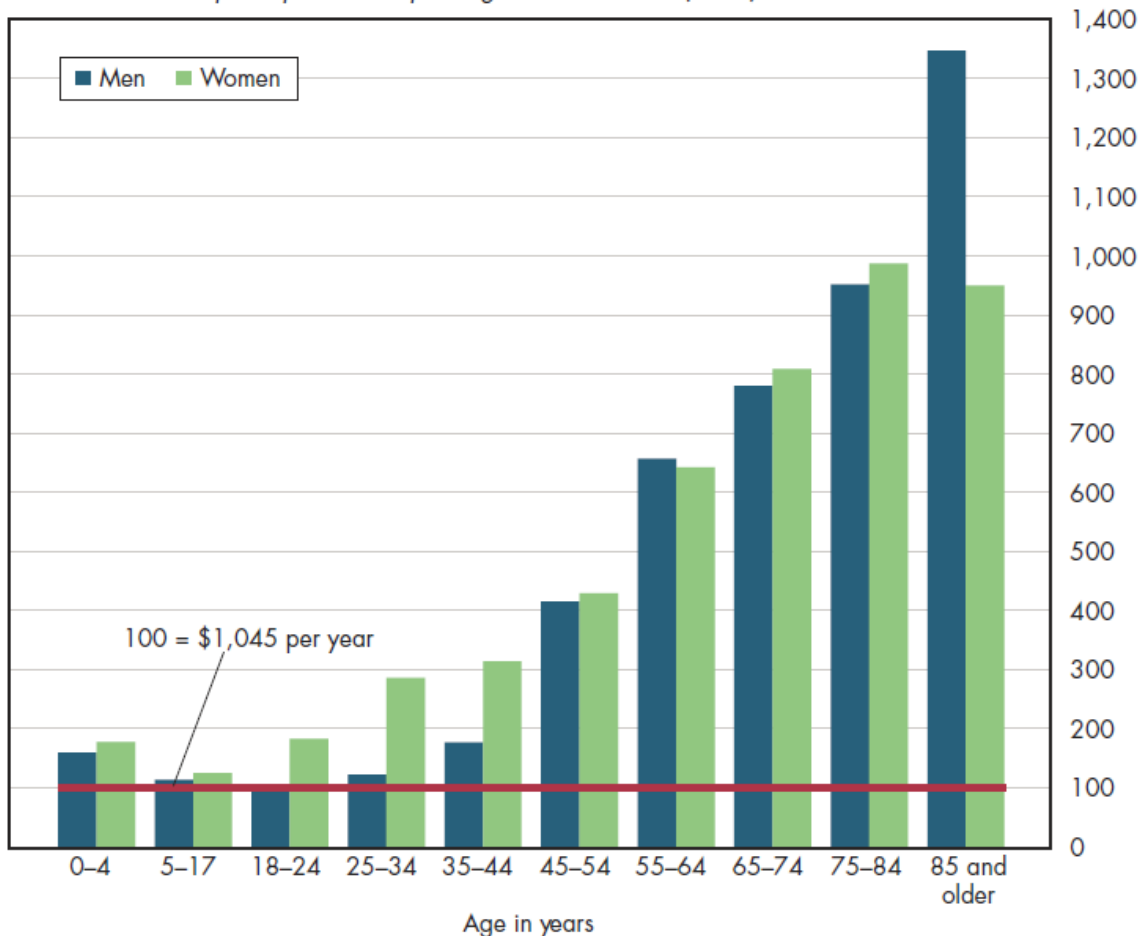
Female health spending also is slightly more in the early years of retirement, but for the "oldest old," there is a dramatic shift. Men's health spending soars to more than 15 times the level of their 18 to 24-year-old counterparts, but women's spending actually declines. Recall that these data exclude the institutionalized population. Because women have a higher rate of nursing home use compared with men at all ages 65 and older, inclusion of nursing home costs likely would yield a different result. With 16 percent of oldest-old women in nursing homes and average nursing home costs of approximately $75,000 a year, this alone would add more than $10,000 to their per capita spending but only half that amount to men's.

Much of the male-female difference in spending at age 85 and older relates to the high cost of dying. Decedents cost approximately 50 percent more than do survivors of the same age and diagnosis. However, they cost several multiples of the spending made by the average survivor at any given age (decedents are more likely to be sick). Because female life expectancy at age 85 is more than 20 percent higher than that of men's, a higher share of remaining lifetime health costs for males will consist of decedent spending.

End-of-life costs account for approximately 10-12 percent of all health spending. The exact fraction that is publicly financed is unknown. Approximately 80 percent of decedents qualify for Medicare, of whom 20 percent also qualify for Medicaid. Assuming that 100 percent of costs for "dual eligibles" and only half of costs for Medicare eligibles are covered by public insurance, this would imply that taxpayers fund approximately half of end-of-life care. The true number likely is higher.

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12.6 12.6 Regional Differences in Health Spending per Capita Have Narrowed then Widened[26]

There is approximately a 40 percent difference between the regions having the highest and lowest health expenditures per capita (figure 12.6a). New England's per capita spending is more than 20 percent higher than the national average, and spending in the Rocky Mountain states is approximately 15 percent less than the U.S. average. This overall difference is approximately the same today as it was in the year Medicare and Medicaid started.

12.6a Regional differences in per capita health spending narrowed from 1966 to approximately 1985 and widened thereafter

Index: per capita health spending by location of service (100=U.S. average)
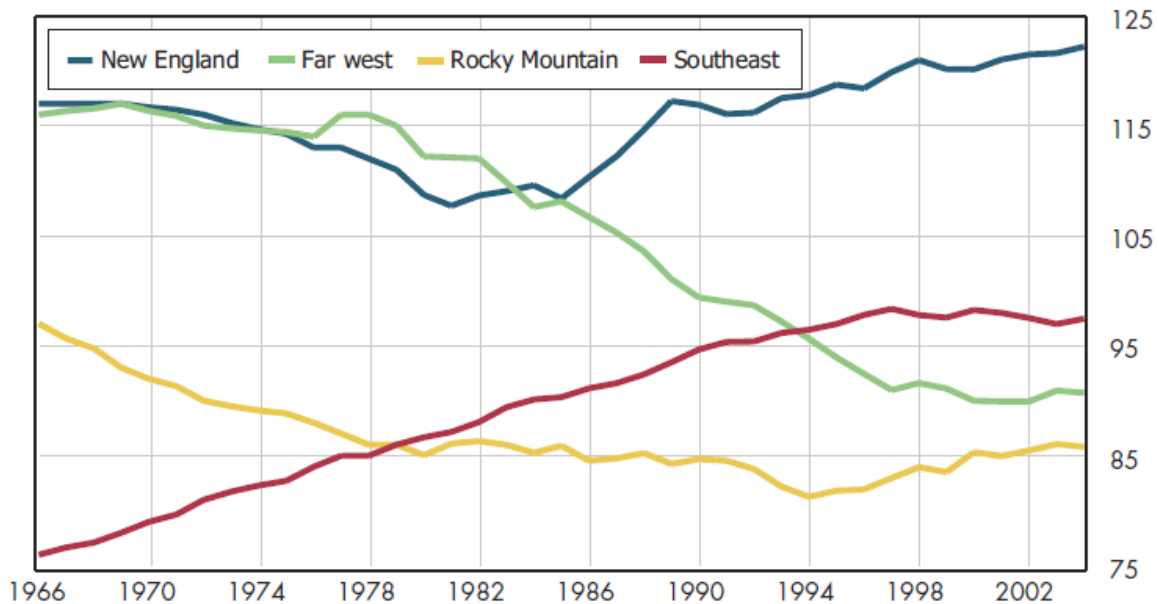
Note: Data not available for years 1967–68, 1970–71, or 1973–75, so they have been interpolated to avoid distorting the length of the bottom axis.

What has changed, however, are the relative ranks of some of the regions. The most dramatic change occurred in the Far West region, which in 1966 had the second highest level of per capita health spending,

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[24]https://hub.mili.csom.umn.edu/content/m10101/latest/12.5IMG.ppt
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barely behind that of New England. In the decades that followed, the region's spending fell from 15 percent above the national average to approximately 10 percent below the average by 2004 (the latest year these data are available). The Rocky Mountain region also improved its relative position by approximately 10 percentage points.

In contrast, the Southeast climbed from having expenditures 25 percent below the nation's to an amount that by 2004 was only 5 percent lower. New England reduced its relative spending from 1966 to the early 1980s but thereafter gained approximately 15 percentage points relative to the U.S. average.

No single explanation for these trends exists. The Far West result was driven largely by California, which in the 20 years before 2004, arguably had the most competitive health care system in the country. New England is notable for generally having taken a more regulatory approach to health cost containment (refer to figure 14.3). These contrasting approaches to health regulation surely are not the only explanation for these large changes. However, the differences in approaches were so stark that it seems unlikely that they contributed nothing to New England's now having a level of health spending that is 35 percent higher than that of the Far West.

During at least half of the twentieth century, per capita incomes across regions had been converging until the mid-1970s, after which they grew somewhat (figure 12.6b). As an approximation, health spending per capita has mirrored this trend.

12.6b Regional income disparities have narrowed considerably over the past 80 years but have widened somewhat since 1979
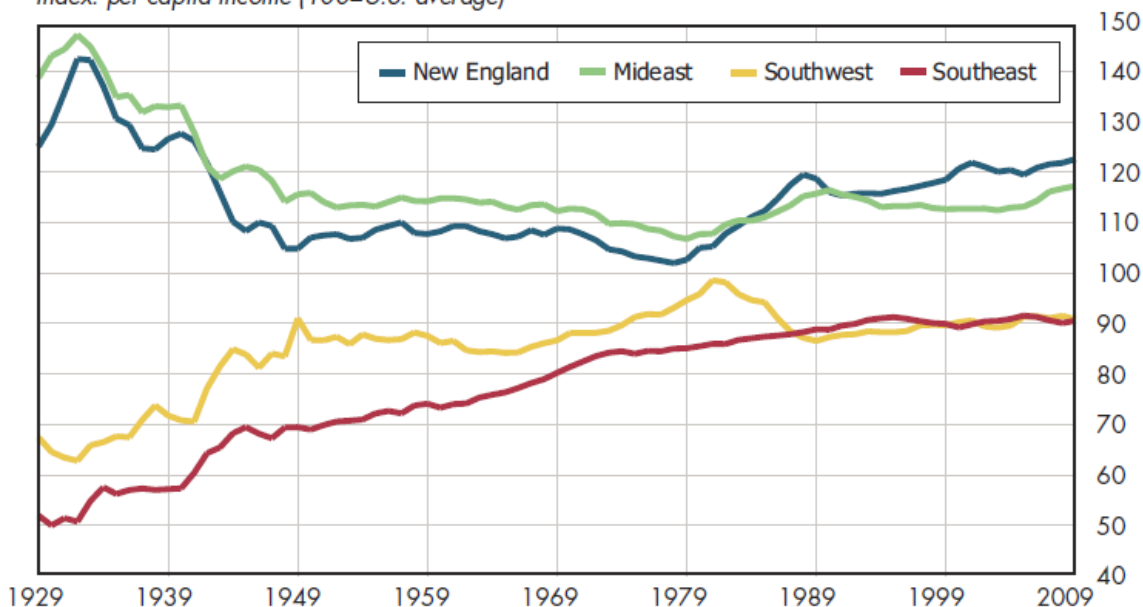
Note: New England = CT, ME, MA, NH, RI, VT; Southeast = AL, AR, FL, GA, KY, LA, MI, NC, SC, TN, VA, WV; Mideast = DE, DC, MD, NJ, NY, PA; Southwest = AZ, NM, OK, TX.

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12.6.2 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.

12.7 12.7 Regional Differences in Health Spending Burden Have Narrowed then Increased[31]

What matters more to citizens and policymakers is the relative burden of health spending rather than its absolute level. An approximate measure of this burden examines state health spending as a share of gross state product (the state equivalent of gross domestic product). In contrast with per capita spending, this measure declines with per capita income (figure 12.7a). That is, the states with the highest per capita incomes tend to have lower health spending burdens. The best-fitting prediction line explains only 37 percent of the differences across states; thus, many other factors must determine the size of any given state's health spending burden. Recall that Mississippi had the lowest health spending per capita, but its relative spending burden is higher than any other state's except Maine.

12.7a Differences in per capita income alone account for more than 30 percent of differences in health spending burdens across states

Index: health spending as a percent of gross state product, 2004 (100=U.S. average)

Index per capita income, 2004 (100=U.S. average)
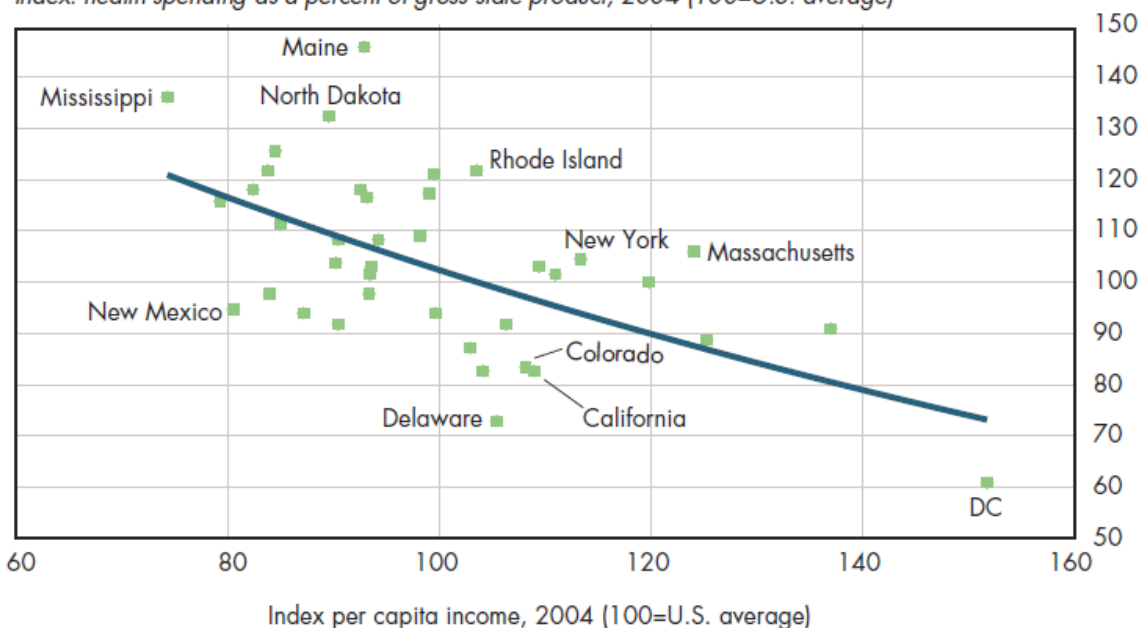
However, even according to this view, several states in the Northeast region other than Maine have burdens visibly higher than would be predicted from their level of income. Whereas California had a level of

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per capita spending almost 20 percentage points lower than would be expected from the state's per capita income, its burden is only 10 percentage points lower.

At the regional level, one explanation why New England's per capita health spending grew so high is that it could afford to do so. Although its per capita spending was 22 percent higher than the national average in 2004, its burden was only 6 percent higher (figure 12.7b). Even under this alternative view, the Far West made dramatic gains relative to the nation. Its burden was the same as the national average in 1980 but by 2004 had fallen to 15 percentage points below that average. For the regions as a group, differences declined quickly between 1980 and 1987. In those years, all regions had burdens within 7 percent of the U.S. average.

12.7b In only 25 years, there have been large changes in the relative burden of health spending across regions

Index: health spending as a percentage of gross state product (100=U.S. average)
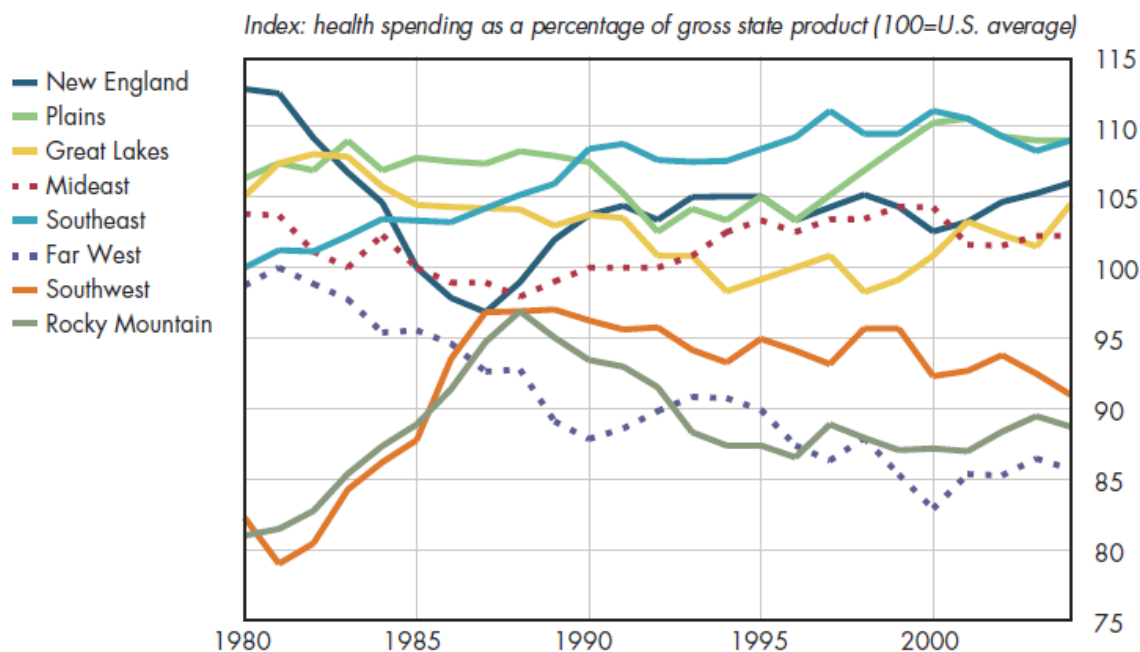
Note: New England = CT, ME, MA, NH, RI, VT; Far West = CA, NV, OR, WA, AK, HI; Rocky Mountain = CO, ID, MT, UT, WY; Southeast = AL, AR, FL, GA, KY, LA, MI, NC, SC, TN, VA, WV; Mideast = DE, DC, MD, NJ, NY, PA; Southwest = AZ, NM, OK, TX; Great Lakes = IL, IN, MI, OH, WI; Plains = IA, KS, MN, MO, NE, ND, SD.

Subsequently, the spread between the regions has grown to approximately 25 percentage points between the Far West and the Southeast, which has a burden approximately 15 percent above the average.

12.7.1 Downloads

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[32]https://hub.mili.csom.umn.edu/content/m10103/latest/12.7aIMG.ppt
[33]https://hub.mili.csom.umn.edu/content/m10103/latest/12.7aDATA.ppt
[34]https://hub.mili.csom.umn.edu/content/m10103/latest/12.7bIMG.ppt
[35]https://hub.mili.csom.umn.edu/content/m10103/latest/12.7bDATA.ppt

12.7.2 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.

Chapter 13

Chapter 13: Poverty and Health

13.1 13.1 Millions Are Categorized as Poor because Medical Expenditures Are Not Taken into Account[1]

The term *poverty* not only implies having less income than someone else in similar circumstances or less income than one would like, but it means an economic condition of sufficient concern to elicit sympathy from others, and possibly to raise the question of social action to correct it. No single definition is possible. Whether one falls below this threshold varies by country, historical epoch, and even among citizens of the same country at a single time.

Scientists or economists cannot define poverty. They can describe only whatever definition is being measured. Others would have to decide whether that measure conforms to what they have in mind when they think of poverty. Figures 13.1a and 13.1b show the percentage of the U.S. population living below poverty according to various definitions. These data do not encompass the full range of possibilities. They highlight how measured poverty rates depend on the alternative manner in which experts have suggested medical expenses should be treated. These definitions include:

A. The official standard—cash income below the official threshold of three times the cost of minimum food needs in 1963, adjusted by changes in the consumer price index
B. Similar to A, but adding the value of health insurance supplements
C. Similar to B, but adding the cash value of Medicare benefits
D. Similar to C, but adding the cash value of Medicaid benefits
E. One standard recommended by the National Academy of Sciences (NAS) in which a family's actual medical out-of-pocket (OOP) expenses, inclusive of health insurance premiums, are subtracted from income (compared with a poverty threshold that excludes medical spending). Note that the NAS method differs from the official standard in other respects.
F. An alternative standard recommended by NAS in which expected medical out-of-pocket costs are added to the poverty thresholds

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10092/1.1/>.

13.1a Taking into account medical expenditures decreases the estimated number below poverty by up to 4.5 million people

Total number below poverty line, in millions (2008)
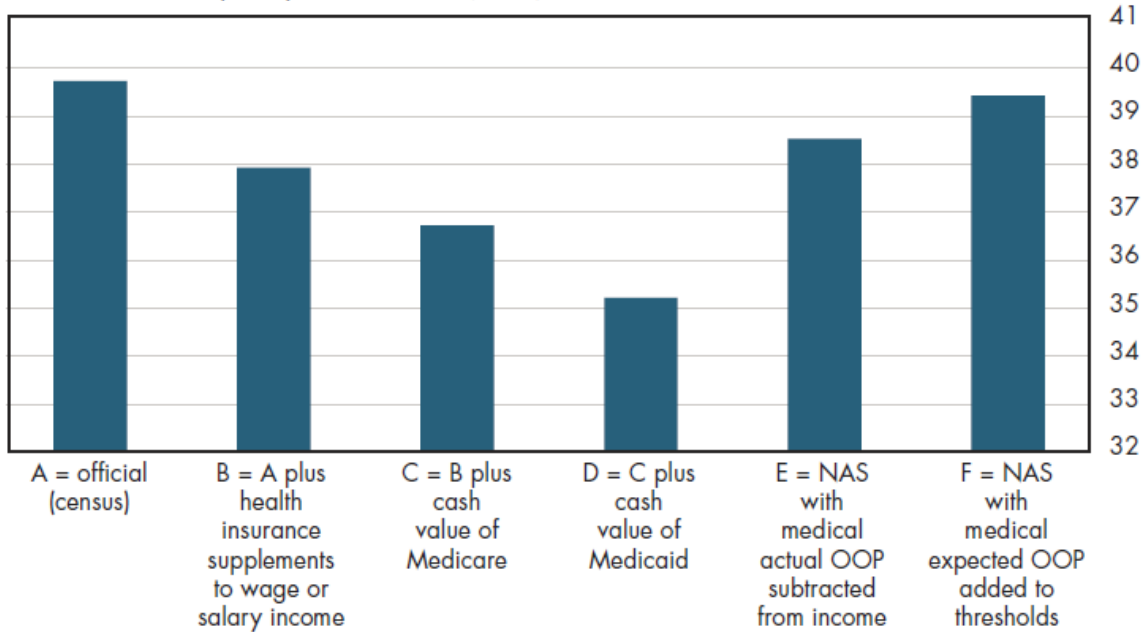
13.1b How medical expenses are treated in measuring poverty has a negligible impact on measured trends in poverty rates

Percentage of US population below poverty line

— A = Official (census)
— B = A plus health insurance supplements to wage or salary income
— C = B plus cash value of Medicare
▪ ▪ D = C plus cash value of Medicaid
— E = NAS with actual medical OOP subtracted from income
▪ ▪ F = NAS with expected medical OOP added to thresholds
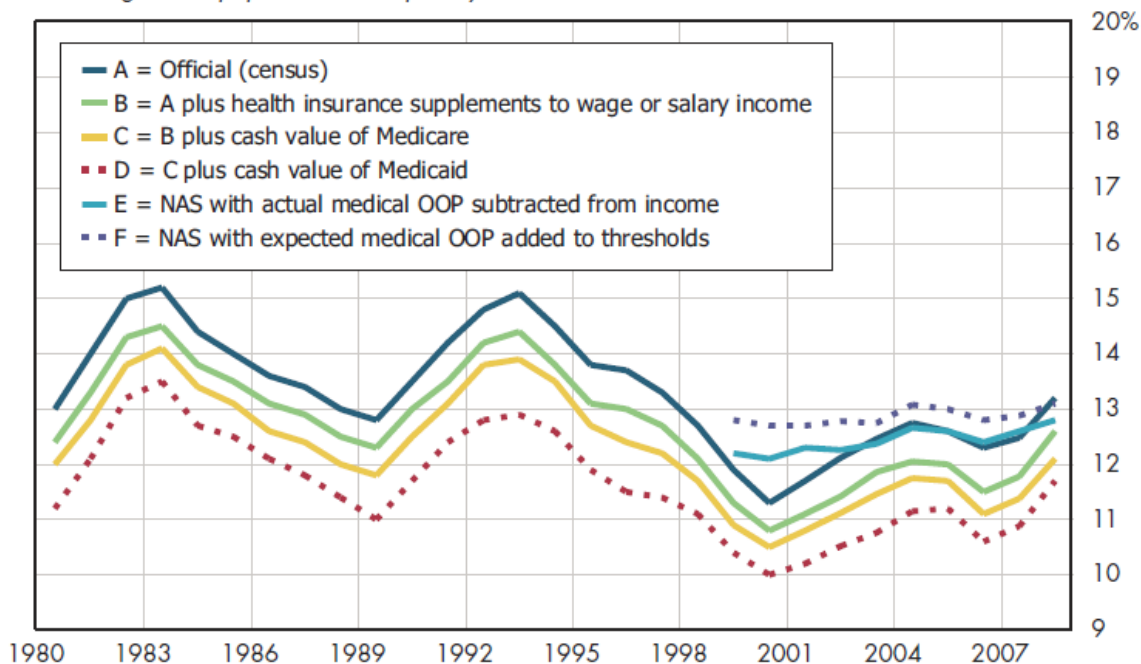
Note: NAS series not available prior to 1999.

Using definition D reduces measured poverty by approximately one-ninth. This is a modest relative change, but it would reduce the estimated number of poor in the United States by approximately 4.5 million in 2008 (figure 13.1a). However, how medical expenses are treated in the definition of poverty has only a negligible impact on measured trends in poverty rates (figure 13.1b).

13.1.1 Downloads

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13.1.2 References

A. Department of Commerce. Bureau of the Census.

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[2]https://hub.mili.csom.umn.edu/content/m10092/latest/13.1aIMG.ppt
[3]https://hub.mili.csom.umn.edu/content/m10092/latest/13.1aDATA.ppt
[4]https://hub.mili.csom.umn.edu/content/m10092/latest/13.1bIMG.ppt
[5]https://hub.mili.csom.umn.edu/content/m10092/latest/13.1bDATA.ppt

13.2 13.2 Government Insurance Covers Half of the Poor[6]

Only approximately half of those counted as poor have government insurance (primarily Medicaid). Approximately 30 percent are uninsured (figure 13.2a). Many assume that Medicaid covers the poor. In fact, however, eligibility for Medicaid historically has been restricted to certain categories of individuals: children, pregnant mothers and newborns, single parents, disabled, and the elderly. Thus, in most states, someone not fitting one of these categories can never qualify for Medicaid, even if they have no income or have medical bills that exceed $100,000.

13.2a Approximately half the non-elderly poor have government insurance, while 30 percent are uninsured; the uninsured rate declines with income

Percentage of U.S. population younger than age 65 with coverage shown (March 2008)

Family income as a percentage of poverty (2007)
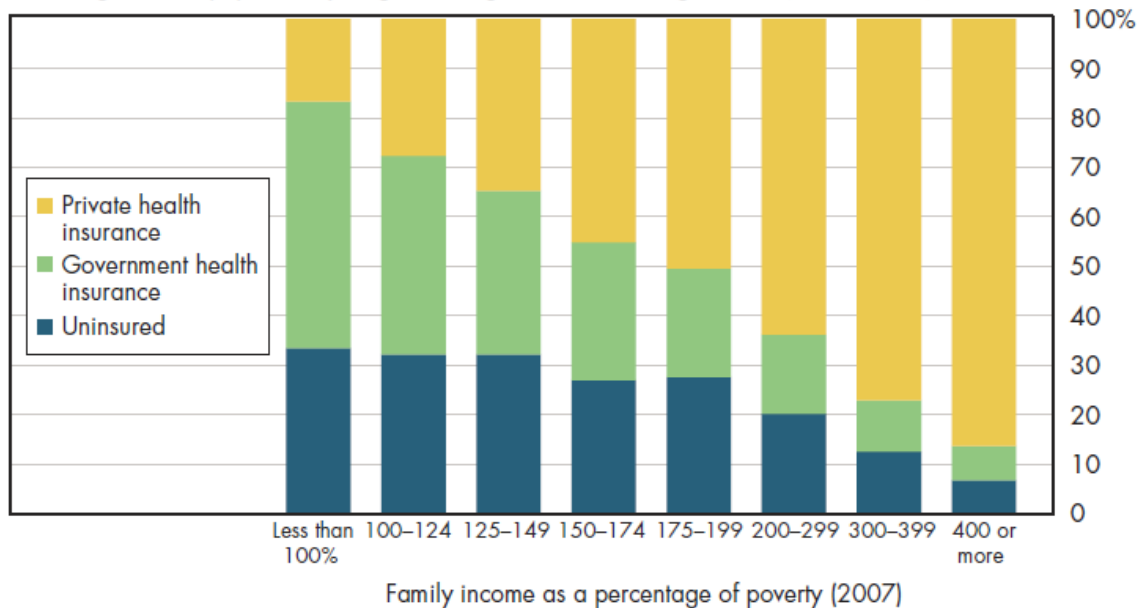
    Many near-poor can qualify for Medicaid. Although thresholds vary by state, federal law requires states that participate in Medicaid to cover pregnant women, infants and children to 133 percent of poverty, and children age 6-19 at 100 percent of poverty. Most states choose to cover them at a much higher level (for example, 185 percent of poverty and some as high as 300 percent of poverty). Most states cover the elderly and disabled who are between 75 and 100 percent of poverty. A few states have elected to provide optional coverage to other groups, for example, unemployed parents. Others have either gotten federal waivers or used state-only funds to cover all individuals below poverty. The new health reform law eradicates these categorical distinctions and if fully implemented will provide Medicaid coverage to all Americans living at less than 133 percent of poverty.

    The chances of being uninsured drop steadily as incomes rise, and the chances of having private coverage increase with income. Public coverage can be viewed as filling the gap; because the figure focuses on the non-elderly population, most of this public coverage is through Medicaid. However, there is considerable evidence of "crowding out" of private insurance by Medicaid; one should not infer that absent government help, the uninsured rate for the poor would exceed 80 percent, for example.

    More than half of the uninsured and 60 percent of those who have government insurance have incomes less than 200 percent of poverty (figure 13.2b). Conversely, among those who have private insurance, approximately only one in eight is poor or near poor.

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[6]This content is available online at <https://hub.mili.csom.umn.edu/content/m10093/1.1/>.

13.2b More than half the uninsured and 60 percent of those who have government insurance have incomes below 200 percent of poverty

Percentage of U.S. population younger than age 65 (March 2008)
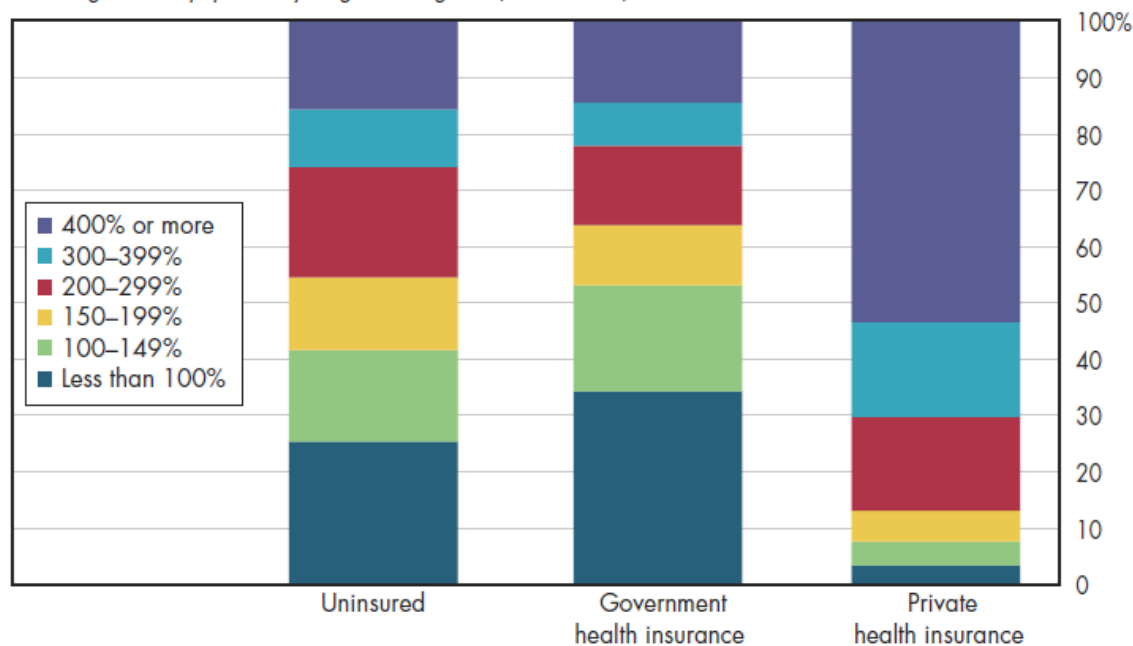
Note: Individuals who have both government and private health insurance were placed in the government health insurance category.

13.2.1 Downloads

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- Figure 13.2b Editable Slide (can be formatted as desired)[10]

13.2.2 References

A. Department of Commerce. Bureau of the Census.

13.3 13.3 Lower-Income People Have Worse Health[11]

It has long been known that the poor generally are in worse health than is the rest of the population. Numerous methods can measure health status. Although not perfect, self-reported health status is a surprisingly

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[7]https://hub.mili.csom.umn.edu/content/m10093/latest/13.2aIMG.ppt
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[9]https://hub.mili.csom.umn.edu/content/m10093/latest/13.2bIMG.ppt
[10]https://hub.mili.csom.umn.edu/content/m10093/latest/13.2bDATA.ppt
[11]This content is available online at <https://hub.mili.csom.umn.edu/content/m10094/1.1/>.

good measure. Careful studies show that self-reported health status does a good job of predicting future mortality. That is, those who report their health status as "poor" are far more likely to die within the next year than are those who view their health as "good" or "excellent."

Using this measure, only approximately 40 percent of the poor say that their health is excellent compared with almost half of the near-poor and almost seven in 10 of those who have incomes above 200 percent of poverty. Conversely, more than 25 percent of the poor are in fair or poor health compared with fewer than 10 percent of those above 200 percent of poverty (figure 13.3a).

13.3a Based on self-reported health status, the percentage of people in fair or poor health is highest among the poor and near-poor

Percentage of individuals (March 2009)

Family income as a percentage of poverty (2008)
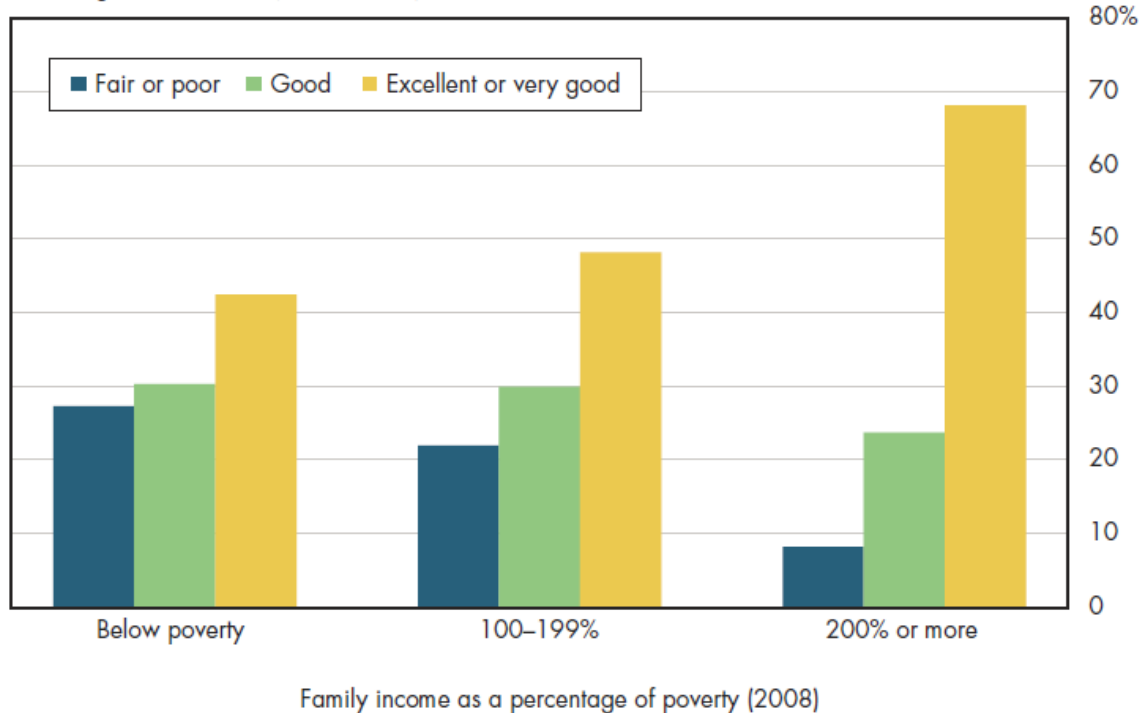
This relationship works in both directions. Some people are poor because of poor health. Poor health might prevent them from working or lower the amount that they can earn. Poverty itself can contribute to poor health. Those who live in poverty are more likely to be concentrated in areas that have higher crime rates, for example, putting them at risk of a violent injury that might permanently compromise their health for the rest of their lives. Likewise, poor people are more likely to drive less expensive, lighter cars that put them at higher risk of an auto-related injury. For many reasons too complicated to explain here (and too poorly understood), smoking rates and obesity also tend to be higher among those who have the lowest incomes.

Those who have the greatest general, objective need for health services also are least able to pay for such care. Consequently, how to finance such care is a social problem faced by all nations.

Socioeconomic factors explain only some of the persistent health differences across racial and ethnic groups. Even after accounting for higher poverty rates among blacks and Hispanics relative to whites, health status differences remain among these groups (figure 13.3b). The degree of these disparities grows smaller as incomes rise. Thus, economic growth and rising incomes will help naturally dissipate many disparities. However, they cannot be expected to disappear entirely even if incomes were equalized.

13.3b In all poverty categories, Hispanics have the best self-reported health status, followed by whites, while blacks have the worst self-reported health status

Percentage of individuals reporting poor or fair health (2003)
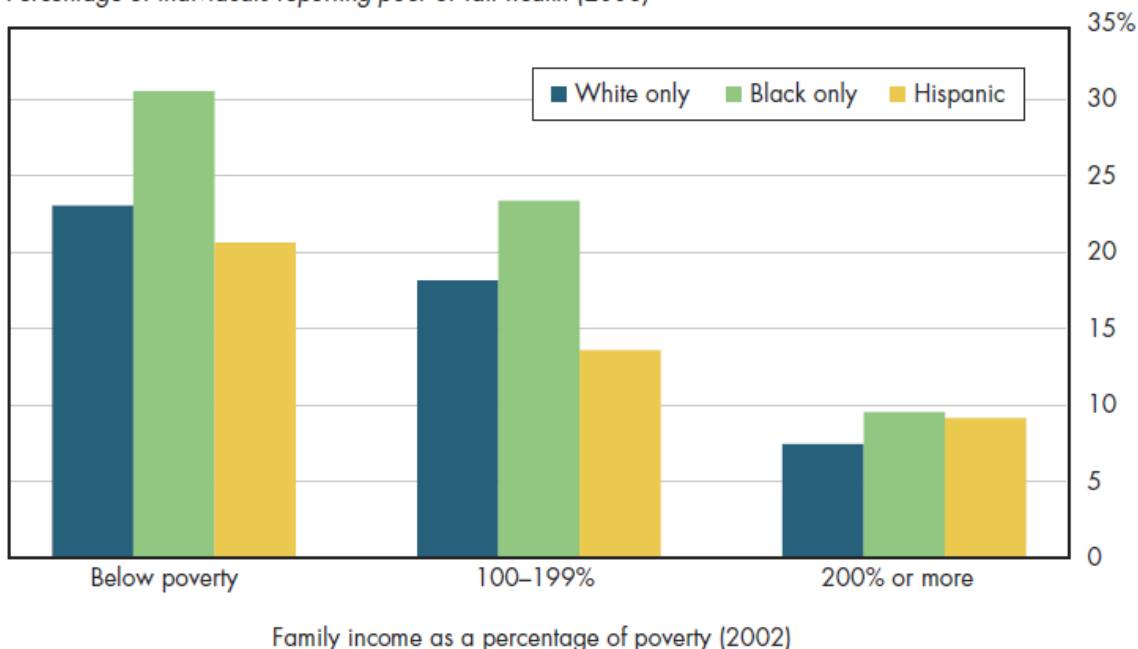
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- Figure 13.3b Editable Slide (can be formatted as desired)[15]

13.3.2 References

A. Department of Health and Human Services. Centers for Disease Control and Prevention.

13.4 13.4 Poor Children Are Much Less Likely to Have Private Health Coverage than General Population[16]

Among poor children, the number who have no coverage exceeds the number who have employer-based health coverage. As figure 13.4 illustrates, in the general population of children there is a six to one ratio between the number who have employer-sponsored insurance and those who have no coverage. Even so, the chances

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[12]https://hub.mili.csom.umn.edu/content/m10094/latest/13.3aIMG.ppt
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[14]https://hub.mili.csom.umn.edu/content/m10094/latest/13.3bIMG.ppt
[15]https://hub.mili.csom.umn.edu/content/m10094/latest/13.3bDATA.ppt
[16]This content is available online at <https://hub.mili.csom.umn.edu/content/m10095/1.1/>.

of being uninsured among poor children are approximately 30 percent the level among non-elderly adults who are poor. In contrast, the shares of poor and near-poor children who have employer-sponsored health plans are almost identical to those of their counterparts age 18-64.

13.4 Children below poverty are only 25 percent as likely as the general population to have employer-sponsored health coverage

Percentage of individuals who have coverage (March 2008)

Family income as a percentage of poverty (2007)
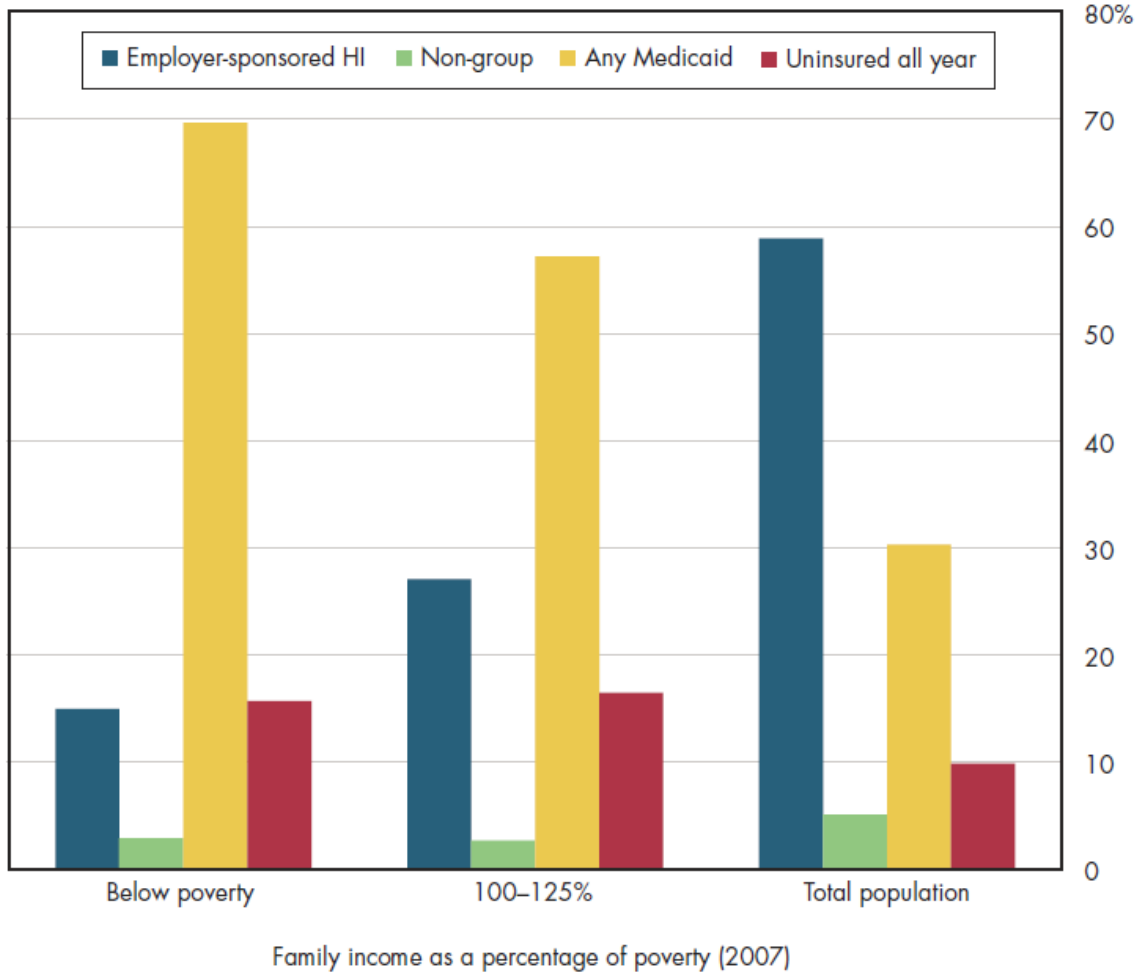
Note: Medicaid includes coverage through SCHIP.

Filling the gap is Medicaid/SCHIP coverage held by almost seven in 10 poor children and almost six in 10 children who are near-poor. The pervasiveness of Medicaid/SCHIP coverage among children in the lowest income households results in 30 percent of children overall who have Medicaid. This is triple the rate seen among non-elderly adults. These numbers understate the true extent of potential coverage. Careful studies show that approximately 25 percent to almost half of uninsured children qualify for Medicaid or SCHIP but their parents decline to enroll the children.

Medicaid "crowd-out" is sizable. In the most recent major expansion of Medicaid/SCHIP for children before the new health reform law, the CBO estimated that 30 percent of those who obtain new government coverage would otherwise have had private coverage. This does not mean that they literally dropped private coverage to get onto Medicaid (although some do). Generally, "crowd-out" consists of formerly unin-

sured individuals who otherwise eventually would have obtained some form of private coverage but for the opportunity to enroll in Medicaid or SCHIP.

Numerous studies have confirmed, using many measures, that access to care for those who have Medicaid is worse than for those who have private coverage. There is solid empirical evidence that low Medicaid fees adversely affect physician participation in the program, including pediatricians or others who might treat children. Medicaid on average pays less than 60 percent of the price of medical services delivered by physicians in the private sector and less than 75 percent of Medicare fees.

13.4.1 Downloads

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13.4.2 References

A. Department of Commerce. Bureau of the Census.

13.5 13.5 Medicaid Covers Less than 1/3 of Poor Non-Elderly Adults[19]

Twenty percent of poor adults younger than age 65 have private health insurance coverage (figure 13.5a). Among those who have incomes from 100-125 percent of poverty, this amount is approximately 30 percent. Yet slightly more than 40 percent of both groups were uninsured. Approximately one in 20 individuals in both low-income groups had non-group coverage; thus, this cannot explain the difference. This percentage was not much different from the share of the total adult population younger than age 65 having non-group coverage.

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[17]https://hub.mili.csom.umn.edu/content/m10095/latest/13.4IMG.ppt
[18]https://hub.mili.csom.umn.edu/content/m10095/latest/13.4DATA.ppt
[19]This content is available online at <https://hub.mili.csom.umn.edu/content/m10096/1.1/>.

13.5a Poor adults younger than the age of 65 are more than three times more likely to be uninsured all year than to have employer health coverage

■ Employer-sponsored health insurance   ■ Non-group   ■ Any Medicaid   ■ Uninsured all year

Percentage of individuals who have coverage (2008)

Family income as a percentage of poverty
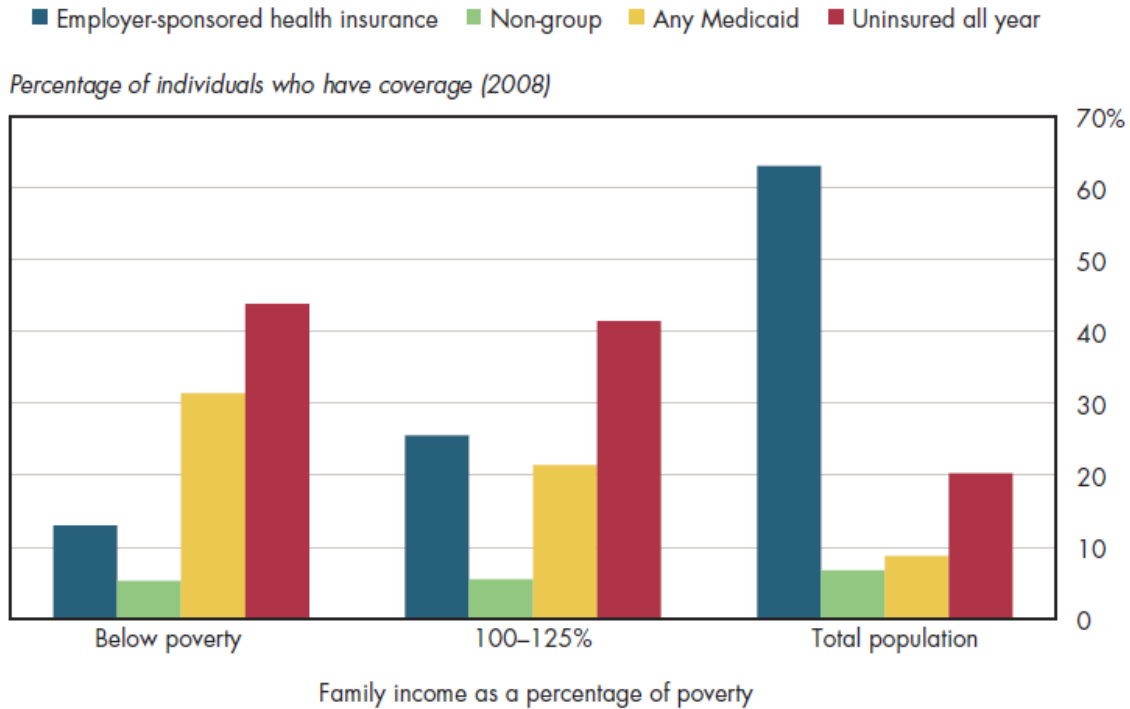
Differences in government coverage explain why the uninsured rate for the poor is almost equal to that of the non-poor despite lower rates of private coverage. Approximately 30 percent of poor adults have some sort of public coverage, most of which is through Medicaid. For the near poor (up to 125 percent of poverty), only one in four have government coverage. As with children, Medicaid accounts for most of this public coverage.

Private coverage among the elderly (age 65 or older) below poverty is approximately 50 percent higher than it is for children or non-elderly adults (figure 13.5b). One in 20 elderly adults below poverty is uninsured because Medicare is available only to those who have a qualified wage history or those able and willing to pay premiums for their coverage.

13.5b A large fraction of the elderly has supplemental Medicare coverage through employers or non-group plans
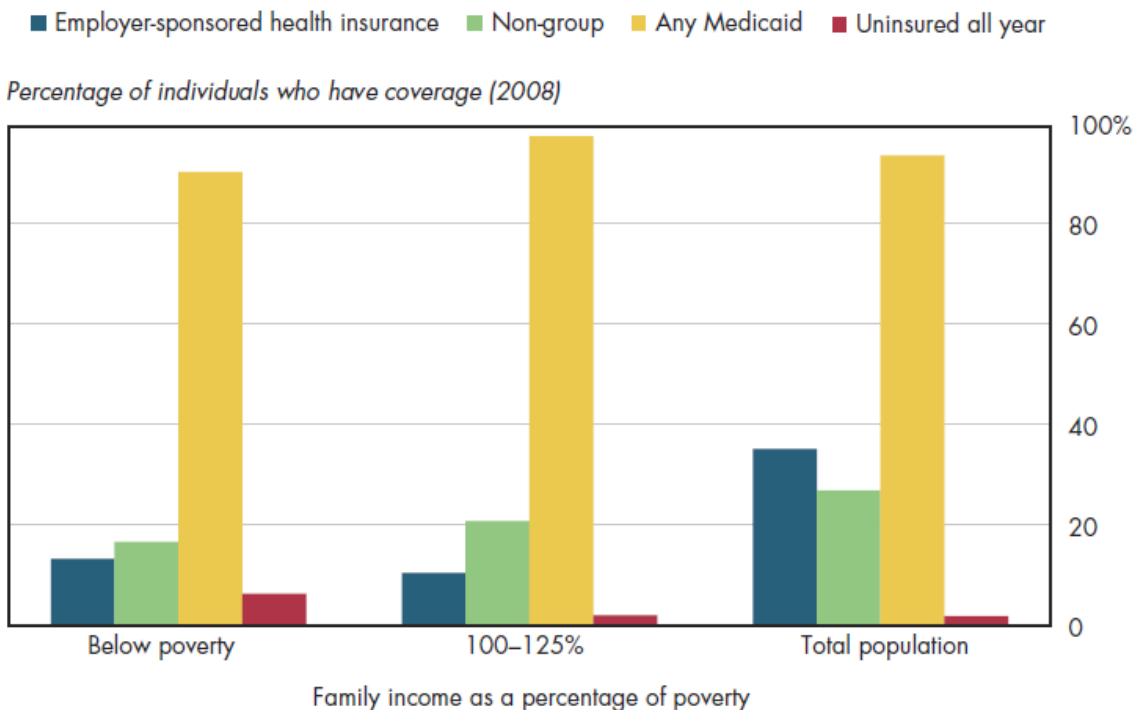
Approximately 25 percent of poor persons who are elderly are "dual eligible" for Medicare and Medicaid. Approximately 20 percent of these live in nursing homes or other long-term-care facilities. Consequently, approximately 45 percent of spending for this group is for long-term care. Medicare covers acute care services, with Medicaid covering any beneficiary premium payments (for Parts B or D) and cost-sharing obligations (deductibles and coinsurance). All told, Medicare finances approximately 65 percent of acute care spending for "dual eligibles."

In contrast, Medicare does not pay for long-term care. It pays for only sub-acute care, that is, time-limited home health or nursing care services needed for rehabilitation following a hospital stay. As a result, Medicaid finances $5 of every $6 in long-term care and sub-acute care services.

13.5.1 Downloads

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13.5.2 References

A. Department of Commerce. Bureau of the Census.

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[21]https://hub.mili.csom.umn.edu/content/m10096/latest/13.5aDATA.ppt
[22]https://hub.mili.csom.umn.edu/content/m10096/latest/13.5bIMG.ppt
[23]https://hub.mili.csom.umn.edu/content/m10096/latest/13.5bDATA.ppt

Chapter 14

Chapter 14: The Structure of the Health Sector

14.1 14.1 Less than Half of US Health Workers Are Employed by Large Firms[1]

More than 70 percent of health sector firms employ fewer than 10 employees (figure 14.1a). This is almost identical to the number for all U.S. private businesses. However, only approximately 10 percent of all health sector workers are employed by such firms, somewhat lower than for private business overall. In fact, relative to all private businesses, health sector workers are somewhat "underrepresented" in all firm-size categories up to 500 workers. In contrast, almost 40 percent of health care employees work in organizations that have 500 or more employees—almost double the national average. In both health care and private industry, such firms account for much less than 1 percent of all firms. This is almost invisible in figure 14.1a.

14.1a Compared with all private-sector workers, a much higher share of health services employees work for large firms

Percentage of total firms or employees within an industry working in firm size (2007)
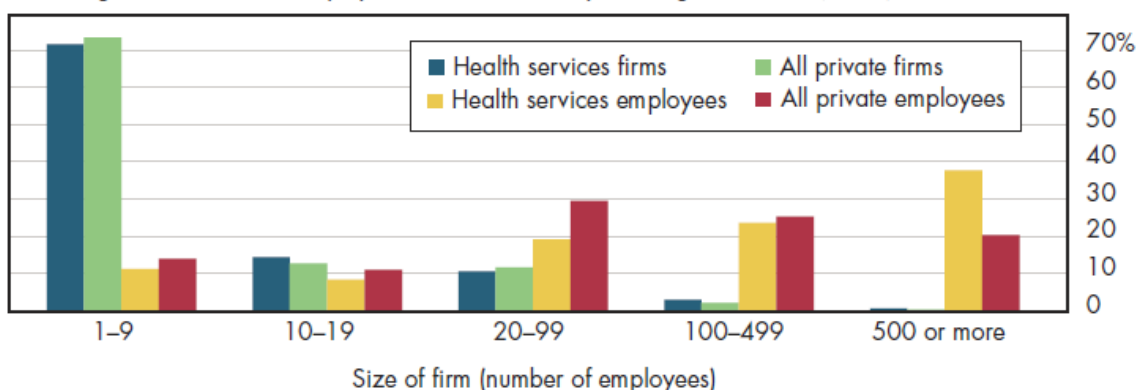
Note: Health services employees include those in ambulatory health care services, hospitals, and nursing homes and other residential care facilities.

At one further level of detail, hospitals, the insurance industry, and pharmaceutical industry represent subsectors in which more than half of workers work in the largest firms. In hospitals, fewer than one in six

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10088/1.1/>.

workers works in facilities that have fewer than 500 employees (figure 14.1b). Not surprisingly, there are few hospitals with fewer than 100 workers. In the insurance industry—specific figures for health insurance are not available—more than half work in the largest firms, but another fourth work in medium-size firms of 100-499 employees. On the goods-producing side of health care, more than half of pharmaceutical manufacturing employees but fewer than 30 percent of medical equipment manufacturing workers work in the largest firms (figure 14.1c).

14.1b More than half of hospital and health insurance employees work for firms that have 500 or more employees

Percentage of employees within an industry working in firm size (2007)
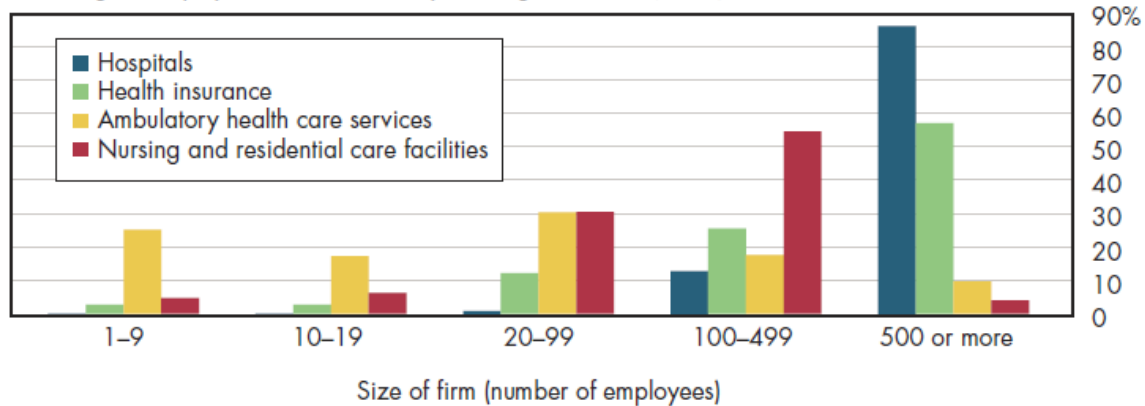
14.1c In the goods-producing area of the health sector, most employees work in medium- or large-size firms

Percentage of total employees within an industry working in firm size (2007)
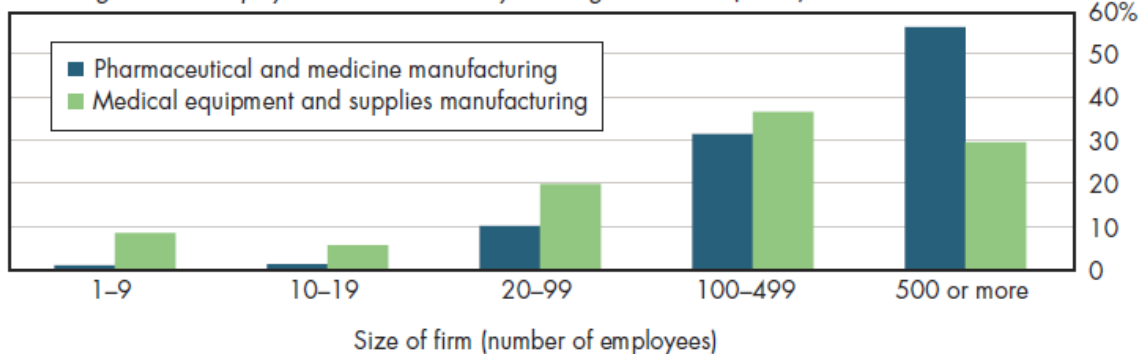
Note that there is no consensus about the dividing line between *large-* and *medium-size* firms. Some draw the line at 100 or 200 workers, but under virtually all definitions, a firm that has 500 or more workers is a large employer. Using the most expansive definition—a cut-off at 100 workers—99 percent of hospital workers, nine in 10 pharmaceutical industry workers, and approximately 75 percent of health insurance workers would be counted as employed by large firms. Over the past 30 years, the percentage of workers accounted for by health services has risen in all firm sizes; such growth has been fastest among the largest organizations.

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14.1.2 References

A. Author's calculations.
B. Department of Commerce. Bureau of the Census.

14.2 14.2 Concentration in Health Insurance Industry[8]

By conventional measures, the health insurance industry is highly concentrated. Some experts worry that lack of competition might result in higher premiums for health coverage than would otherwise prevail in a more competitive market. Economists measure concentration using what is called a Herfindahl-Hirschman Index (HHI). The calculation involves squaring the market shares of each competitor in a market and adding the results. For a monopolist having a market share of 100 percent, the HHI would be 10,000 ($100^2 = 10,000$). Ten competitors each with equal market shares would produce an HHI of 1,000 (10×10^2). For purposes of antitrust regulation, the Federal Trade Commission (FTC) currently views areas with an HHI of 2,500 and more as *highly concentrated*. Transactions that increase the HHI by more than 100 points in highly concentrated markets presumptively raise antitrust concerns.

Using an HHI threshold of 1,800 that the FTC used prior to August 2010, in more than 90 percent of metropolitan statistical areas (MSAs), the market for insurers offering fully insured HMO or PPO plans is highly concentrated. A related measure shows that in more than 90 percent of MSAs, a single insurer for these products accounts for 30 percent of the market (figure 14.2a). In more than 60 percent of markets, the dominant insurer has more than half of all market shares, and in 25 percent of MSAs, this share exceeds 70 percent.

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[2]https://hub.mili.csom.umn.edu/content/m10088/latest/14.1aIMG.ppt
[3]https://hub.mili.csom.umn.edu/content/m10088/latest/14.1aDATA.ppt
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[5]https://hub.mili.csom.umn.edu/content/m10088/latest/14.1bDATA.ppt
[6]https://hub.mili.csom.umn.edu/content/m10088/latest/14.1cIMG.ppt
[7]https://hub.mili.csom.umn.edu/content/m10088/latest/14.1cDATA.ppt
[8]This content is available online at <https://hub.mili.csom.umn.edu/content/m10089/1.1/>.

14.2a By conventional measures, many metropolitan areas appear to have high levels of insurance company concentration

Percentage of MSAs with concentration level
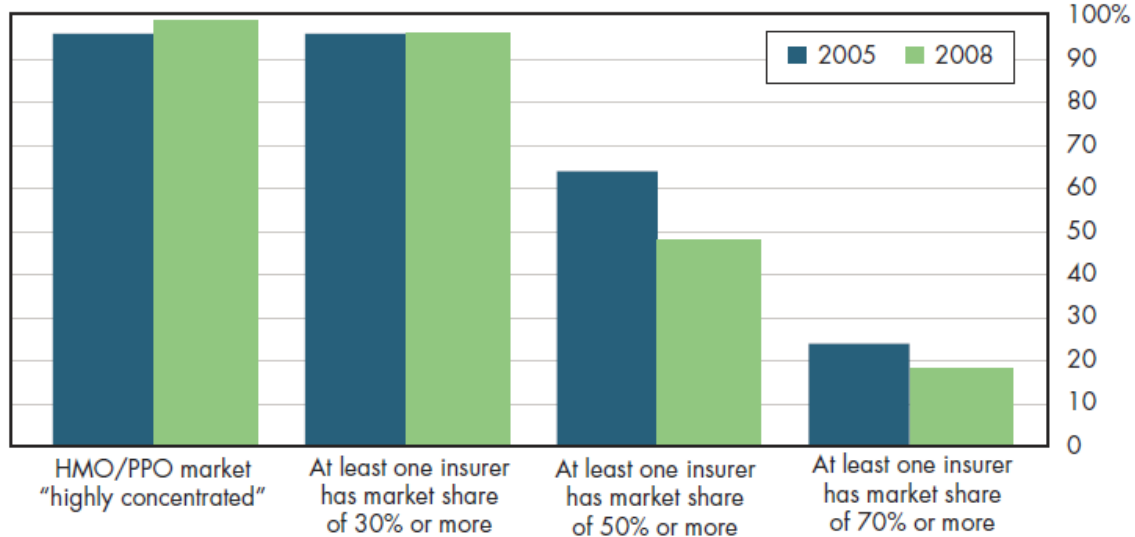
Note: At the time of this analysis, the threshold for "highly concentrated" was a Herfindahl-Hirschman Index score of 1,800 or higher. Since August 2010, the FTC has this threshold at a score of 2,500 or higher. The denominator for the percentages shown was 313 MSAs in 2005 and 359 in 2008.

However, other studies have found much less concentration (figure 14.2b). Moreover, all the foregoing calculations focus on the fully insured market, ignoring self-funded health plans. Most large employers self-fund their health benefits: They absorb the risk and hire a health insurer or third-party administrator to pay claims. Approximately 60 percent of employer coverage is through such plans. Having market power does not mean it can be exercised. The modest profitability levels for health insurers described previously are not consistent with insurers having a widespread ability to demand supra-competitive prices. Although these measures do not paint a completely accurate picture of competitiveness in the health insurance industry, they do suggest that concentration might be increasing.

14.2b It appears that concentration is rising in both the hospital industry and HMO industry

Percentage of MSAs with concentrated or highly concentrated markets
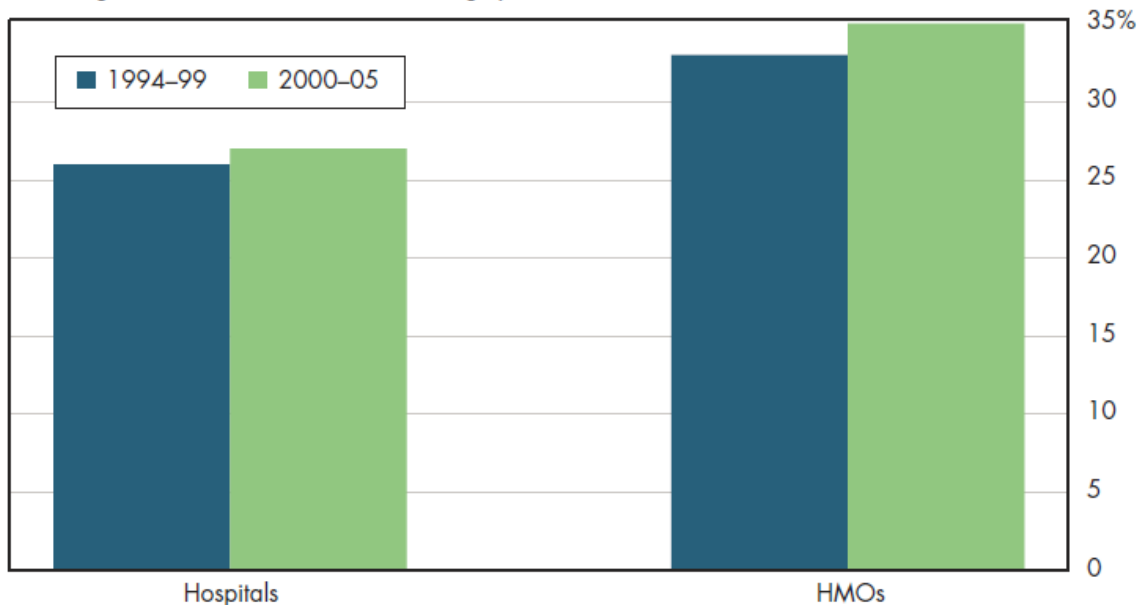
Note: At the time of this analysis, the threshold for "highly concentrated" was a Herfindahl-Hirschman Index score of 1,800 or higher; "concentrated" is defined as an HHI of 1,000–1,800. Since August 2010, the FTC has the first threshold at a score of 2,500 or higher and the second at 1,500–2,500.

14.2.1 Downloads

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- Figure 14.2b Editable Slide (can be formatted as desired)[12]

14.2.2 References

A. American Medical Association. Competition in Health Insurance, 2010 Update. Chicago. 2010. Managed Market Survey ©2008, HealthLeaders-InterStudy.

B. Shen YC, VY Wu and G Melnick. Trends in Hospital Cost and Revenue, 1994-2005: How Are They Related to HMO Penetration, Concentration, and For- Profit Ownership? Health Services Research 2010; 45(1):42-61.

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[9]https://hub.mili.csom.umn.edu/content/m10089/latest/14.2aIMG.ppt
[10]https://hub.mili.csom.umn.edu/content/m10089/latest/14.2aDATA.ppt
[11]https://hub.mili.csom.umn.edu/content/m10089/latest/14.2bIMG.ppt
[12]https://hub.mili.csom.umn.edu/content/m10089/latest/14.2bDATA.ppt

14.3 14.3 US Health Sector Is Highly Regulated[13]

For decades, experts have regarded the health sector as one of the most highly regulated areas of the U.S. economy. State governments license many health providers. In more than 65 percent of states, hospitals, and/or nursing homes must secure a certificate of need—that is, the state's permission—before building or expanding a health facility or adding equipment to it. Health insurers cannot operate in a state without its approval and in some cases, review of its premium rates. FDA approval is required to bring drugs and medical devices to market. Finally, in many states, special rules or limits govern how the courts handle medical liability cases compared with how a bread-and-butter tort case would be adjudicated.

Even this incomplete description of regulation shows that states play an important role in regulation of health services. Consequently, differences across states in the scope and stringency of various health services regulations are quite large.

Figure 14.3 illustrates a flavor of this diversity. As with any index, this one cannot count every possible aspect of regulation. Moreover, even if it could, reasonable people might disagree on how to combine the various scores for potentially dozens of different areas of health services regulation. Should the score assigned to health facilities regulation receive the same weight as the score for regulation of health professionals? With this caveat, this particular ranking seems to show that states in the Rocky Mountain and Far West regions generally regulate health services less (or less stringently, depending on the particular area of regulation being examined) than do states in the Northeast or even Southeastern regions.

14.3 States that have the least amount of health services regulation in 2007 are predominantly located in the South and west of the Mississippi River

Regulation ranking (1 = least)   0–9   10–19   20–29   30–39   40–50
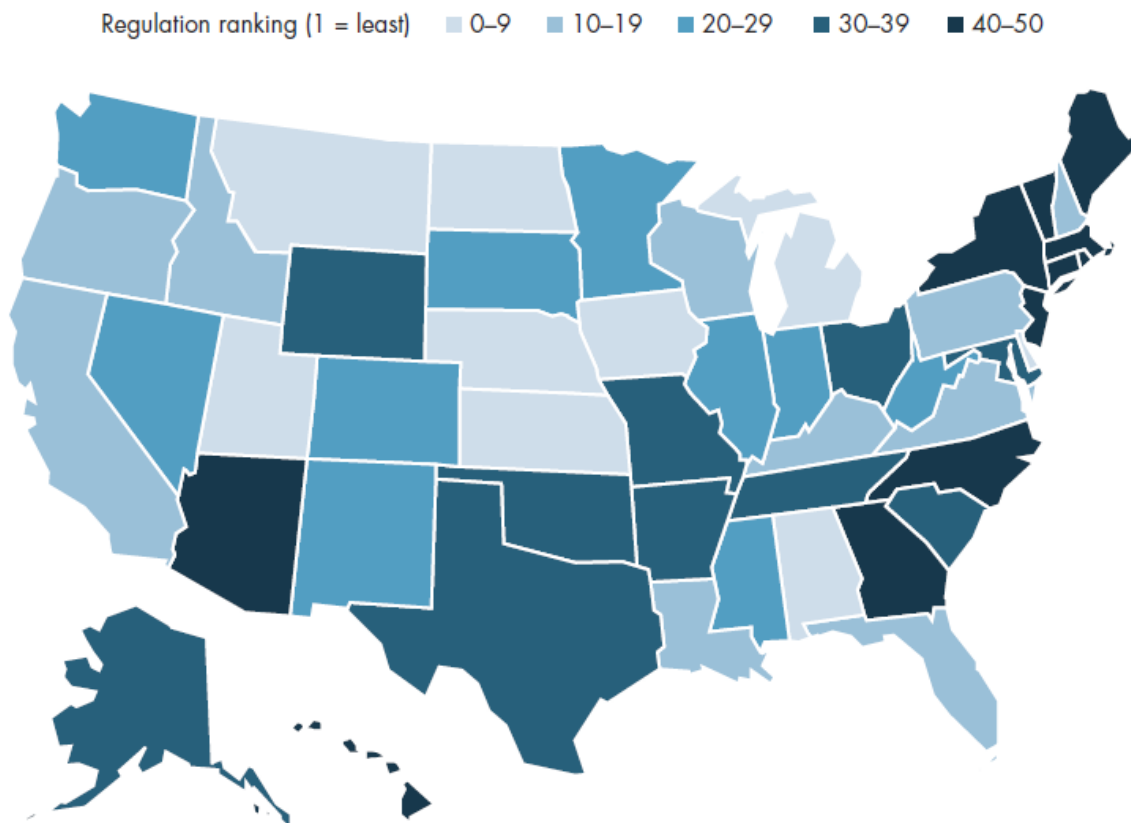
If fully implemented, the new health reform law will do two things. First, it will significantly increase the

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amount of health services regulation. Second, it will shift more regulation to the federal level. States still will play a role in implementing the details of how, for example, state health exchanges will work. However, they will do so under a new set of "rules of the road" established by the federal government.

14.3.1 Downloads

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- Figure 14.3 Image Slide (as it appears above)[14]
- Figure 14.3 Editable Slide (can be formatted as desired)[15]

14.3.2 References

A. Graham J. Index of Health Ownership. 3rd Edition. Pacific Research Institute. 2009. http://www.pacificresearch.org/docLib/20090720_IHOP_3_2009.pdf (accessed July 2010).

14.4 14.4 Unionization Rates in the Health Industry[16]

The percentage of health industry workers who are union members appears to be the same as the national rate of unionization among all workers. At the industry level, the available data combine health services workers with other social assistance workers. Because the latter group constitutes only 15 percent of the combined total, it is unlikely that the numbers shown in figure 14.4 would change much if unionization in the health industry were measured more precisely. That said, at least part of the apparent steep decline in unionization for this group between 1992 and 2000 might be a statistical artifact. During that time, a major change occurred in how industries are categorized; the groups being compared in these two years are not identical in composition. It seems likely that there was a decline in unionization but perhaps not to the extent shown. The apparent rise in unionization from 2000 to 2007 cannot be explained in a similar fashion. It likely is genuine (though small).

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[14]https://hub.mili.csom.umn.edu/content/m10090/latest/14.3IMG.ppt
[15]https://hub.mili.csom.umn.edu/content/m10090/latest/14.3DATA.ppt
[16]This content is available online at <https://hub.mili.csom.umn.edu/content/m10091/1.1/>.

14.4 Health industry unionization rates appear to be the same as those elsewhere, but among some health occupations, unionization is much greater

Percentage of workers in industry/occupation who are union members
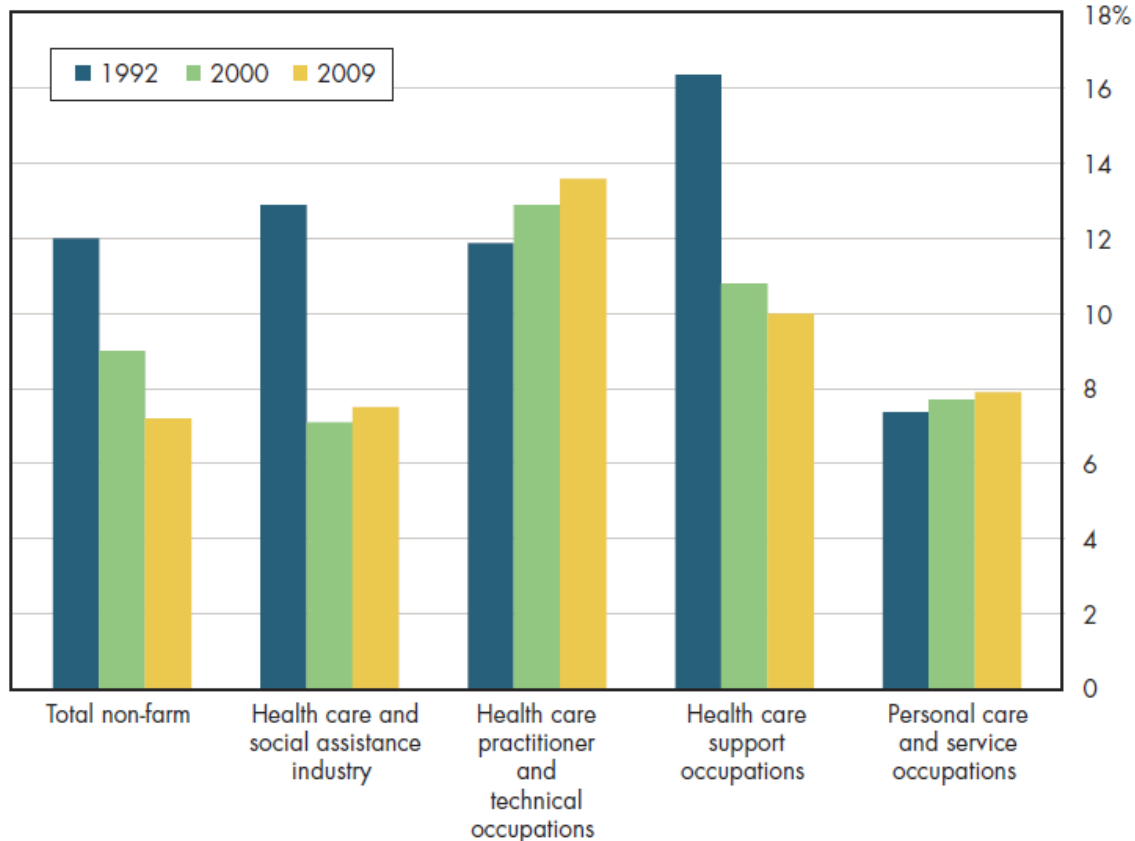
Unionization data also are available at a more detailed level for health-related occupations. Shown are the numbers for the broad aggregates used by the BLS to describe health sector workers. Thus, among health care practitioner and technical occupations, the unionization rate is approximately double the rate for all health services. Moreover, this rate appears to be increasing over time. In contrast, unionization seems to be declining among health support occupations (again, with the caveat that the steep decline from 1992-2000 likely is exaggerated). "Personal care and service occupations" is another imprecise aggregate. It includes personal and home care aides, but these constitute only approximately one-sixth of the workers in this category. It also includes those who provide personal care services such as haircuts or manicures. Unionization within this group is similar to the economy-wide average and might possibly be increasing. Because identifiable health workers account for a much smaller group within this total, it is conceivable that these numbers would be different with numbers that are more detailed.

14.4.1 Downloads

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[18]https://hub.mili.csom.umn.edu/content/m10091/latest/14.4DATA.ppt

14.4.2 References

A. Department of Commerce. Bureau of the Census.
B. Department of Labor. Bureau of Labor Statistics.

Chapter 15

Chapter 15: Health, Wealth, and Debt

15.1 15.1 Health Spending per Capita Has Grown Twice as Fast as per Capita Net Worth[1]

Since 1952, inflation-adjusted health spending per capita rose much faster than per capita net worth or GDP (figure 15.1a). Net worth is the excess of assets over liabilities. According to Federal Reserve data, the net worth of U.S. households at the end of 2008 was $56 trillion. The nation's net worth includes the net worth held by house- holds and non-profit organizations. This represents the total wealth of the nation because assets held at the household level reflect any net worth held by corporations and non-corporate businesses.

15.1a Since 1952, inflation-adjusted health spending per capita increased much faster than per capita household net worth or GDP

Index of real amounts per capita, 2005 chained dollars: 1952=100

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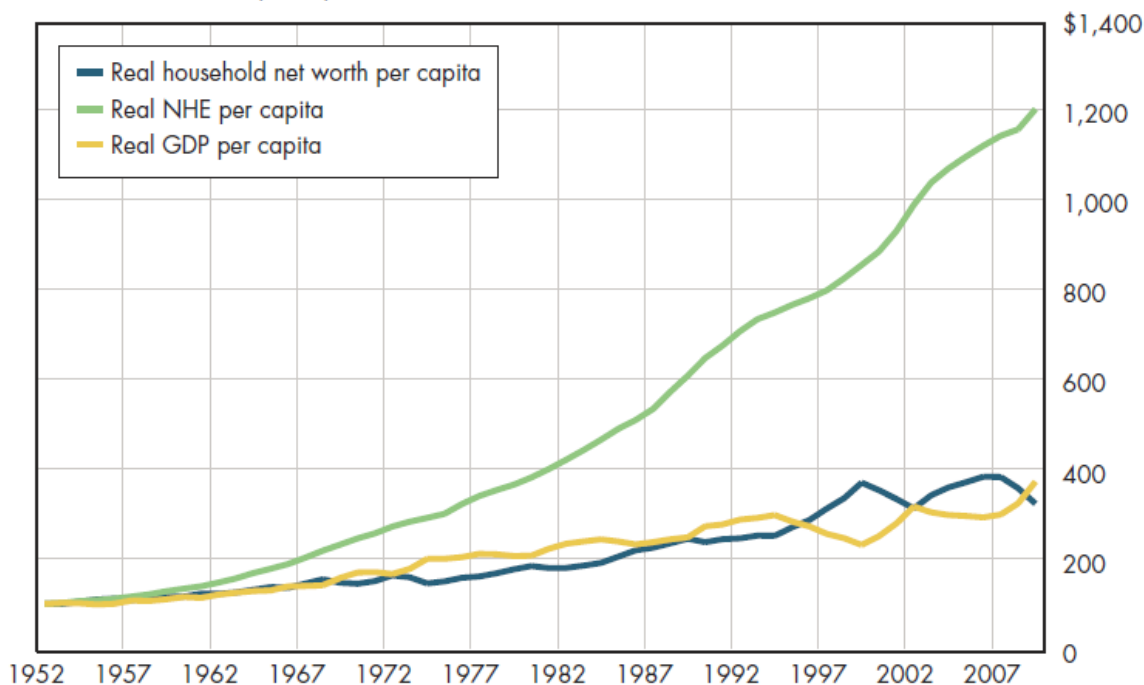
[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10085/1.1/>.

Over 55 years starting in 1952—that is, excluding the most recent economic downturn—net worth increased at an annual rate of 7.3 percent, as compared with an increase of 6.8 percent in GDP. Adjusting for general inflation and population growth, these numbers decline to 2.5 percent and 2.0 percent, respectively. These numbers imply that on a per-person basis, real wealth doubles every 29 years and real GDP doubles every 35 years.

Real per capita health spending grew 4.5 percent over the same period. This was 80 percent faster than the pace at which net wealth increased. This pace implies a doubling of real per-person spending (in general purchasing power terms, not medical dollars) every 16 years.

A clearer way to see this difference is to calculate health spending for every $100 of net worth. When Mr. Eisenhower was elected president in 1952, this ratio was $1.29 in spending per $100 of wealth. By 2007, this amount had increased to $3.86 (figure 15.1b). Because of the steep decline in net worth from 2007 to 2009, coupled with ever-rising health costs, this ratio had reached $4.80 by the end of 2009. Health spending does not put us in danger of eradicating national wealth, but it is steadily chipping away at it, decade after decade. Health spending has not yet resulted in a reversal of real gains in national income (GDP) (refer to figure 20.4a). Likewise, increasing medical costs have not prevented real national wealth from increasing. However, less rapid increases in health spending in principle might have allowed for more rapid gains in wealth.

15.1b Health spending per dollar of wealth has almost quadrupled over more than 50 years

Health spending per dollar of net worth held by households and nonprofits
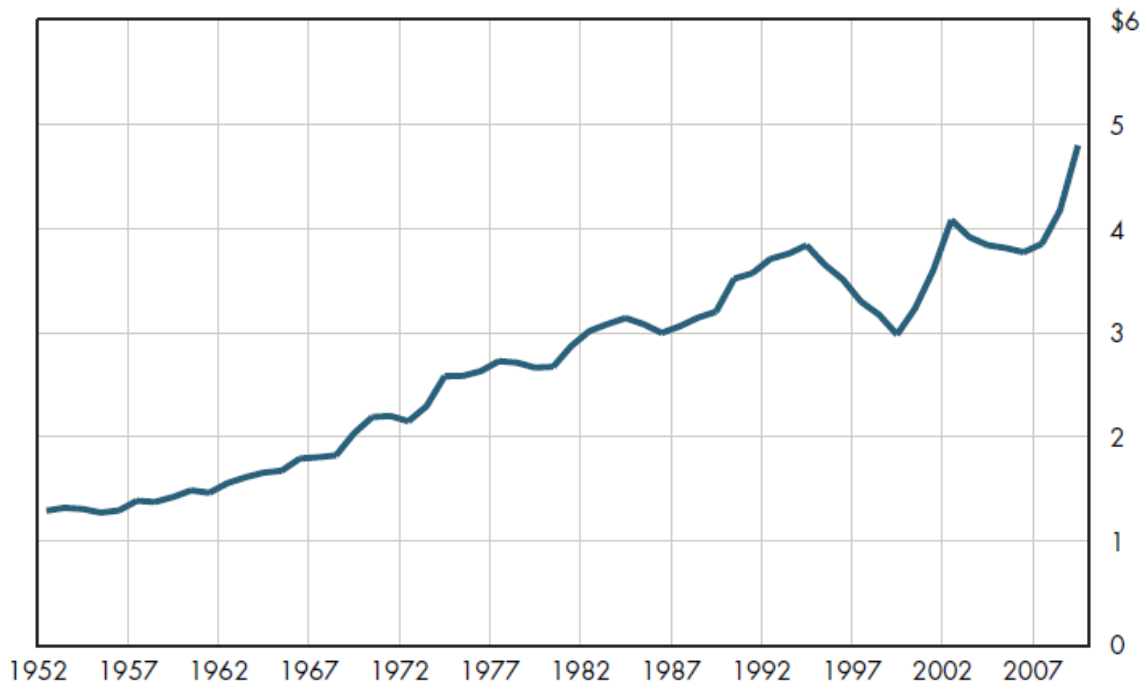
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[3]https://hub.mili.csom.umn.edu/content/m10085/latest/15.1aDATA.ppt

- Figure 15.1b Image Slide (as it appears above)[4]
- Figure 15.1b Editable Slide (can be formatted as desired)[5]

15.1.2 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. Federal Reserve Bank.

15.2 15.2 Low-Income US Family May Incur Health Spending that Exceeds Their Net Worth[6]

For low-income families, the cost of having one member in the top 10 percent of health spending would exceed their net worth. Thus, low-income households are more vulnerable to bankruptcy risk from medical expenses. The question is how large a risk they face.

Our conventional sources of health spending at the household level do not provide information on household wealth. Therefore, as an approximation, available information on the distribution of net worth across households was compared with the average per capita spending amounts for individuals in particular parts of the spending distribution (refer to figure 12.1a). This gives an approximate sense of the vulnerability to bankruptcy risk, but it is not equivalent to determining that a specified fraction of low-income families actually undergoes a bankruptcy caused by medical bills.

As an example, a low-income household having just one member whose medical spending fell into the top 1 percent of spending, would, on average, incur medical bills more than five times their net worth (figure 15.2). This is no guarantee of bankruptcy because if they are Medicaid-eligible, their third-party coverage finances all or almost all of such bills. Likewise, if such a family had private medical insurance, much of this hypothetical burden would be shifted onto others. Even if such a family were entirely uninsured, the safety net absorbs a considerable fraction of health expenditures (refer to figure 3.9b).

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[4]https://hub.mili.csom.umn.edu/content/m10085/latest/15.1bIMG.ppt
[5]https://hub.mili.csom.umn.edu/content/m10085/latest/15.1bDATA.ppt
[6]This content is available online at <https://hub.mili.csom.umn.edu/content/m10086/1.1/>.

15.2 For low-income families, the cost of having one member in the top 10 percent of health spending would exceed their net worth

Simulated spending as a percentage of family net worth (2008)
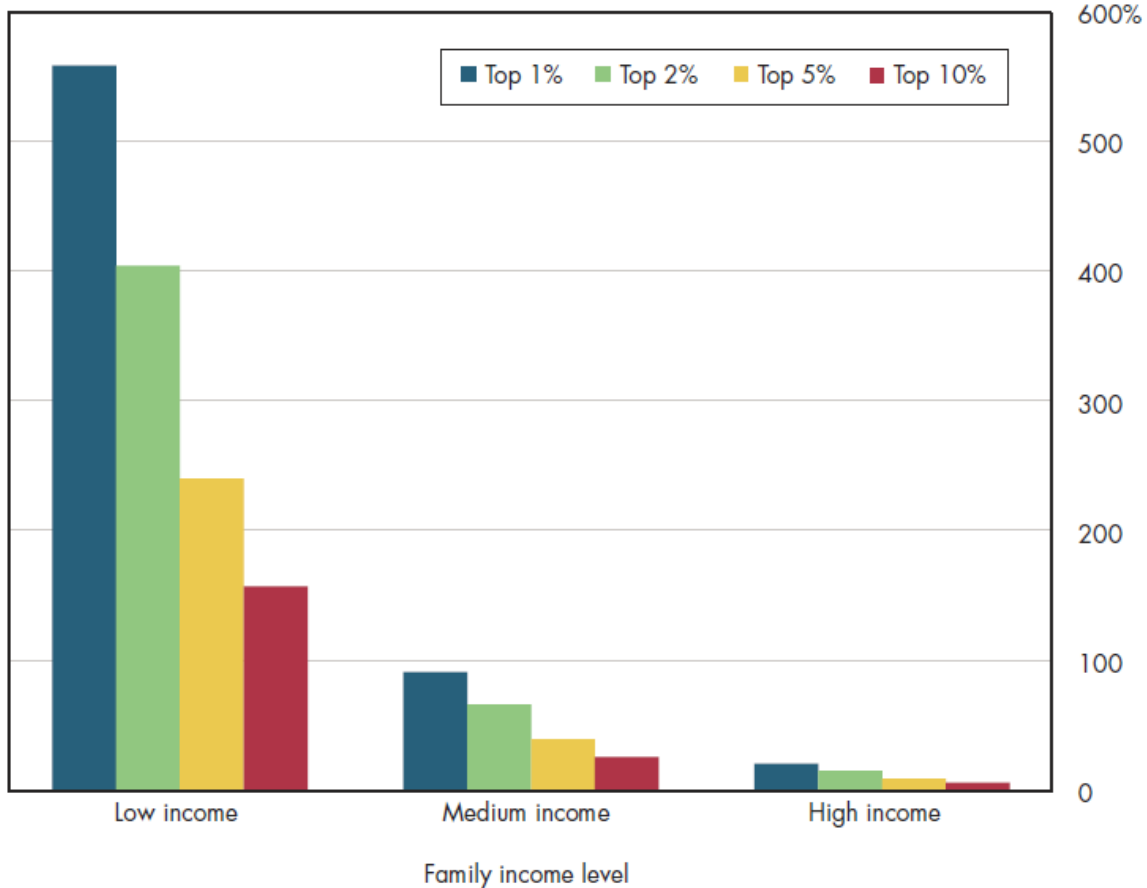
Note: Simulated spending estimated assuming one family member had health spending in the top 1, 2, 5, or 10 percent of individuals ranked by expenditures. Figure 12.1a shows the estimated annual amount of spending for each of these percentiles.

For a middle-income family, having one member in the top 1 percent would result in bills almost equal to the family's net worth. Again, whether this circumstance would actually force the family to declare bankruptcy would depend on the particular situation. A large public or teaching hospital might be in a better position to write off an expensive stay than would a small community hospital with low or negative operating margins. In contrast, for the highest income families, paying the bill theoretically ought to be relatively easy even if they lacked insurance and were responsible for the entire bill. It would wipe out 20 percent of their net worth, but presumably, this would not trigger bankruptcy.

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15.2.2 References

A. Author's calculations.
B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.
C. Federal Reserve Bank.

15.3 15.3 "Medical" Bankruptcies Account for 25-35% of US Bankruptcies[9]

Families whose principal reason for debt relates to medical bills account for approximately 25 percent of all bankruptcies. Other experts have suggested that this number might be much more than this, but this assumption uses an overly broad definition of a medical bankruptcy. The numbers shown in figure 15.3 represent evidence from the first study that separates the problem of paying medical bills from other problems that bankruptcy filers face, including loss of employment, low income, or other sources of debt, particularly credit card debt. According to this study, even if medical bankruptcy were defined to include all families having any medical debt, such families would account for just over 35 percent of bankruptcies.

15.3 Approximately one-fourth of bankruptcies are related primarily to medical debts; medical debts are a factor in just over one-third

Percentage of bankruptcies related to families with medical debts (1994–96)
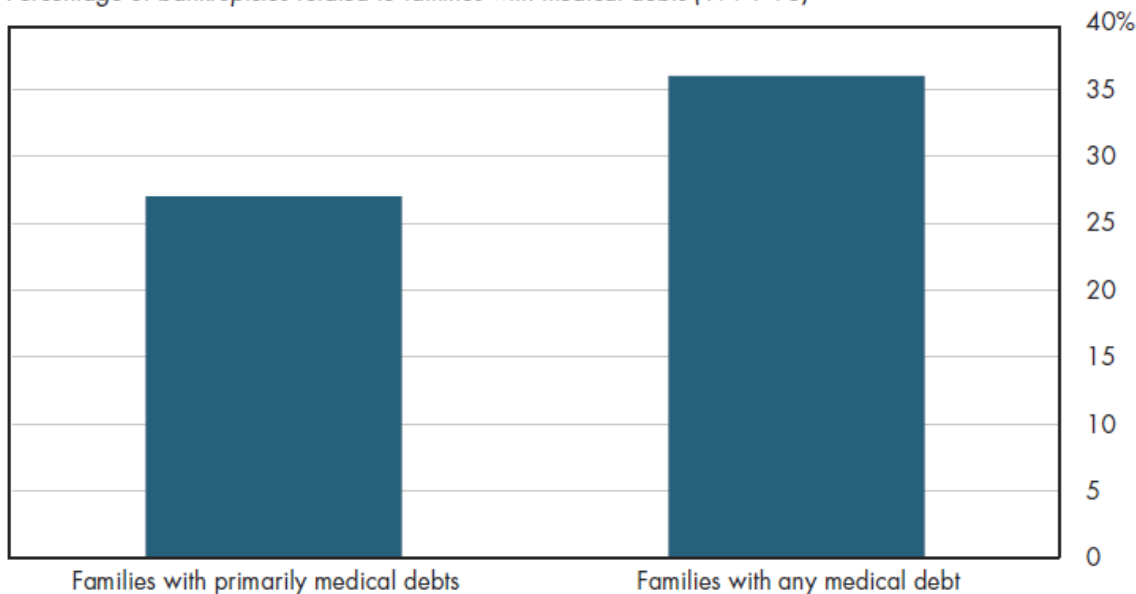
Poor health can result in loss of income or even loss of a job—an impact that can greatly exceed the effects of medical bills. Thus, even for families whose debt primarily relates to medical bills, there is no guarantee that bankruptcy could have been avoided had their medical bills been eradicated, that is, paid by someone else. The average amounts of the medical bills involved in bankruptcy cases are surprisingly small. One study by the U.S. Department of Justice (DOJ) found that only 11 percent of bankruptcy filers had

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[8]https://hub.mili.csom.umn.edu/content/m10086/latest/15.2DATA.ppt
[9]This content is available online at <https://hub.mili.csom.umn.edu/content/m10087/1.1/>.

medical bills in excess of \$5,000. Medical debt accounted for 50 percent or more of total unsecured debt in only one of 20 cases. Across all filers, medical debt averaged only approximately 6 percent of all unsecured debt.

The limited available evidence suggests that fluctuations in the cost of health care are not linked to increases or decreases in bankruptcy rates. There has been a secular increase in bankruptcy filings entirely independent of increases in medical expenditures. There is more mixed evidence about whether bankruptcy rates have been affected by trends in insurance coverage. Approximately 60 percent of bankruptcies are filed by families who have health insurance. Thus, if the new health reform law results in expanded coverage, in principle this will reduce bankruptcy risk. The new law eliminates ceilings on lifetime coverage and places maximum limits on out-of-pocket spending. This too will lower bankruptcy risk, but for all the reasons reviewed, it seems unlikely that bankruptcies would decline by 25 percent.

15.3.1 Downloads

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15.3.2 References

A. Mathur A. Medical Bills and Bankruptcy Filings. American Enterprise Institute. http://www.aei.org/docLib/20060719_MedicalBillsAndBankruptcy.pdf (accessed July 28, 2010).

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[10]https://hub.mili.csom.umn.edu/content/m10087/latest/15.3IMG.ppt
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Chapter 16

Chapter 16: Economic Fluctuations and Health

16.1 16.1 Aggregate Health Spending Growth and Business Cycle Fluctuations[1]

Over the past 60 years, growth in health spending has persisted even during periods of economic contraction (figure 16.1). No particular pattern to its growth exists during periods of contraction relative to adjacent periods before or after a recession. During the 1990s, somewhat more regularity appeared in this pattern, with growth in health spending generally higher during downturns than during the periods that preceded or followed. Even this cycle appears to have been broken in the most recent downturn because Medicaid spending has grown less rapidly than during 2001-2007.

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10082/1.1/>.

16.1 Aggregate health spending growth appears to be largely independent of fluctuations in the business cycle

Compound annual growth rate
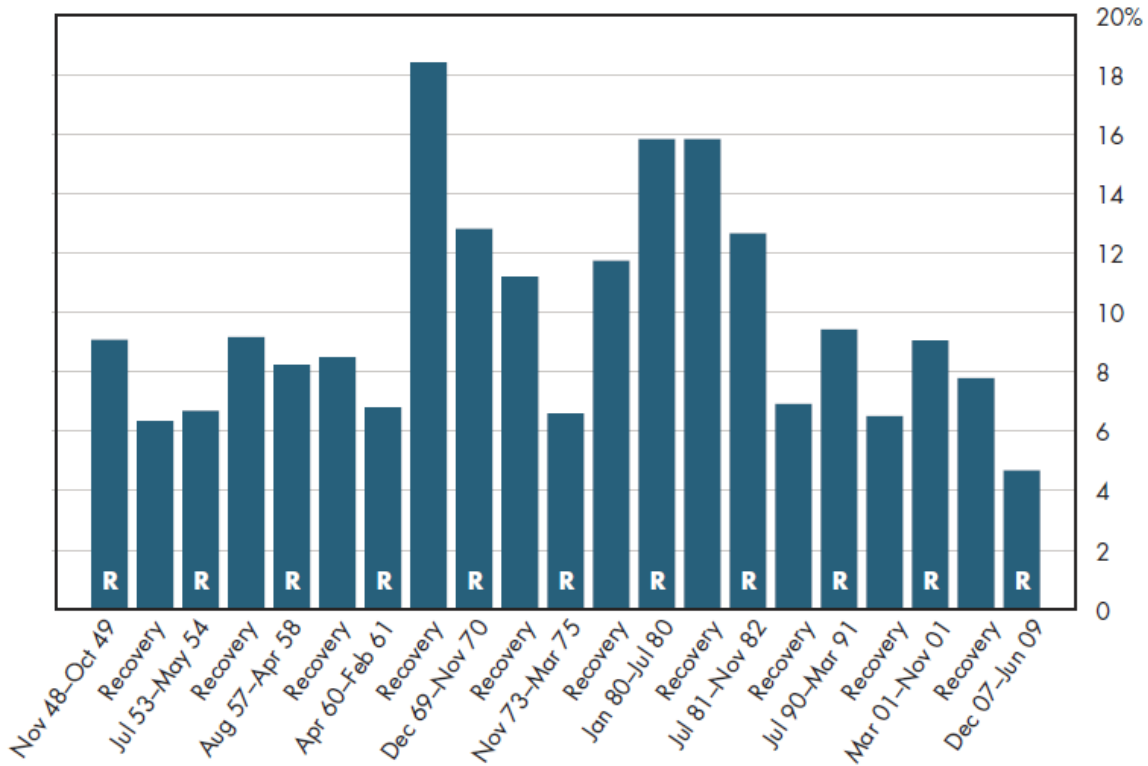
Unlike the unemployment rate, government spending and other key economic indicators, health expenditures are not reported monthly (a notable exception is Medicaid spending, although monthly dollars are available only with a considerable time lag). Thus, the data shown have been generated assuming a uniform monthly rate of growth between years. This assumption permits a calculation of estimated spending at the start and end of each period of downturn or recovery, but it is quite possible that growth in spending was higher or lower during the months of an economic slowdown compared with the remaining months in a given year. The picture is only an approximate gauge of how spending actually changes on a monthly basis.

During recessions, mortality due to motor vehicle accidents (because people drive less), homicides (reflecting less crime in general), and workplace injuries all decline. To the extent such mortality reductions are matched by similar reductions in mor- bidity due to motor vehicle accidents, crime, and occupational injuries, these should reduce the amount of medical spending. However, any such reduction is not apparent in the numbers shown in figure 16.1.

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16.1.2 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.

16.2 16.2 Medicaid Spending Tends to Be More Countercyclincal among Components of NHE[4]

When health spending is separated into Medicaid and "everything else," a slightly more cyclical pattern emerges (figure 16.2). In some recessions—notably those during the late 1960s and early 1990s, growth in Medicaid spending has far outpaced spending for other health care services. The size of this growth differential was much larger during the downturn than in the period either before or after. Other social welfare spending, certainly unemployment benefits, but also Food Stamps and other forms of cash or in-kind assistance, tend to be more cyclical than Medicaid is.

16.2 Medicaid spending occasionally is more countercyclical than other health spending is, increasing relatively faster in downturns
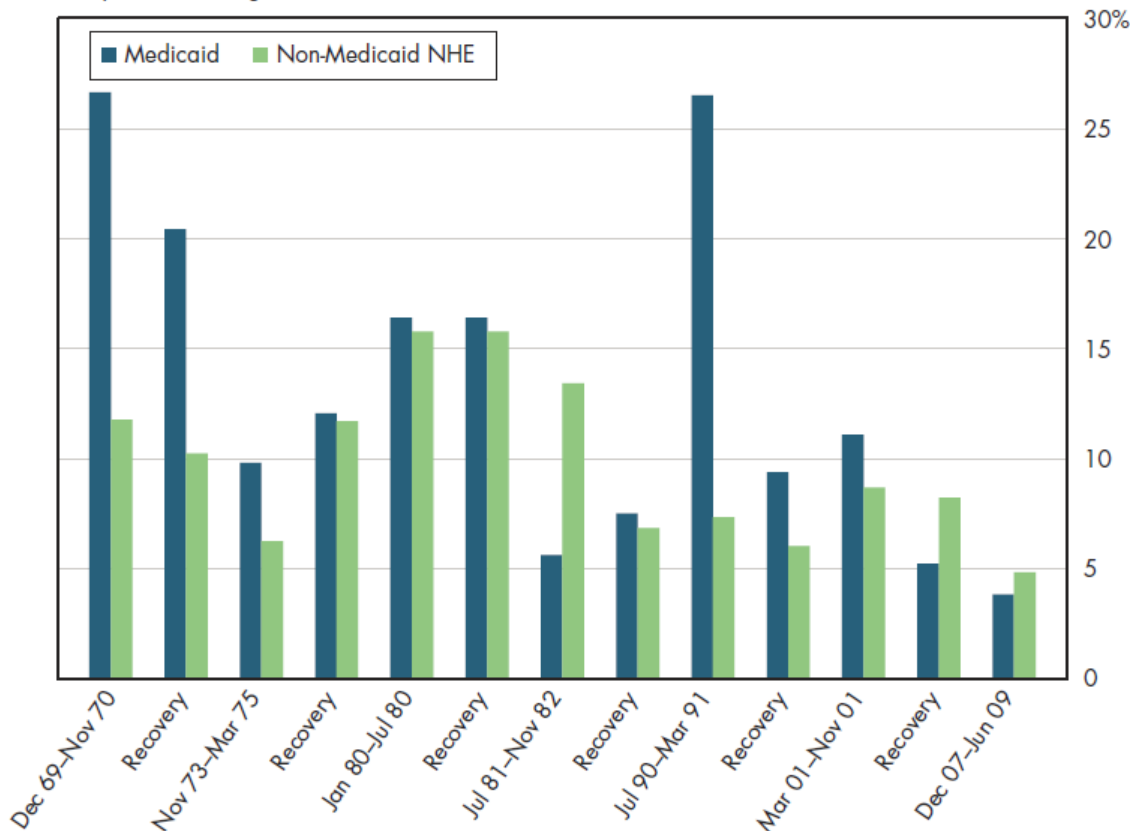
Some of the program's tendency to serve a countercyclical function has been masked by some large changes in Medicaid policy that had the effect of escalating Medicaid spending during years of economic growth rather than during downturns. Arguably, the political will to enact such Medicaid expansions was

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[4]This content is available online at <https://hub.mili.csom.umn.edu/content/m10083/1.1/>.

greater during times of relative "plenty." For example, starting in the mid-1980s, a series of expansions over many years targeted children, pregnant women, and infants. Likewise, enactment of SCHIP in 1997 to expand further the coverage of children occurred during a period of rapid economic expansion. This had the effect of exaggerating Medicaid's relative rate of growth (compared with all other health spending) during the 1990s and thereby making it appear larger than the growth differential that occurred during the 2001 economic slowdown.

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B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.

16.3 16.3 Unemployment Rates for Male Workers in the Health Sector Are Lower than the Rest of the Economy[7]

For almost 50 years, unemployment rates among males working in hospitals or other parts of the health services industry have been lower than for their counterparts in the rest of the economy (figure 16.3a). Since at least 1994, male unemployment rates in non-hospital health settings have been somewhat higher than for those working in hospitals. Before, the reverse was true. For these data, non-hospital health settings include nursing homes in addition to physician offices or other ambulatory settings. Note also that the unemployment rates shown are for experienced workers only, not for new workers or those reported as being "not in labor force" because of school, an inability to find work, or other reasons.

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[5]https://hub.mili.csom.umn.edu/content/m10083/latest/16.2IMG.ppt
[6]https://hub.mili.csom.umn.edu/content/m10083/latest/16.2DATA.ppt
[7]This content is available online at <https://hub.mili.csom.umn.edu/content/m10084/1.1/>.

16.3a Unemployment rates among males who work in health services are lower than for males overall; this has been true for decades

Average annual unemployment rate within industry
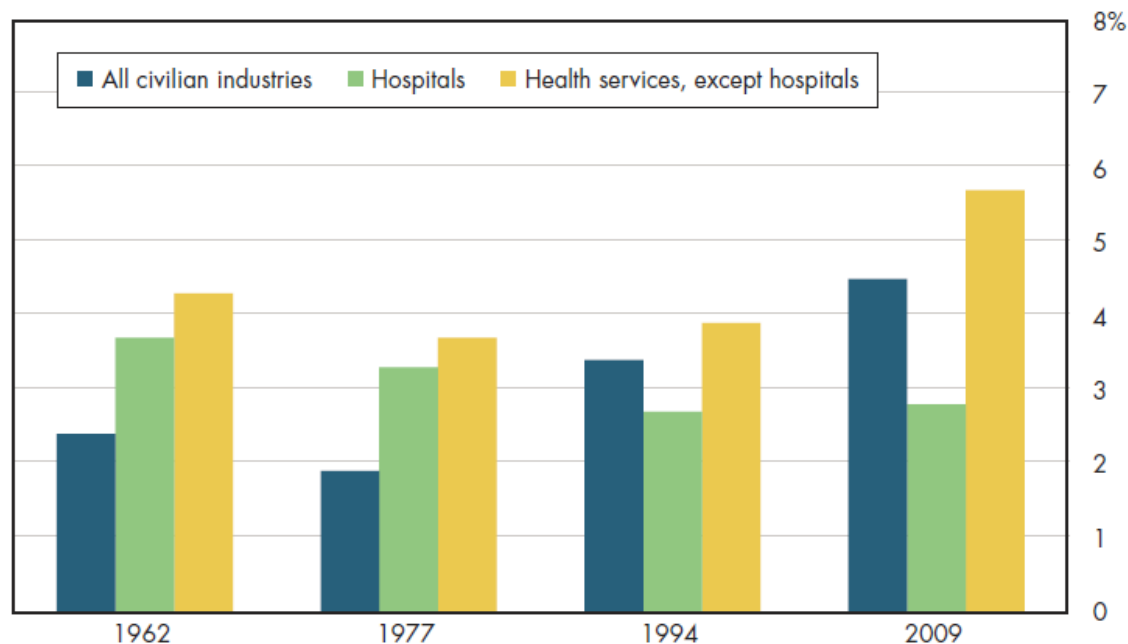
Note: Unemployment figures are for experienced workers only, not new workers or those reported as being "Not in Labor Force" because of school, an inability to find work, or other reasons.

The picture for females is quite different. For female health services workers out- side of hospitals, the unemployment rate has routinely been higher than for females elsewhere in the economy—typically by two to three percentage points (figure 16.3b). For female hospital workers, the pattern is the same as just described for males. Since at least 1994, female hospital workers have had a somewhat lower unemployment rate than have all females. In the limited data from the 1960s and 1970s, the reverse was true, with female unemployment among hospital workers being one to two percentage points higher than the rate for women generally.

16.3b Unemployment rates among females who work in health services, but not hospitals, are higher than for females overall; this has not always been true

Average annual unemployment rate within industry
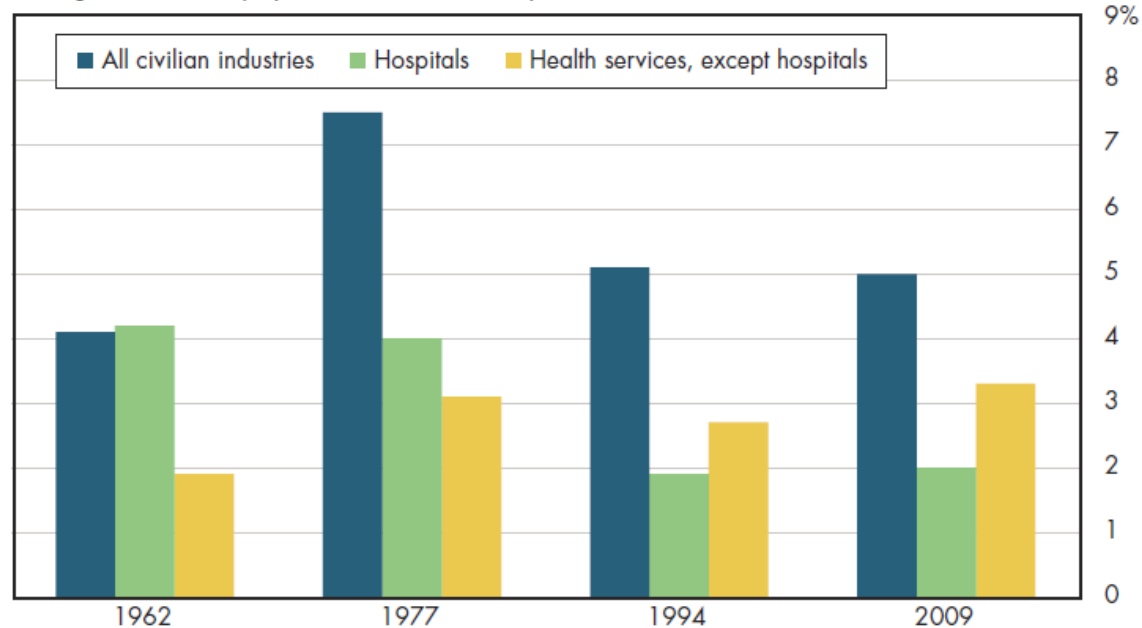
Both worker hours and employment have been increasing in the hospital sector in recent years (refer to figure 10.1b). This indicates the strong demand for hospital labor, which is reflected in their lower unemployment rate. The reason is less clear as to why the pattern for women has diverged so significantly from that of men. In all periods, women have a lower general unemployment rate than men. However, unemployment in non-hospital health services is routinely higher for women than for men in all of the annual data. Within the hospital industry, female unemployment rates were somewhat higher than were men's decades ago. More recently, female unemployment rates have been less than male unemployment rates by approximately 1 percent. Why women now have attained a margin of advantage over men in the hospital sector but not in the rest of the health services industry is not well understood.

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16.3.2 References

A. Author's calculations.
B. Department of Commerce. Bureau of the Census.

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[11]https://hub.mili.csom.umn.edu/content/m10084/latest/16.3bDATA.ppt

Chapter 17

Chapter 17: Health Services and Quality of Life

## 17.1 17.1 Average American's Stock of Health Is Several Multiples of Lifetime Earnings[1]

The health capital (value of their health) for average individuals in the United States is several times as large as expected lifetime earnings. This calculation converts future earnings to a present value, using a real discount rate of 3 percent. This is approximately equivalent to the inflation-adjusted rate of return paid on long-term U.S. Treasury bills. Most economists believe that this approximates the *social discount rate*, that is, the degree to which the value of a future dollar declines compared with today's dollar. A 3 percent rate implies that a dollar one year from now is worth only 97 cents in today's dollars. Another way to think about it is that 3 percent represents the amount people would have to be paid today to get back a dollar in one year.

There obviously is a great deal of variation across different individuals in lifetime earnings. Calculating from available evidence about earnings by age in 2005 dollars discounted back to the present, the average U.S. citizen will earn approximately $1 million or more over a lifetime. Figure 17.1 illustrates how this average varies by gender and race. Lifetime earnings represent a conservative estimate of the value of a human life. Economists have used various methods to calculate the willingness-to-pay value of a human life. For example, consider workers in risky jobs who are willing to be paid $10,000 more a year in exchange for a 1 percent increase in their risk of dying on the job in any given year. This implies that collectively, such workers are willing to be paid $1 million in exchange for one of them dying. Their willingness-to-pay value for life is said to be one million dollars. Based on this kind of real-world evidence about willingness to accept higher pay in exchange for loss of a *statistical* life, the present value of a life at birth averages almost five million dollars (there is wide variation in this number across studies). Due to differences in life expectancy, this value varies by race and gender.

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10078/1.1/>.

17.1 The average American's stock of health is several multiples of lifetime earnings

Net present value using 3 percent discount rate (millions of 2005 dollars)
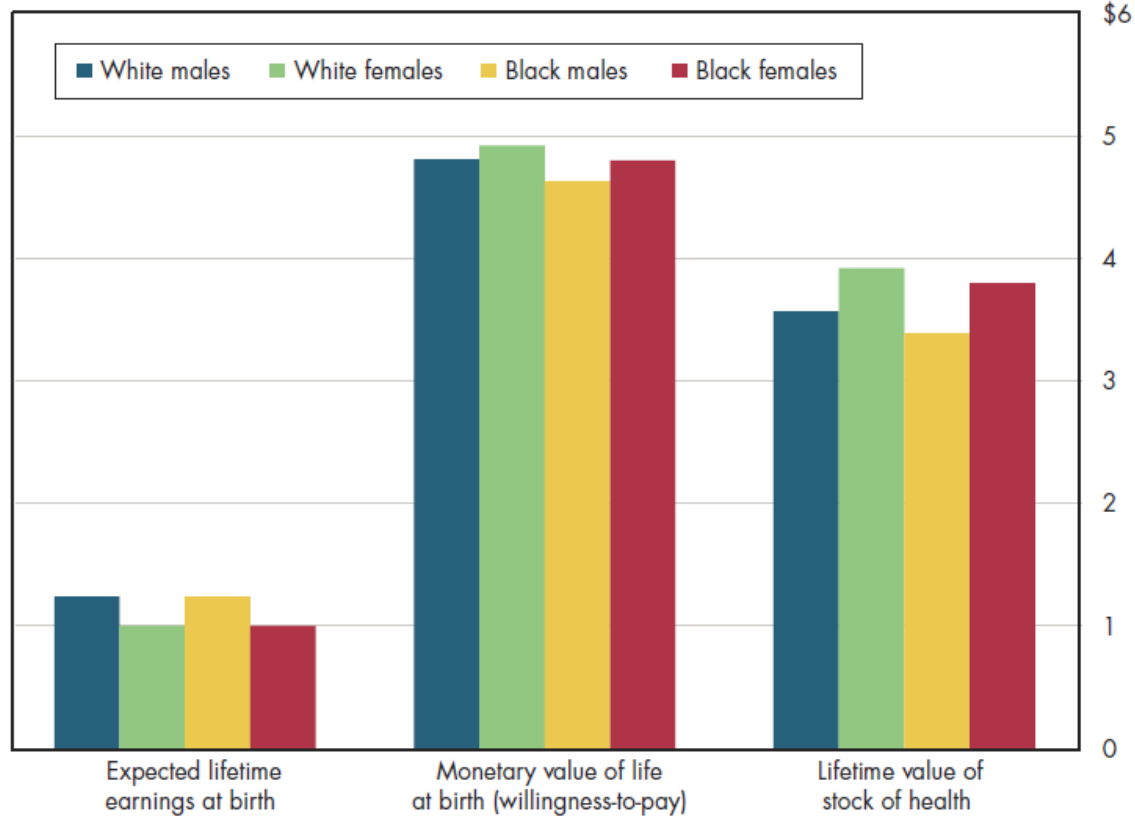
Note: Lifetime value of stock of health = willingness-to-pay value of life at birth minus expected lifetime earnings at birth.

Willingness-to-pay encompasses both the expected amount of future earnings (because these future earnings have value to the earner), as well as the intangible value of life. Thus, subtracting expected earnings from the willingness-to-pay value of a life, the result is the intangible value of each U.S. worker's stock of health when born. This is invariably much larger than lifetime earnings.

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17.1.2 References

A. Author's calculations.

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[3]https://hub.mili.csom.umn.edu/content/m10078/latest/17.1DATA.ppt

B. Department of Commerce. Bureau of the Census.

C. Murphy KM and RH Topel. The Value of Health and Longevity. Journal of Political Economy 2006; 114(5):871-904.

17.2 17.2 How Price of Treatments Changes over Time Depends on How Innovations Are Measured[4]

For decades, medical prices have outstripped general inflation. Price trends vary by medical service, with prices for some services rising much faster than for others. When the BLS measures prices for other commodities, it is straightforward to measure how the price of a discrete item, such as an apple, changes over time.

This task is much more difficult in health care. The price of a hospital room, for example, does not include the much larger costs of actually occupying a bed. Moreover, even if the price could be precisely calculated, a hospital stay today is a dramatically different product than it was 50 or even 30 years ago. Unless the BLS can account for changes in technology and quality of care, the measured price of hospital care will give an exaggerated picture of how "pure" prices are rising over time.

Even if that task could be performed perfectly, such prices do not represent what is important: How much is the cost of treatment increasing? Even if we knew all the services needed for treatment, the answer depends on whether we assume that bundle of services is fixed over time or can be adjusted to account for actual changes in medical practice (figure 17.2a). Prescription drugs are another good example. Increases in the price of a particular drug are reasonably straightforward to measure. However, the average cost of the "blue pill" is not a good indicator of how much more patients have to pay for treatment for two major reasons. First, if a drug goes off-patent, generic competitors will appear with lower prices. Even for brand names for which there is not yet a generic substitute, there can be competitor drugs similar enough in function whose prices might be rising much more slowly. This could result in many patients switching to those alternatives if prices of the blue pill got too high.

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[4]This content is available online at <https://hub.mili.csom.umn.edu/content/m10079/1.1/>.

17.2a The price of heart attack treatment increased from less than 10 percent to more than 35 percent, depending on how prices are measured

Index: 1983=100
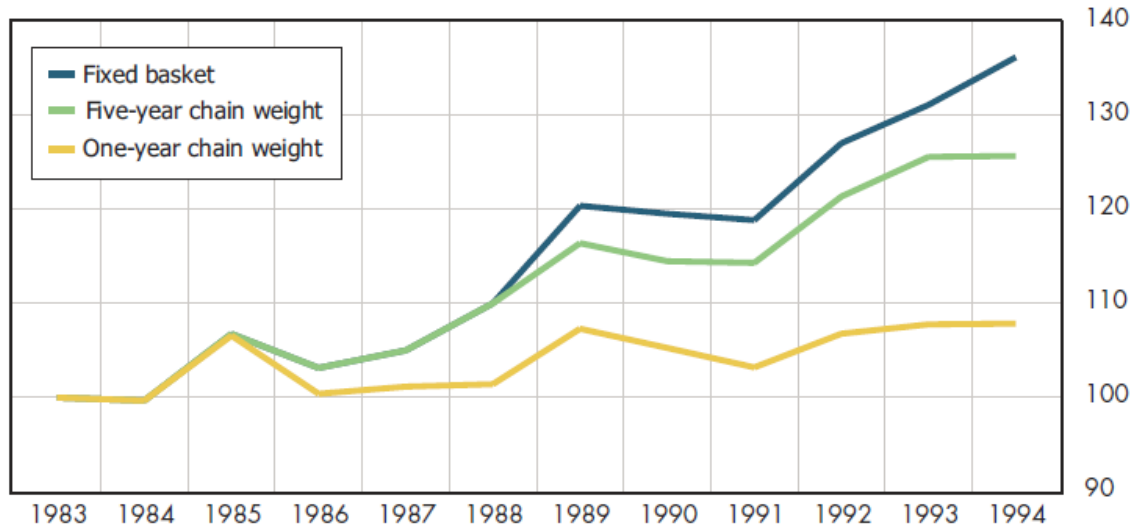
Note: The fixed basket price index is calculated assuming the bundle of services needed for treatment is unchanged over time. The chain-weighted price indexes allow the bundle to change at specified intervals based on actual practice patterns.

When the price of treatment is taken into account, for example, the cost per day to treat depression or high cholesterol, rising drug prices (that is, the price of blue pills) can easily co-exist with falling costs for treatment (figure 17.2b). For social welfare, knowing how the price of various medical treatments is changing is a far better indicator than knowing how the price of individual components of a given treatment is changing. In a highly innovative medical system, new competing treatments appear all the time as do changes in the mix of resources required for a given treatment. Systematic price measurement of treatments is in its infancy.

17.2b After patent expiration, there has been a 51 percent reduction in the daily cost of therapy after 24 months

Percent change in wholesale cost per day (24 months post event)
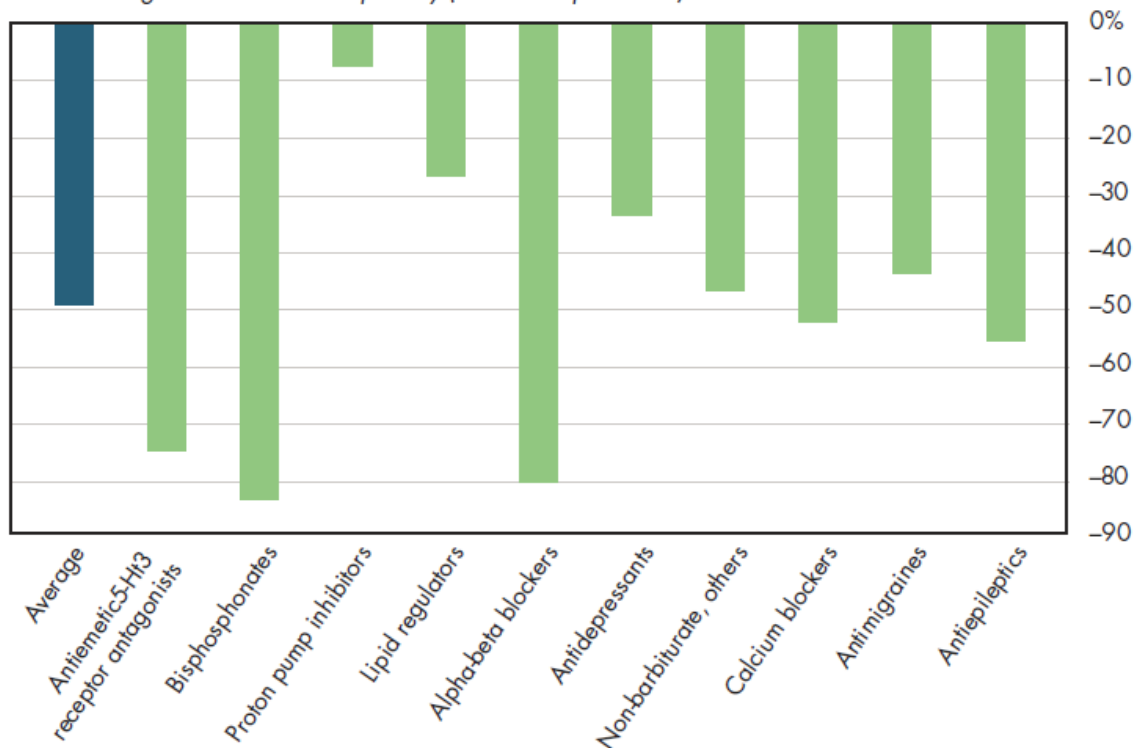
17.2.1 Downloads

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- Figure 17.2b Editable Slide (can be formatted as desired)[8]

17.2.2 References

A. Berndt ER and M Aitken. A Different Perspective: The AARP Sponsored Schon- delmeyer-Purvis Studies. In Scaring Seniors: The AARP Drug-Price Reports. American Enterprise Institute. Washington DC. 2010.

B. Cutler DM, M McClellan, JP Newhouse and D Remler. Pricing Heart Attack Treatments. Medical Care Output and Productivity. National Bureau of Economic Research. http://www.nber.org/chapters/c7634.pdf (accessed August 9, 2010).

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[5]https://hub.mili.csom.umn.edu/content/m10079/latest/17.2aIMG.ppt
[6]https://hub.mili.csom.umn.edu/content/m10079/latest/17.2aDATA.ppt
[7]https://hub.mili.csom.umn.edu/content/m10079/latest/17.2bIMG.ppt
[8]https://hub.mili.csom.umn.edu/content/m10079/latest/17.2bDATA.ppt

17.3 17.3 Technology Has Been An Important Driver of Health Spending[9]

Technology accounts for as much as 25 percent to 60 percent of the rise in real per capita health spending from 1960 to 2007. It is impossible to be more precise about technology's role because it is not feasible to measure price changes accurately enough to distinguish between pure price changes and changes in the quality of the health care good or service being sold. This makes it difficult to determine how much of rising health costs is due to actual changes in output versus higher prices. Economists have resorted to trying to bound this uncertainty using different assumptions. For example, if there are zero changes in productivity, then it is easy to calculate changes in output based on measuring changes in inputs.

Another important factor driving health spending is that as incomes increase, the inclination to use health care appears to increase. This greater demand occurs not only in terms of the use of health services but also in terms of the quality of care. Experts disagree on how much increase in demand for medical services can be expected for every $1,000 increase in per capita income.

Figure 17.3 shows the impact of various assumptions about these issues. Using high-impact assumptions about rising incomes and demand for health care and conservative assumptions about productivity growth, that is, zero, the estimated magnitude of the role of technology in driving health spending is the smallest. Using the opposite assumptions about income and productivity growth (that is, that productivity grows in step with productivity trends in the general economy), the role of technology appears much larger.

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[9]This content is available online at <https://hub.mili.csom.umn.edu/content/m10080/1.1/>.

17.3 Technology and other factors might account for 25 to 60 percent of the increase in real per capita health spending from 1960–2007

Share of average annual growth in real per capita health spending (1960–2007)
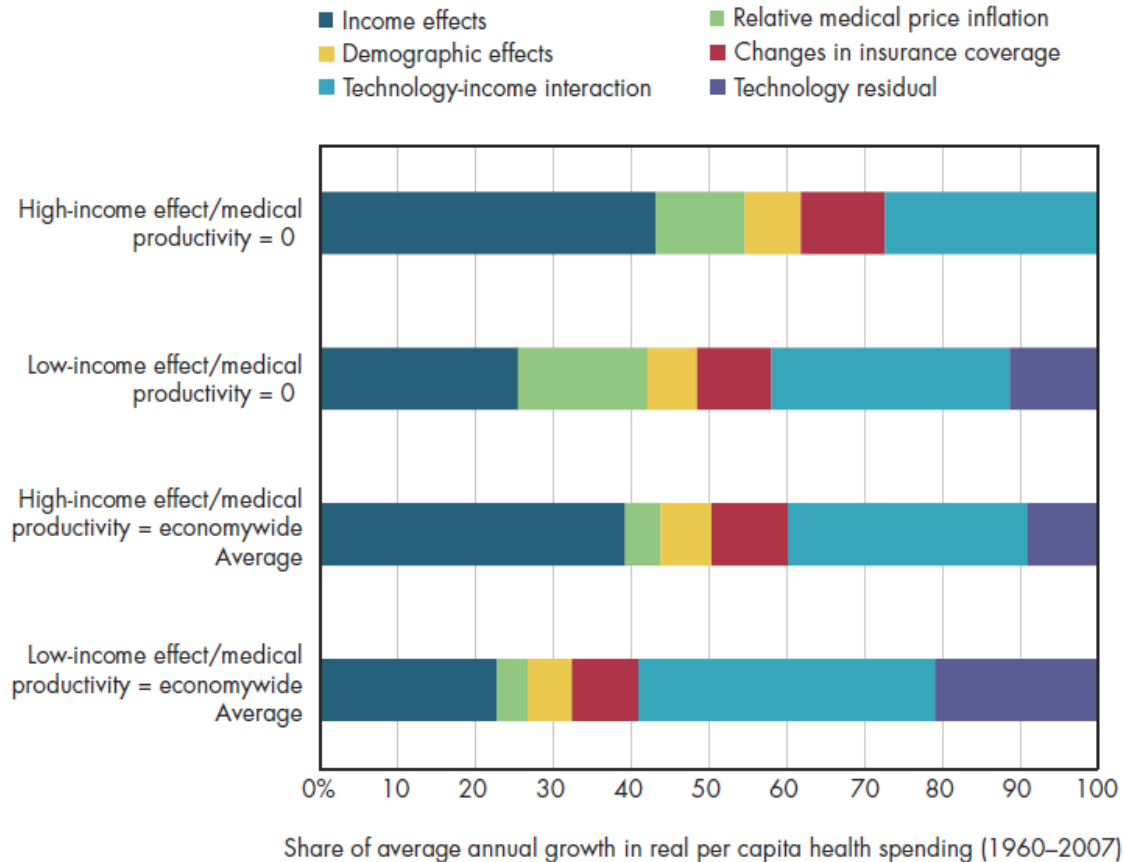
Under any of these assumptions, rising medical prices account for only approximately 3 percent to 15 percent of rising real per capita health spending. Despite the aging of the U.S. population, demographic factors likewise account for only 3 to 6 percent of rising health costs. In contrast, expanded insurance coverage accounts for a relatively larger share of the change in real per capita health spending than either of these other two factors. Some experts assign a far larger role to health insurance due to ample evidence that it drives decisions to acquire and use new technology.

17.3.1 Downloads

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17.3.2 References

A. Smith S, JP Newhouse and MS Freeland. Income, Insurance, And Technology: Why Does Health Spending Outpace Economic Growth? Health Affairs 2009; 28(5):1276-84.

[10]https://hub.mili.csom.umn.edu/content/m10080/latest/17.3IMG.ppt
[11]https://hub.mili.csom.umn.edu/content/m10080/latest/17.3DATA.ppt

17.4 17.4 Whether Social Burden of Illness Has Increased or Decreased Depends on How It was Measured[12]

Despite all the medical progress made during the past 50 years, the economic burden of illness appears to be increasing from a cost-of-illness perspective. The aggregate economic burden of illness consists of three components. The first are direct costs, that is, all of NHE, because in one way or another, these expenditures aim to prevent or ameliorate the effects of poor health. Under a broad definition of the health system, non-medical expenditures such as highway barriers could be included if their principal purposes are to save lives. However, the data shown in figures 17.4a and 17.4b are restricted to NHE.

17.4a The economic burden of illness has increased since 1963, even though the loss related to premature death and morbidity has declined

Economic burden of illness as a percentage of GDP
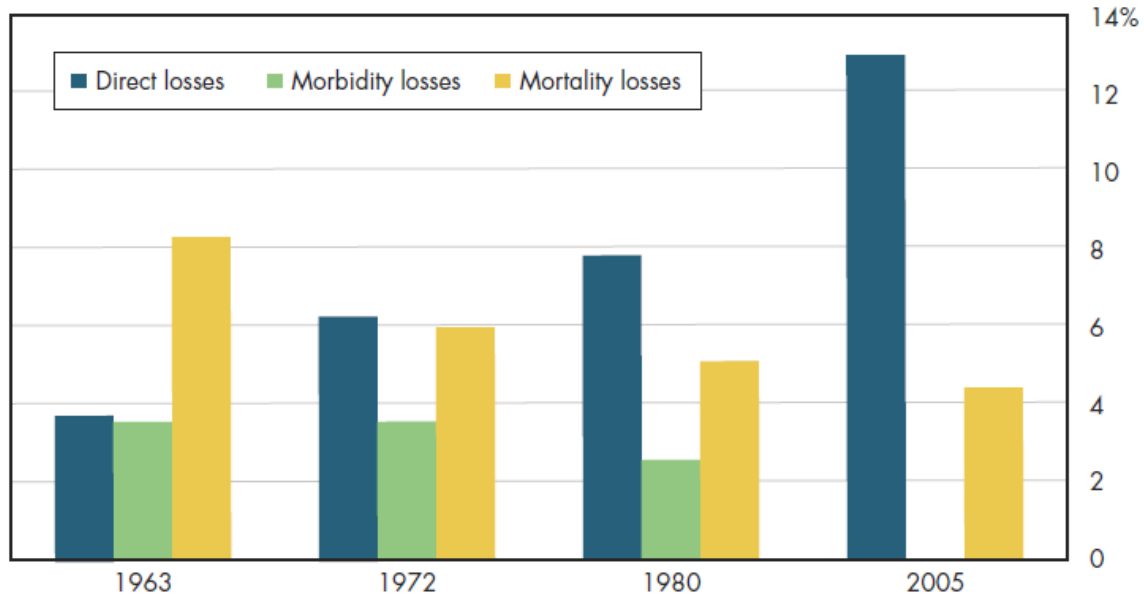
Notes: Direct losses = NHE. Morbidity losses = lost earnings due to illness. Mortality losses = lost earnings due to premature death.

The second component is morbidity losses. In figure 17.4a, these are measured in terms of productivity losses, that is, lost income attributable to workers who are sick. The final component is mortality losses. These also consist of productivity losses except that they are from premature death rather than illness. For simplicity, rather than convert all these dollar amounts to a current-year equivalent, the burdens are expressed as a percentage of GDP. Direct costs—the focus of much of this book—have risen quite rapidly since 1963.

During the same period, mortality losses declined steadily. By 2007, they were just over half of the 1963 level. Morbidity losses did not decline as steeply as mortality losses but did decline between 1963 and 1980. Unfortunately, there are no 2005 data for this measure. However, the rise in direct costs was so rapid between 1980 and 2005 that an unequivocal conclusion is that the aggregate social burden of illness in the United States has increased over the past 50 years. That is, even assuming that morbidity losses had been eradicated by 2005, the sum of direct costs and mortality losses exceeds the total for all three components of the social burden of illness. This increasing economic burden can be attributed solely to increasing health spending in the United States.

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[12]This content is available online at <https://hub.mili.csom.umn.edu/content/m10081/1.1/>.

However, when the intangible value of human life is taken into account, this conclusion is reversed (figure 17.4b). That is, the value of mortality gains has more than offset the increase in health spending. No good way exists to estimate morbidity losses over time using this approach, but because morbidity was declining as a percent of GDP in terms of lost output, the same would be true were these improvements in health valued in willingness-to-pay terms.

17.4b In willingness-to-pay terms, the social burden of illness has declined since 1963, even though medical spending has increased

Social burden of illness as a percentage of GDP
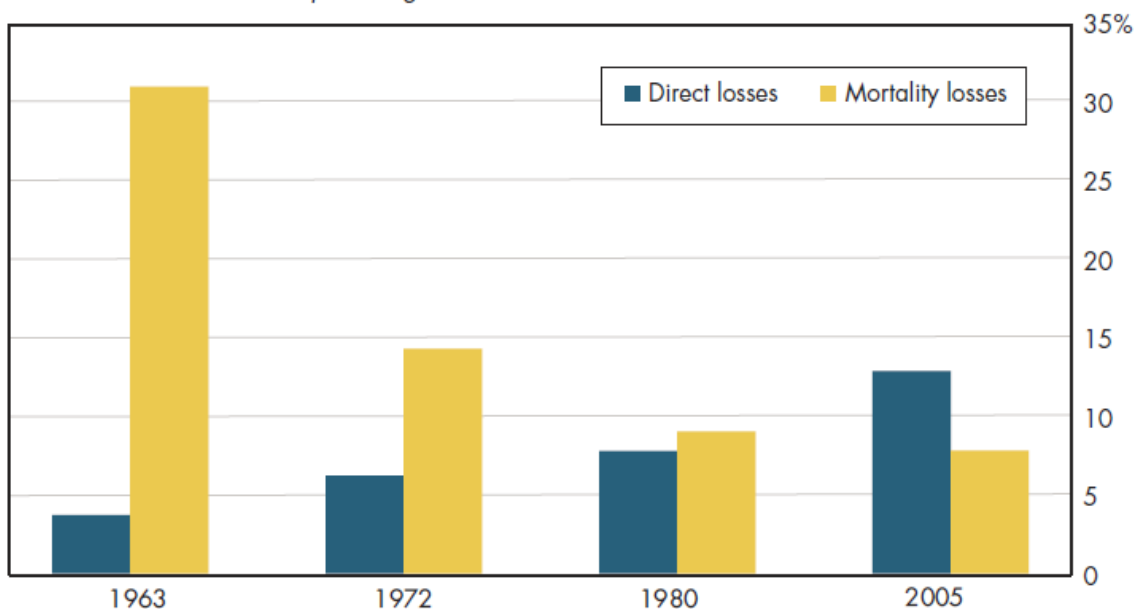
Notes: Direct losses = NHE. Mortality losses = willingness-to-pay value of premature death.

17.4.1 Downloads

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- Figure 17.4b Editable Slide (can be formatted as desired)[16]

17.4.2 References

A. Author's calculations.
B. Department of Commerce. Bureau of Economic Analysis.
C. Department of Commerce. Bureau of the Census.
D. Department of Health and Human Services. Centers for Disease Control and Prevention.

[13]https://hub.mili.csom.umn.edu/content/m10081/latest/17.4aIMG.ppt
[14]https://hub.mili.csom.umn.edu/content/m10081/latest/17.4aDATA.ppt
[15]https://hub.mili.csom.umn.edu/content/m10081/latest/17.4bIMG.ppt
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E. Rice DP, TA Hodgson and A Kopstein. The Economic Costs of Illness: A Replication and Update. Health Care Financing Review 1985; (1):61-80.

F. U.S. Health Policy Gateway. Key Questions: How large is the cost-of-illness in the U.S.? http://ushealthpolicygateway.wordpress.com/payer-trade-groups/ burden-of-illness/cost-of-illness-coi/cost-of-illness/ (accessed August 11, 2010).

Chapter 18

Chapter 18: U.S. Health Care in a Global Economy

18.1 18.1 US Leads the World in Medical Innovation[1]

The United States has contributed to more of the leading diagnostic and therapeutic innovations in medicine than has any other nation. Even combining the European Union (EU) and Switzerland, which collectively have approximately one-half billion residents, the United States outpaces this set of nations as a group by a considerable amount (figure 18.1a).

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10075/1.1/>.

18.1a The United States has less than 65 percent of the population of the EU and Switzerland but has produced approximately 50 percent more top medical innovations

Number of top medical innovations (1975–2000)
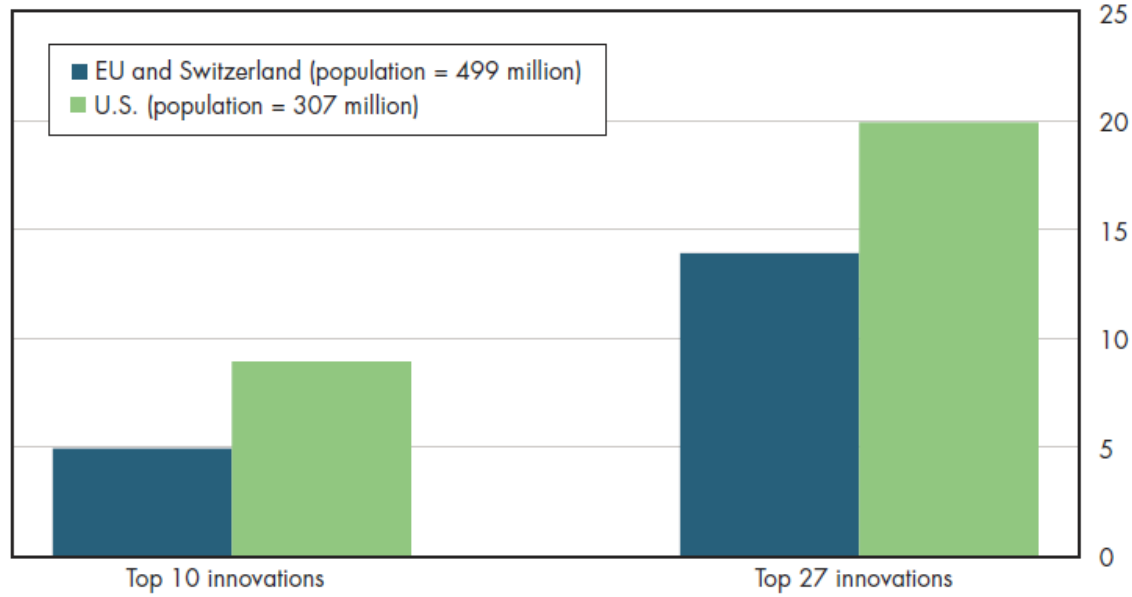
Note: More than one country shares the credit for some innovations. Population figures are for 2009.

There is no one way to measure the nation's worldwide role in medical innovation. Figure 18.1a is based on a widely cited study of the most important medical diagnostic and therapeutic innovations developed between 1975 and 2000. These were systematically evaluated by leading primary care physicians and ranked by the effect of these innovations on patients. For some innovations, more than one country deserves credit. Even so, the United States was the country of origin for 20 of the top 27 such innovations. This is almost 50 percent more innovations than from the EU and Switzerland combined, even though these countries collectively have a population that is approximately 65 percent more than in the United States.

Researchers in the United States also were partially or solely responsible for nine of the top 10 such innovations. This again is much more than the contribution made by the EU and Switzerland collectively. Superiority in the United States can be measured in other ways. Of 99 recipients of the Nobel Prize in medicine and physiology since 1948, 60 were from the United States and 41 were from EU countries, Switzerland, Canada, Japan, and Australia. This group of countries collectively has a population more than twice that of the United States. Much of the funding for basic research in the United States comes from the National Institutes of Health (NIH), which spends approximately seven to 10 times as much as the countries in Europe spend. The 30 billion dollars in NIH funding excludes a similar amount spent by the private sector on some basic (but mostly applied) research. In the context of these enormous investments, the U.S. lead in innovation might not be that surprising.

18.1b The United States is responsible for more major pharmaceutical innovations than the EU and Switzerland combined

Number of top 29 pharmaceutical innovations (1968–2007)
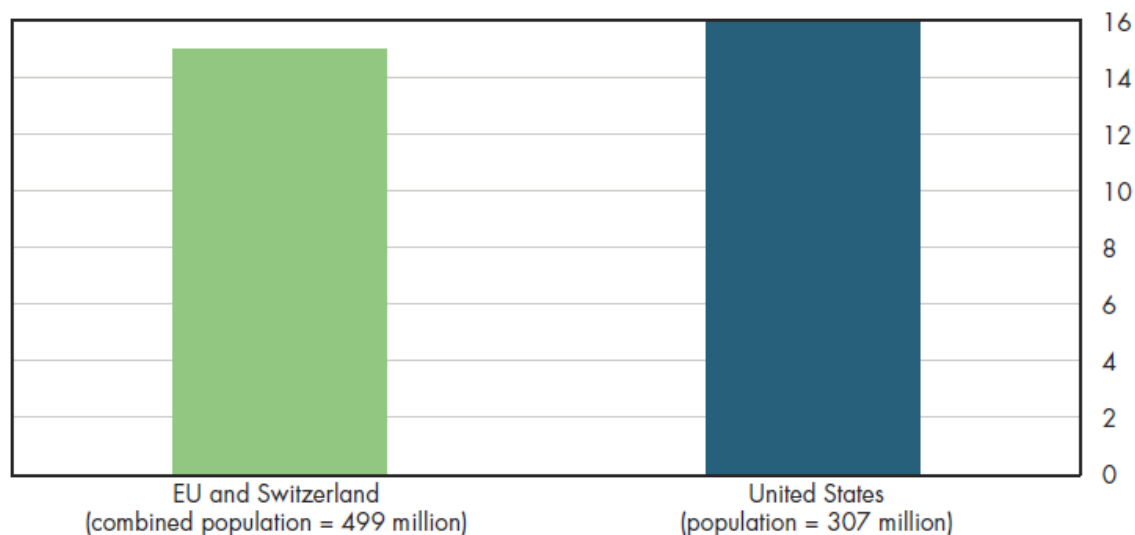
Note: More than one country shares the credit for some innovations. Population figures are for 2009.

The United States also is superior to the EU and Switzerland in terms of the top 29 pharmaceutical innovations developed in the 40 years starting in 1968 (figure 18.1b). This dominance in pharmaceutical innovation can be attributed to the sizable investments made by the pharmaceutical industry into R&D. The United States also dominates global funding for pharmaceutical R&D (figure 18.2a).

18.1.1 Downloads

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- Figure 18.1b Editable Slide (can be formatted as desired)[5]

18.1.2 References

A. Whitman G and R Rand. Bending the Productivity Curve: Why America Leads the World in Medical Innovation. Cato Insitute. Policy Analysis No 654. November 18, 2009. http://www.cato.org/pubs/pas/pa654.pdf (accessed August 10, 2010).

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[2]https://hub.mili.csom.umn.edu/content/m10075/latest/18.1aIMG.ppt
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[4]https://hub.mili.csom.umn.edu/content/m10075/latest/18.1bIMG.ppt
[5]https://hub.mili.csom.umn.edu/content/m10075/latest/18.1bDATA.ppt

18.2 18.2 US Accounts for More than Half of World Pharmaceutical R&D Spending[6]

The U.S. dominance in pharmaceutical research can be measured in two ways. First, among the 10 countries that rank highest in pharmaceutical R&D expenditures, the U.S. share has ranged from more than 50 percent to 65 percent of the collective R&D spending by this group (figure 18.2a). This has been true since at least 1990. Unfortunately, information is available for only four of these countries for 1980; thus, it is not possible to attain certainty about the U.S. share that long ago.

18.2a Among the top 10 global funders of pharmaceutical R&D, the United States accounts for more than half to two-thirds of total spending

Percentage of aggregate R&D expenditures

Top 10 global funders of pharmaceutical R&D
(listed [left to right] by 2006 R&D expenditures in U.S. dollars PPP)
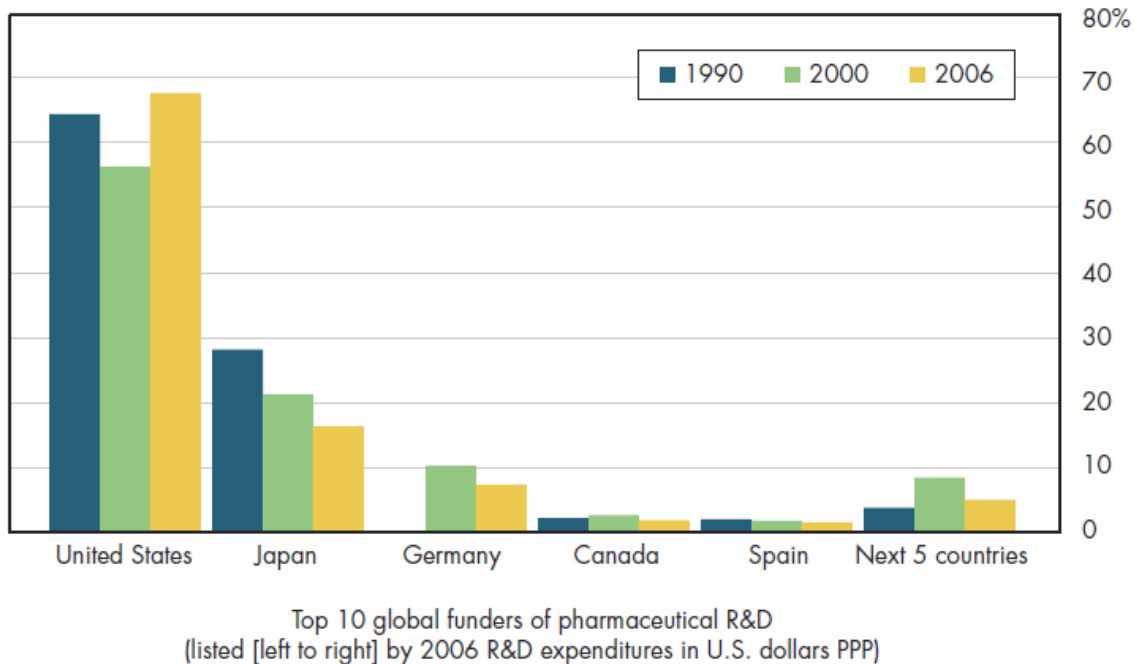
Note: Data not reported for selected years in selected countries. Shares are of summed totals for countries that reported data.

Of course, the United States has a substantially larger population than any of the others on this list. Thus, an arguably better comparison examines pharmaceutical R&D spending per capita (figure 18.2b). Doing so reveals that only Denmark has higher relative spending on pharmaceutical R&D than does the United States; in 2006, Denmark ranked sixth on the top-ten list cited (figure 18.2a).

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[6]This content is available online at <https://hub.mili.csom.umn.edu/content/m10076/1.2/>.

18.2b On a per capita basis, U.S. spending on pharmaceutical R&D is exceeded only by Denmark

Per capita pharmaceutical R&D expenditures (U.S. dollars, PPP)
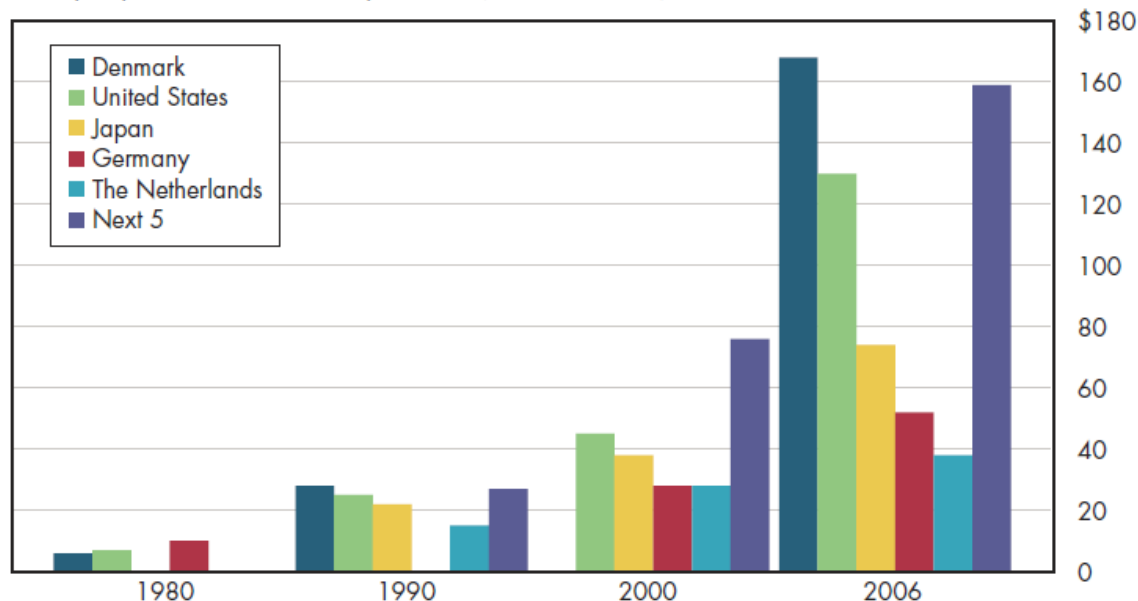
Some demand-side factors might affect where pharmaceutical companies are located. However, location decisions of major pharmaceutical companies also are driven by the availability and cost of the scientific research personnel required to conduct R&D, and by government regulations that affect how R&D is conducted.

Another factor that has fueled U.S. pharmaceutical R&D relates to generic competition. The Hatch-Waxman Act enacted in 1984, designed to promote the use of generics, and the rise of managed care formularies have been cited as the principal drivers of growth in the U.S. generic drug industry. Unless there are externalities (my taking a drug benefits or harms someone else's health), competition should lead to the desired result of pushing drug prices down to the marginal cost of producing them. It likewise will encourage a socially optimal level of consumption, that is, where the marginal benefit of consumption equals the marginal cost of supplying a drug. Numerous studies have shown that following the expiration of patents, prices fall toward marginal costs (the more generic competitors, the more prices fall). Generic competition thus forces brand-name pharmaceutical manufacturers to invest in R&D to ensure a steady pipeline of new products under development.

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[10]https://hub.mili.csom.umn.edu/content/m10076/latest/18.2bDATA.ppt

18.2.2 References

A. Organisation for Economic Co-operation and Development.

18.3 18.3 US Accounts for a Relatively Small Share of Pharmaceutical Exports[11]

U.S. dominance in pharmaceutical research is not mirrored in its shares of pharmaceutical exports. Not only is this share small—approximately 10 percent in 2006—but it has declined considerably since 1980, when it was closer to 20 percent (figure 18.3a). The United States likewise accounts for a modest share of imports—approximately 15 percent (compared with 45 percent of global pharmaceutical sales accounted for by those who live in the United States).

18.3a Since 1980, the U.S. share of pharmaceutical exports within the OECD has been declining while its share of imports has increased since 1980

U.S. share of aggregate value of pharmaceuticals traded, in U.S. dollars, PPP
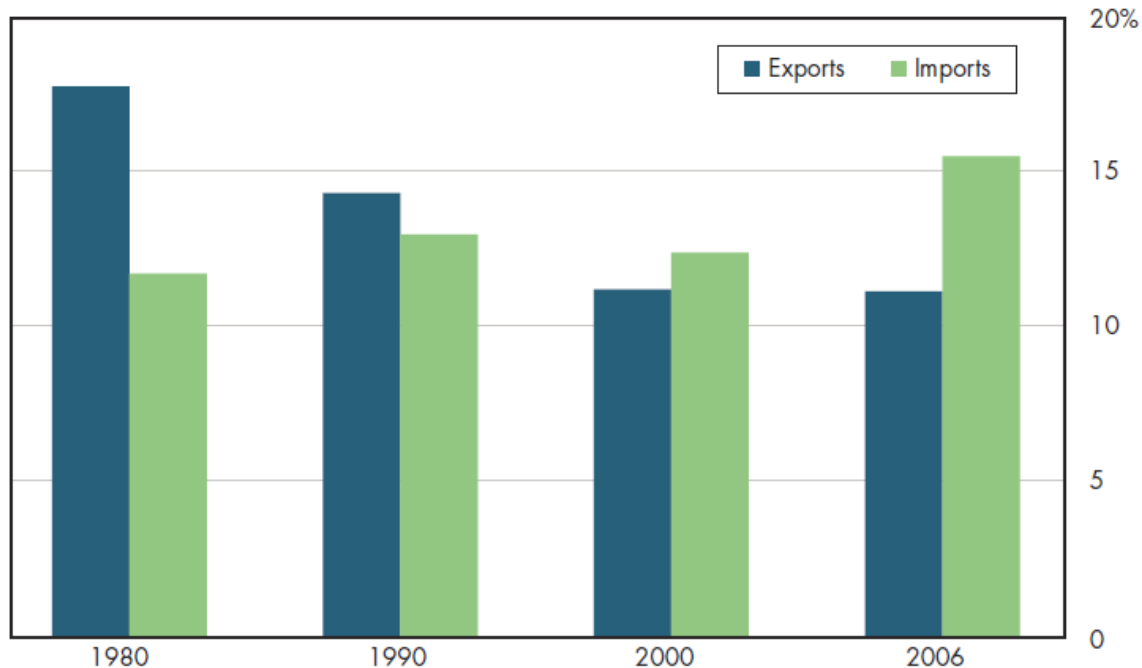
    Measures of exports and imports are based on the location of the manufacturing facility, regardless of ownership. The approximate 10 percent export share in 2006 does *not* imply that U.S.-owned firms supplied 10 percent of pharmaceutical products purchased by other nations. Nor does it mean that U.S.-owned firms accounted for 10 percent of pharmaceuticals exported because some foreign-owned firms (for example, GlaxoSmithKline [GSK]) have U.S.-based manufacturing facilities. It simply refers to the share of pharmaceutical products manufactured on U.S. soil that cross country borders.

    Health-related goods and services play a much smaller role in the U.S. trade imbalance than they do in the entire economy. In 2009, the U.S. trade imbalance (excess of imports over exports) exceeded one-half trillion dollars (figure 18.3b). Pharmaceutical, medical and dental products accounted for approximately 7 percent of this total. This was offset by a trade surplus in scientific, hospital, and medical equipment

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[11]This content is available online at <https://hub.mili.csom.umn.edu/content/m10077/1.2/>.

that reduced the trade imbalance by less than 2 percent. Thus, the health industry overall accounted for approximately 20 percent of the most recently measured trade imbalance.

18.3b The health sector contributes a relatively small share to the U.S. trade imbalance, but it appears to be increasing

Balance of imports over exports as a percentage of U.S. net trade balance
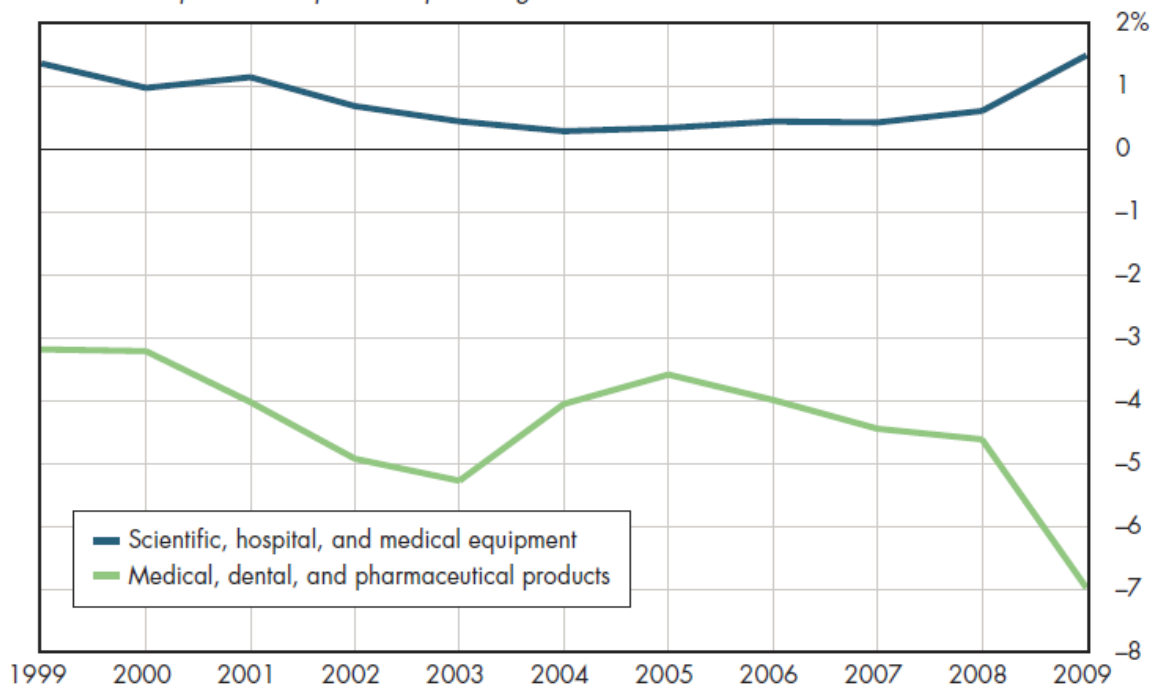
For the limited time for which such detailed statistics are available, it appears that this share is increasing. This scenario of trade involving the health care sector is not complete. Medical tourism, for example, appears to be a rapidly growing industry. Its magnitude is not large enough yet to warrant separate tracking by the U.S. government.

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18.3.2 References

A. Author's calculations.
B. Department of Commerce. Bureau of Economic Analysis.
C. Organisation for Economic Co-operation and Development.

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[12]https://hub.mili.csom.umn.edu/content/m10077/latest/18.3aIMG.ppt
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Chapter 19

Chapter 19: Do Americans Get Good Value for Money in Health Care?

19.1 19.1 US Health Spending Appears to Provide Good Value for the Money[1]

The United States appears to have attained good value for the money from the trillions of dollars spent on health care since 1987 (figure 19.1a). The average cost-effectiveness of this sizable expenditure is only approximate because certainty about how much of the gain in life expectancy over this period can be attributed to medical care is not achievable.

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10060/1.1/>.

19.1a Even after accounting for the resources spent to add a year of healthy life, U.S. health spending appears to provide good value for the money

Cost per life-year gained, 1987–2000 (2000 dollars)
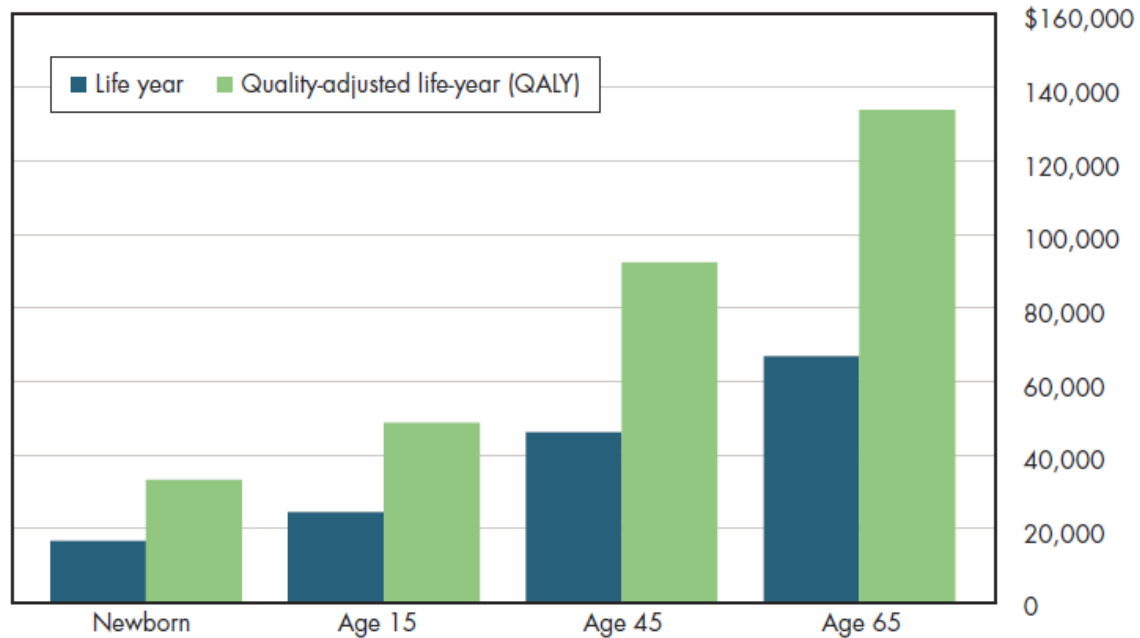
Studies of individual factors (for example, infant mortality and mortality due to heart problems) suggest that medical care improvements have been responsible for at least half of the observed mortality reductions during this time. Thus, the numbers in figure 19.1a result from an assumption that half of life expectancy gains are from expenditures on medical care, as opposed to investments in highway safety, changes in drunk driving laws, speed limits, and other non-medical factors that surely also made a contribution.

Even precisely specifying the exact contribution of health spending to better health, some might disagree about what threshold to use to distinguish spending that was *cost-effective* from that which was not. Medicare spends approximately $75,000 a year on kidney dialysis for each patient who has end-stage renal disease. Without it, such patients would die. Thus, a minimum estimate of the value of life in the United States (implied by our willingness to pay for it) is $75,000 per year. As figure 19.1a shows, spending for all age categories was less than this threshold. Thus, on average, we apparently received good value for the money from health spending.

However, not all added years of life are lived in good health (for example, added years for someone who is bedridden). A quality-adjusted life-year (QALY) is one in good health, that is, two years in bed might be viewed as one QALY. For the elderly, spending per added QALY was more than $130,000. Reasonable people can disagree about whether such spending was worthwhile.

A somewhat less-detailed analysis has examined health spending since 1960. This too shows mixed results. Spending per added year of life generally was less than the $75,000 threshold for most ages and times (figure 19.1b). Again, this suggests that health spending provided good value for the money on average, but the cost to achieve an added year of life appears to be increasing. Even being cost-effective on average does not mean that there is no waste or inefficiency in how we spend health dollars.

19.1b On average, increases in U.S. health spending appear to have provided reasonable value for the money

Spending per year of life gained (2002 dollars)
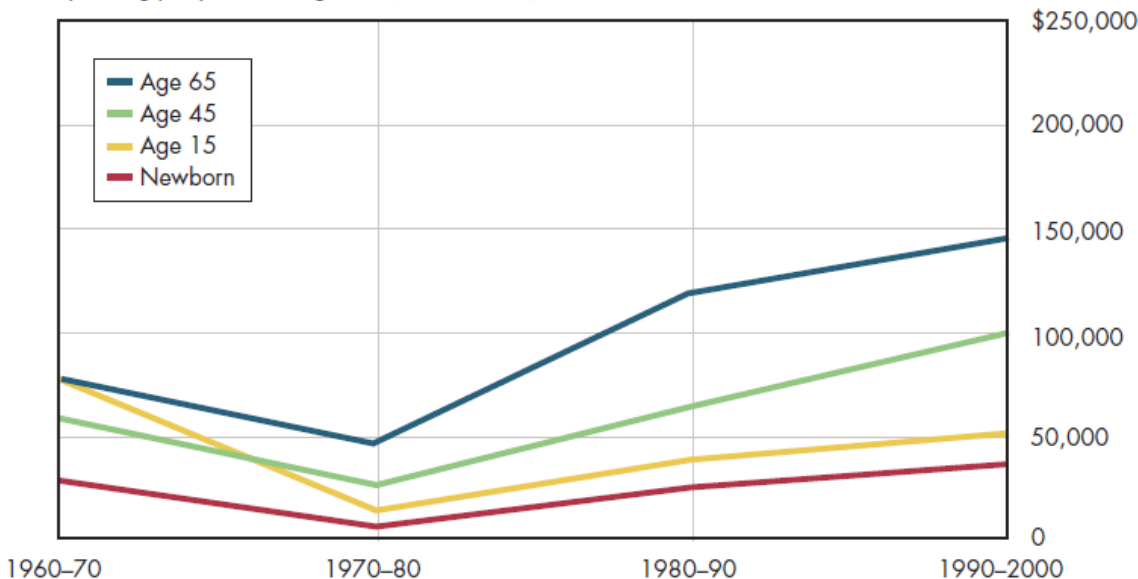
Note: Spending per year of life gained is defined by the change in spending over each decade divided by the change over the decade in expected years of life at the ages shown.

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[3]https://hub.mili.csom.umn.edu/content/m10060/latest/19.1aDATA.ppt
[4]https://hub.mili.csom.umn.edu/content/m10060/latest/19.1bIMG.ppt
[5]https://hub.mili.csom.umn.edu/content/m10060/latest/19.1bDATA.ppt

19.2 19.2 Geographic Differences in Broad Health Outcomes Are Associated with Health Spending[6]

Among industrialized nations, some association exists between expenditures on health and better health outcomes. One approximate cross-national measure of health outcomes is the number of years lost due to premature death. Because life expectancy in industrialized countries now exceeds 70 years, deaths before age 70 are premature. Using this metric, someone dying at age 20 would have lost 50 years of life, whereas someone dying at age 69 would have lost only one year. Giving much greater weight to deaths occurring early in life seems superior to treating all deaths equally. Adding all the years of lost life at all ages and dividing by population numbers provides a standardized measure across countries of different sizes.

   Using such a measure, the burden from premature death appears to decline with increased health spending (figure 19.2a). The United States is a rather extreme outlier. It spends much more money on health care but performs much worse on this metric. Some use numbers such as these to argue that the United States does not get good value for the money compared with that of other countries.

19.2a Years lost due to premature death are many more in the United States than in most other industrialized nations

Years of potential life lost before age 70 per 100,000 population (2006)

Health spending per person (U.S. PPP, 2006 dollars)
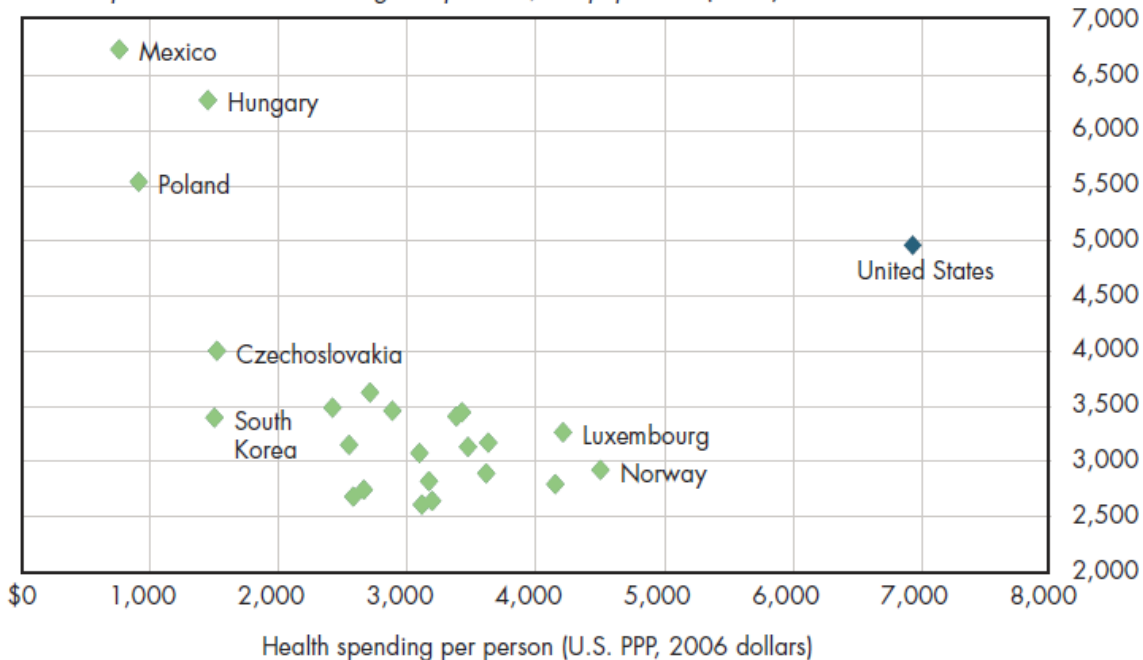
   Data from the United States illustrate the limitations of such conclusions (figure 19.2b). First, for any given level of health spending, there is almost a two-to-one difference in the premature death burden. Thus, the huge difference between Louisiana and Washington cannot be attributed to health spending because both states spend almost identical amounts. Conversely, Utah and Maine have almost identical premature death burdens, yet Maine spends almost 75 percent more on health care per resident. Washington, D.C. is an outlier to approximately the same extent that the United States is among industrialized countries. If health spending determined health outcomes, these data would imply worse outcomes with higher spending. Removing D.C.'s unique experience, health outcomes tend to improve with increasing health spending, but other factors clearly make a difference.

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   [6]This content is available online at <https://hub.mili.csom.umn.edu/content/m10061/1.1/>.

19.2b Wide differences in years lost due to premature death exist across states, even with identical health spending levels

Years of potential life lost before age 75 per 100,000 population (2004)
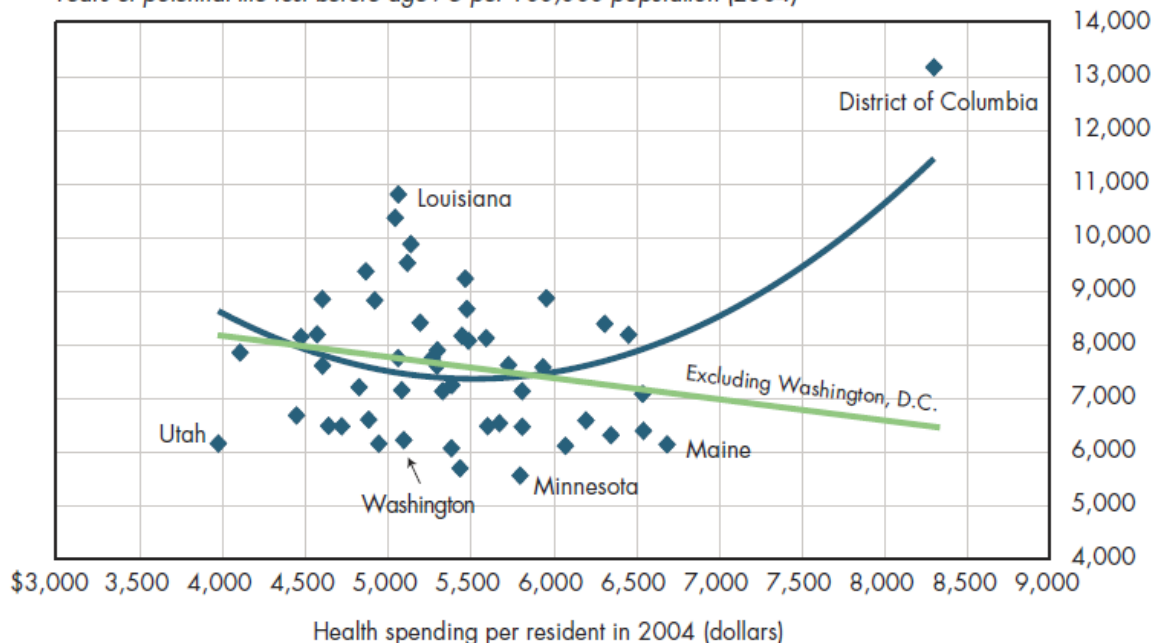
Note: The curved line is a best-fitting prediction line using all the states and the District of Columbia. The straight line is a best-fitting prediction line that excludes the District of Columbia.

19.2.1 Downloads

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- Figure 19.2b Editable Slide (can be formatted as desired)[10]

19.2.2 References

A. Author's calculations.
B. Department of Health and Human Services. Centers for Disease Control and Prevention.
C. Department of Health and Human Services. Centers for Medicare and Medicaid Services.
D. Organisation for Economic Co-operation and Development.

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[7]https://hub.mili.csom.umn.edu/content/m10061/latest/19.2aIMG.ppt
[8]https://hub.mili.csom.umn.edu/content/m10061/latest/19.2aDATA.ppt
[9]https://hub.mili.csom.umn.edu/content/m10061/latest/19.2bIMG.ppt
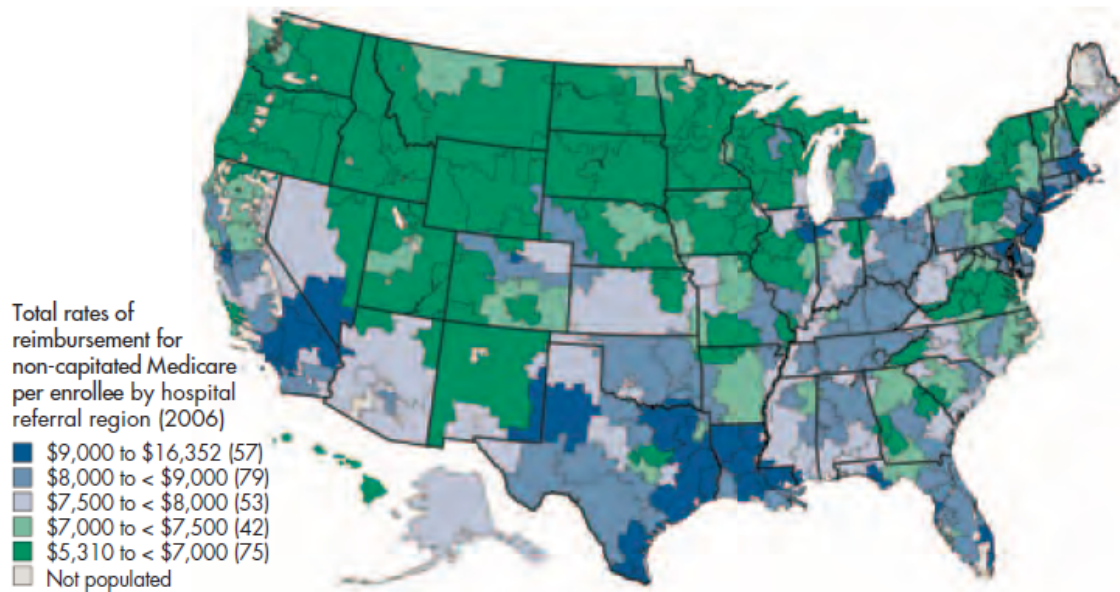[10]https://hub.mili.csom.umn.edu/content/m10061/latest/19.2bDATA.ppt

19.3 19.3 Medicare Spending & Spending Growth Vary Substantially across Geographical Areas[11]

There is almost a three-to-one difference in Medicare spending per enrollee between hospital markets with the least amount of spending and those with the highest (figure 19.3a). These enormous differences by location are not a new phenomenon, having been observed for decades. Many factors contribute to these differences, but they are not entirely well understood. Because Medicare eligibility and benefits are the same across the entire country, these factors cannot explain the large geographic variations in Medicare spending.

19.3a Medicare reimbursements per enrollee vary substantially across hospital market areas in the United States

Total rates of reimbursement for non-capitated Medicare per enrollee by hospital referral region (2006)

- $9,000 to $16,352 (57)
- $8,000 to < $9,000 (79)
- $7,500 to < $8,000 (53)
- $7,000 to < $7,500 (42)
- $5,310 to < $7,000 (75)
- Not populated

Note: Non-capitated Medicare is equivalent to fee-for-service Medicare; i.e., it excludes spending related to members of Medicare Advantage plans such as Kaiser or other HMOs. Numbers in parentheses represent the number of market areas in each category.

The availability of resources contributes to these spending differences. Geographic areas that have more physicians or hospital beds relative to the population tend to spend more, which in turn can attract more physicians. Differences in organizational and physician decision-making, which some characterize as *practice style*, also play a critical role in these financial differences. Many discretionary decisions, such as whether a patient warrants admission to the hospital, hospital lengths of stay, whether a patient is referred to a specialist, the ordering of various tests, or how often to see chronically ill patients, collectively drive much of the variation.

Medicare's fee-for-service system also plays a role. Geographic variations in Medicare spending are not always replicated in private health plans, in which most members are in some form of managed care. Increases in Medicare spending also vary geographically. Areas that have high spending growth are not generally areas with the highest spending *levels*. Thus, Medicare's geographic variations might decrease over time.

Differences in income, race, and health status play a relatively minor role in explaining the geographic variations in Medicare spending (figure 19.3b). Income can explain health-spending differences across countries and individual states. However, income explains little of the difference between Medicare regions that spend more compared with those in the bottom 20 percent of spending.

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[11]This content is available online at <https://hub.mili.csom.umn.edu/content/m10062/1.1/>.

19.3b Differences in income, race or health explain less than half the spending differences across regions

Annual per capita Medicare spending ($ difference from quintile 1)
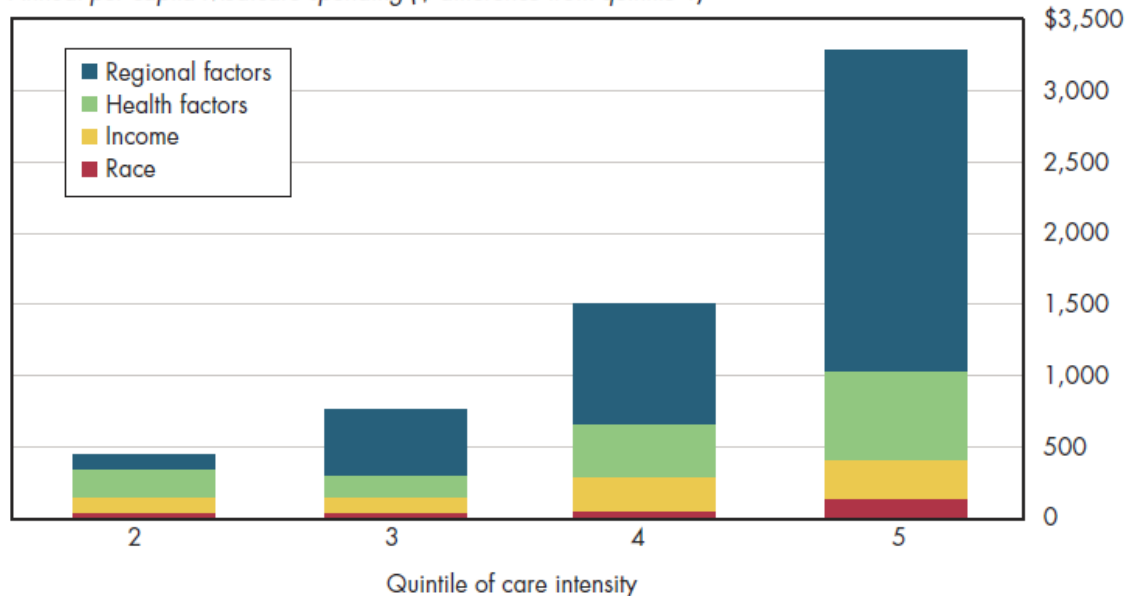
Note: The vertical bars show the proportion of the difference in spending between regions in each of the four top care-intensity quintiles and the regions in the lowest quintile that can be explained by differences in patients' race, income, health factors (self-reported health, presence or absence of diabetes, high blood pressure, body-mass index, and smoking history), and regional factors. All models control for age, gender, and urban or rural residence.

19.3.1 Downloads

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- Figure 19.3b Image Slide (as it appears above)[14]
- Figure 19.3b Editable Slide (can be formatted as desired)[15]

19.3.2 References

A. Fisher E, D Goodman, J Skinner and K Bronner. Health Care Spending, Quality, and Outcomes. Dartmouth Institute for Health Policy and Clinical Practice. Hanover NH. February 27, 2009.
B. Sutherland JM, ES Fisher and JS Skinner. Getting Past Denial—The High Cost of Health Care in the United States. New England Journal of Medicine 2009; 361:1227-30.

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[12]https://hub.mili.csom.umn.edu/content/m10062/latest/19.3aIMG.ppt
[13]https://hub.mili.csom.umn.edu/content/m10062/latest/19.3aDATA.ppt
[14]https://hub.mili.csom.umn.edu/content/m10062/latest/19.3bIMG.ppt
[15]https://hub.mili.csom.umn.edu/content/m10062/latest/19.3bDATA.ppt

19.4 19.4 US Health Spending per Capita Is Not Far from Expected[16]

There is a widespread perception that the United States spends "too much" on health care. Health care is a "normal" good. As incomes increase, so does consumption of health care. Thus, an important reason that the United States has much higher health spending per person is that it also has much higher GDP per person than most other countries have. The relationship between income and health is sufficiently tight that income alone explains approximately 90 percent of the differences in health spending across countries. A statistical prediction line is one that best fits income versus health spending data for OECD countries. The United States is far above its predicted value when using such a line (figure 19.4a).

19.4a The conventional wisdom is that U.S. health spending is far above its expected level, given the nation's per person GDP

Health expenditures per capita (U.S. PPP, 2004 dollars)

GDP per person (U.S. PPP, 2004 dollars)
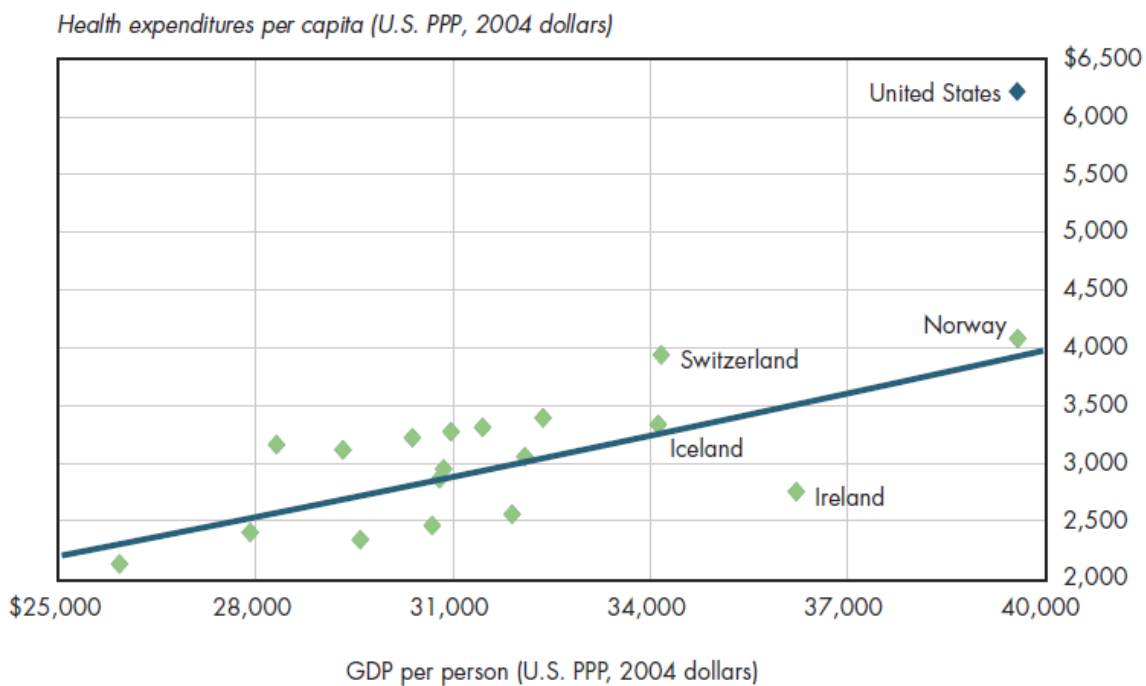
The United States is a huge country that dwarfs many of the industrialized countries of Europe, Asia, or North America. For example, if the U.S. states were countries, six would rank among the top 20 countries in the OECD in terms of GDP. Health spending per resident varies by a factor of two to one across states. Separating U.S. states (including D.C.), 13 Canadian provinces, and seven Australian states/territories, the relationship between GDP per capita and health spending per capita changes considerably (figure 19.4b). Both Nunavut in Canada and D.C. are clear outliers. Calculating the best-fitting prediction line that ignores these outliers, the line increases initially but eventually plateaus. (Were the outliers included, this line would continue to rise although much slower than as illustrated in figure 19.4a.)

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[16]This content is available online at <https://hub.mili.csom.umn.edu/content/m10063/1.1/>.

19.4b When sub-national areas are taken into account, U.S. health spending is almost exactly where it is expected to be, given U.S. GDP

Health spending per person (U.S. PPP, 2004 dollars)

GDP per capita (U.S. PPP, 2004 dollars)
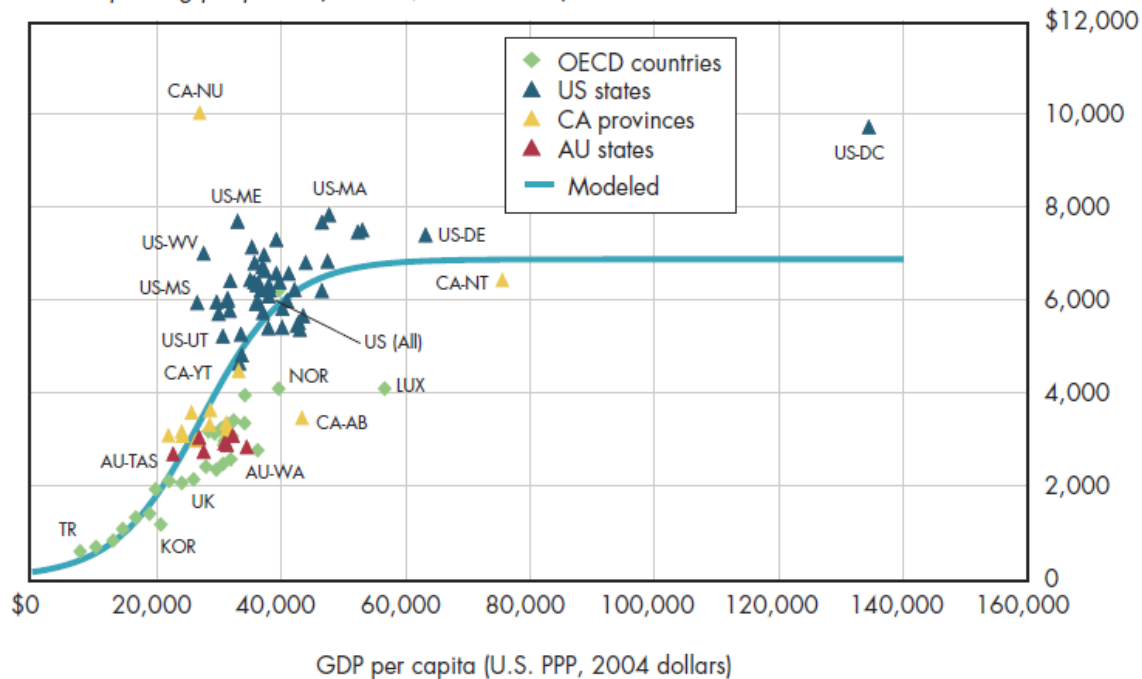
This alternative S-shaped line in figure 19.4b fits the data better (it explains more of the spending variation) than does the line in figure 19.4a. Although U.S. states are both above and below the line, health spending per capita for the United States as a whole is almost exactly on the prediction line. The small difference between actual and predicted health spending illustrated in figure 19.4b does not prove that the nation's health spending is what it "should" be nor does the large difference in actual and predicted health spending in figure 19.4b. The size of the difference is sensitive to the assumed shape of the prediction line. Reasonable people can disagree about which shape more accurately predicts where other countries will be when they reach the U.S. level of GDP per capita.

19.4.1 Downloads

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- Figure 19.4b Image Slide (as it appears above)[19]
- Figure 19.4b Editable Slide (can be formatted as desired)[20]

19.4.2 References

A. Eyermann C. Redefining the Health Care Debate—Part Two. Political Calculations. http://politicalcalculations.blogspot.com/2009/07/redefining-health-care-debate-part-2.html (ac-

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[17]https://hub.mili.csom.umn.edu/content/m10063/latest/19.4aIMG.ppt
[18]https://hub.mili.csom.umn.edu/content/m10063/latest/19.4aDATA.ppt
[19]https://hub.mili.csom.umn.edu/content/m10063/latest/19.4bIMG.ppt
[20]https://hub.mili.csom.umn.edu/content/m10063/latest/19.4bDATA.ppt

cessed September 1, 2010).
  B. Organisation for Economic Co-operation and Development.

19.5 19.5 Increased US Health Spending Cannot Be Explained by Health Services Use[21]

Increased U.S. health care spending generally does not appear to be the result of more health care services use compared with use in other industrialized nations. The annual number of physician visits, for example, is as much as 100 to 200 percent higher in other G7 countries (figure 19.5a). Similarly, each one of these nations exceeds the United States in acute hospital days per person.

19.5a Compared with other G7 countries, the United States generally uses fewer acute care services such as doctor visits and hospital care, but not pharmaceuticals

Percentage indexes: 100=U.S. rate of use (2006)
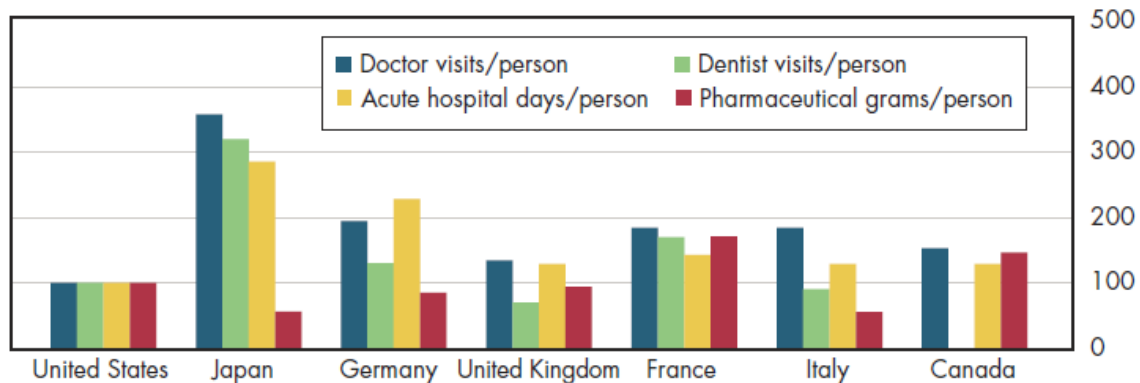
Note: Figures for pharmaceuticals are for 2005.

Pharmaceutical use, measured in grams per capita, is higher in the United States compared with other G7 countries (except France and Canada). On average, the differences are not large. Because pharmaceuticals account for only one-eighth of all health spending, these differences cannot explain per capita spending differences measured in double-digit percentages.

U.S. use of diagnostic technology (such as CAT scanners or MRI machines) and advanced medical procedures is higher than in other G7 nations, except in Germany and Japan. Examples of advanced medical procedures include percutaneous transluminal coronary angioplasty (PTCA), used to clean out clogged arteries, and coronary artery bypass graft (CABG) surgery, which also generally is used more in the United States than elsewhere (figure 19.5b). However, the aggregate spending on such procedures is not sufficient to account for spending differences as large as currently exist.

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[21]This content is available online at <https://hub.mili.csom.umn.edu/content/m10064/1.1/>.

19.5b U.S. use of technology generally is much more than use by the other G7 nations, except Japan and Germany
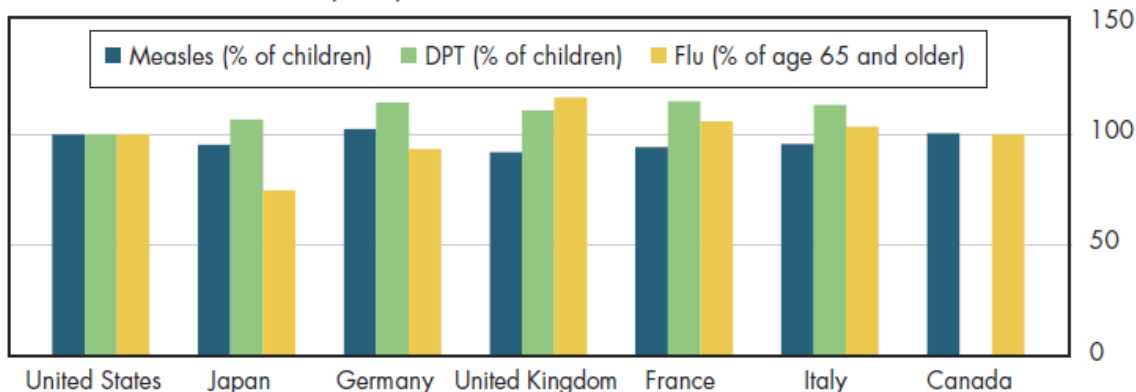
Indexes: 100=U.S. rate of use (2006)
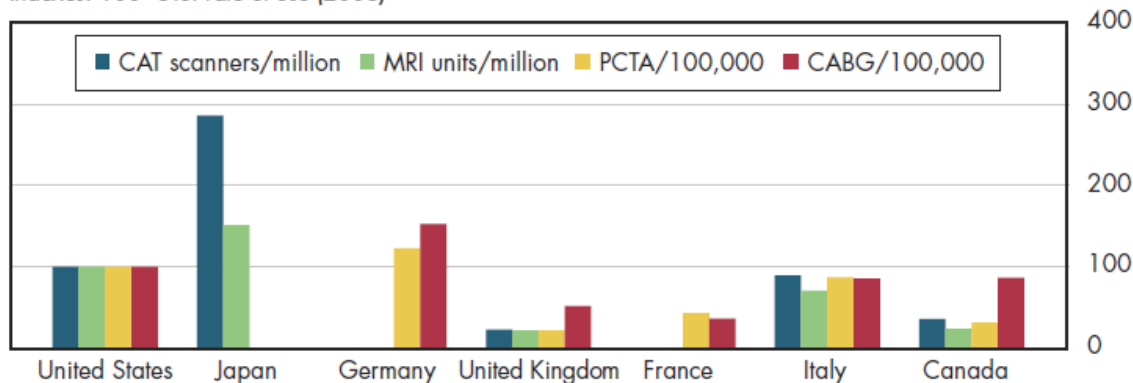
Immunization rates for children (for example, for measles, or for diphtheria/pertussis/tetanus [DPT]) and for the elderly (flu shots) generally are the same as rates in the rest of the G7 (figure 19.5c).

19.5c Immunization rates in the United States are generally the same as those in other G7 nations

Indexes: 100=U.S. rate of use (2006)

Health professionals in the United States generally are paid much more than their counterparts are elsewhere in the G7 (refer to figure 11.4a). Because labor costs account for such a large part of the health sector, it would be difficult to avoid higher U.S. spending levels unless the use of services by Americans was drastically lower than elsewhere. Many experts believe that the United States also pays the highest prices for medical equipment, in part because it tends to be an early adopter of new technologies. Higher introductory prices typically are paid by early adopters.

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[23]https://hub.mili.csom.umn.edu/content/m10064/latest/19.5aDATA.ppt

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- Figure 19.5c Image Slide (as it appears above)[26]
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19.5.2 References

A. Organisation for Economic Co-operation and Development.

19.6 19.6 US Relies Heavily on Specialists in Contrast to Primary Care Doctors[28]

In the United States, seven in 10 physicians are specialists (figure 19.6a). This is higher than in France or Canada, where fewer than half of practicing doctors are specialists. However, by this same metric, U.S. reliance on specialists is only somewhat higher than in the UK, the same as in Germany, and is lower than in Japan.

19.6a The United States is not alone in relying heavily on specialty physician care

Specialists as a percentage of practicing physicians
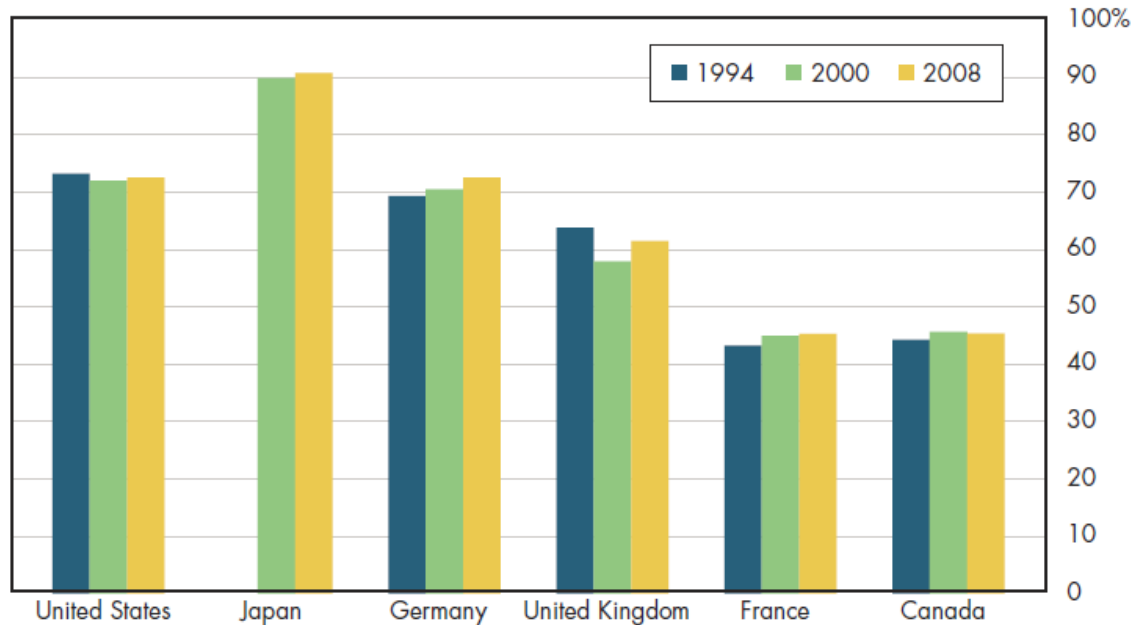
In most countries, the specialty share has been increasing since 1994. In the United States, the specialty share is down slightly from its 1994 level. However, in the most recent residency match, fewer than 20 percent of medical residencies were in primary care, suggesting that absent some major change in policy, the specialty share is likely to increase in the future.

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[24]https://hub.mili.csom.umn.edu/content/m10064/latest/19.5bIMG.ppt
[25]https://hub.mili.csom.umn.edu/content/m10064/latest/19.5bDATA.ppt
[26]https://hub.mili.csom.umn.edu/content/m10064/latest/19.5cIMG.ppt
[27]https://hub.mili.csom.umn.edu/content/m10064/latest/19.5cDATA.ppt
[28]This content is available online at <https://hub.mili.csom.umn.edu/content/m10065/1.1/>.

The ratio of nurses to physicians in the United States is approximately in the middle of the remaining OECD countries for which such data are available (figure 19.6b). However, Canada's ratio is 50 percent higher than in the United States and in countries most comparable to the United States in terms of health spending per capita (the Netherlands, Norway, and Switzerland), the ratio is approximately 30 percent more. No strong inferences can be made about either efficiency or quality from these comparisons, but they illustrate how differently industrialized nations organize and deliver medical care.

19.6b The ratio of practicing nurses to doctors in the United States is comparable to the ratios in other OECD nations

Ratio of practicing nurses to practicing physicians (2004)
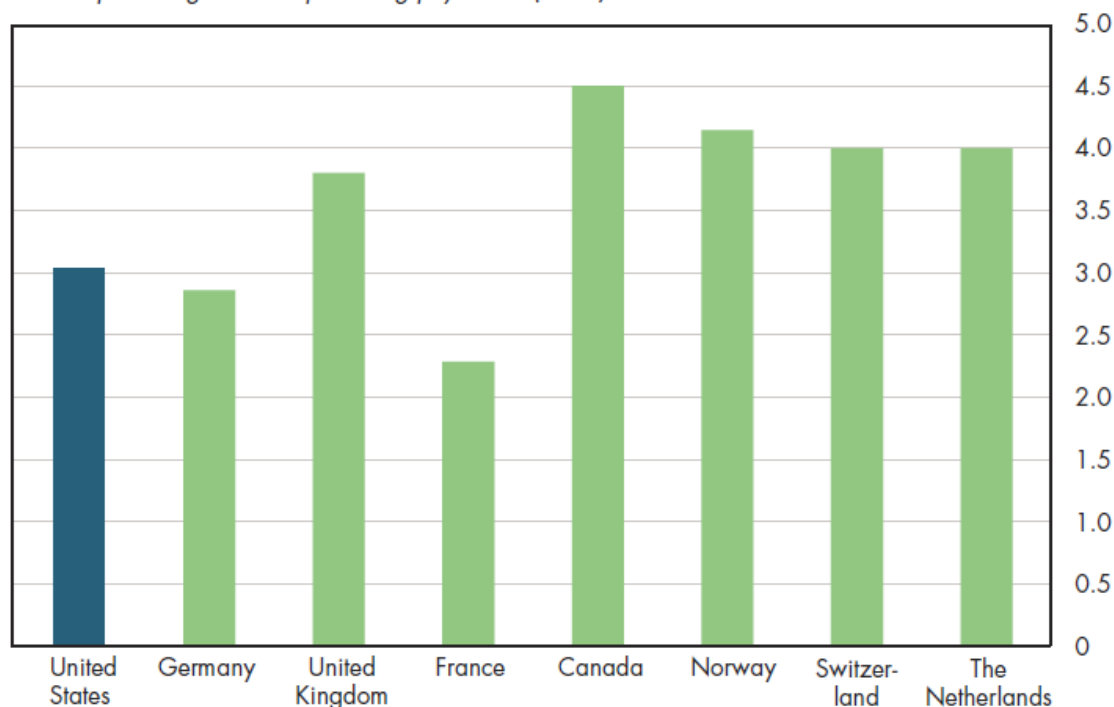
The new health reform law has several provisions designed to expand the supply of primary care providers. The law included (starting in 2011) a 10 percent bonus for five years under the Medicare fee schedule, to family doctors, internists, geriatricians, nurse practitioners, and physician assistants who provide 60 percent of services in qualifying evaluation and management codes. The law also requires states to increase Medicaid payment rates to Medicare levels in 2013 and 2014 for providers who deliver certain primary care services. These measures might encourage more medical students to enter these fields and also might delay the retirement of those thinking about quitting their practices.

If implemented, the new health reform law will increase demand for primary care. How much of that ultimately is provided through physicians as opposed to less expensive mid-level providers (for example, physician assistants or nurse practitioners) remains to be seen.

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- Figure 19.6b Image Slide (as it appears above)[31]
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19.6.2 References

A. Organisation for Economic Co-operation and Development.

19.7 19.7 Americans Pay Higher Prices for Brand-Name Drugs among Major Industrialized Countries[33]

U.S. pharmaceutical spending per capita is higher than in the rest of the G7. This is true whether spending is measured in terms of manufacturer prices or in terms of public prices that include wholesaler and retailer distribution margins and value-added taxes. Americans tend to use stronger drug formulations. Thus, even though U.S. prescription drug use is second lowest within the G7 based on doses per capita, the United States is exceeded only by Canada and France in terms of number of grams per capita.

Americans pay higher prices for drugs on patent, but much lower prices for generic medications and over-the-counter medications not requiring a prescription (figure 19.7a). Generic medications account for 70 percent of U.S. pharmaceuticals by volume but less than 20 percent by sales. Prices for brand-name drugs still enjoying patent protection can be set much higher. This allows the manufacturers to recoup the hundreds of millions of dollars in R&D costs that it takes on average to bring one new drug to market. Generics are less expensive in the United States because many factors in the pharmaceutical market contribute to making the generic sector extremely price competitive. Greater regulation, among other factors, contributes to higher generic prices elsewhere in the G7.
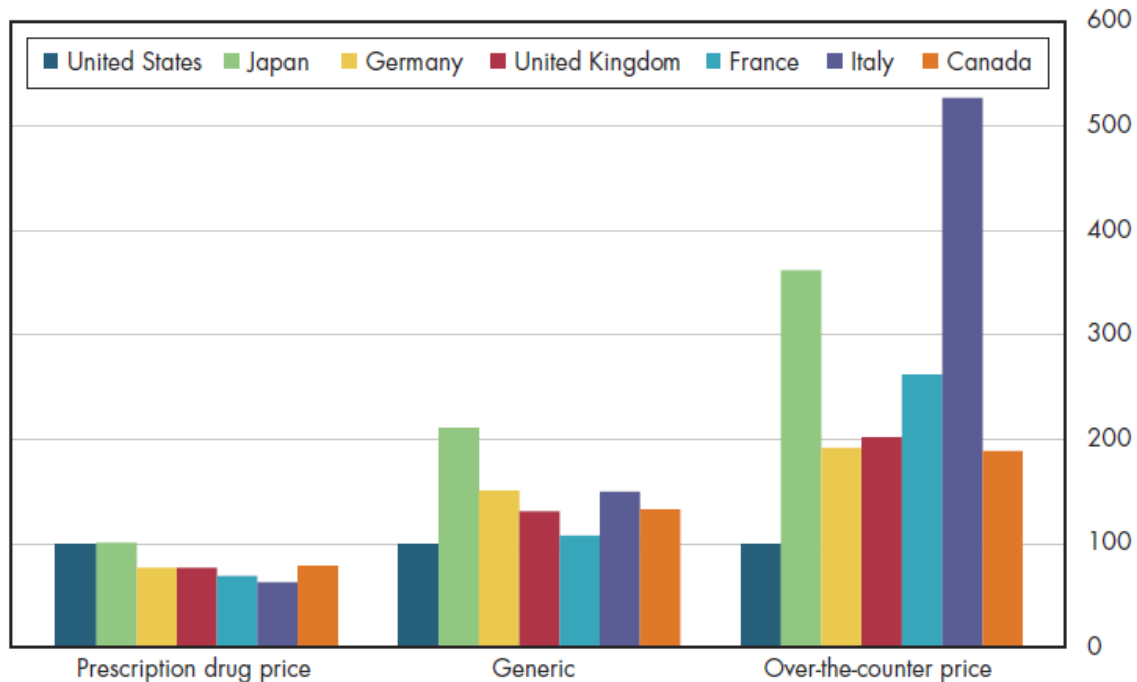
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[31]https://hub.mili.csom.umn.edu/content/m10065/latest/19.6bIMG.ppt
[32]https://hub.mili.csom.umn.edu/content/m10065/latest/19.6bDATA.ppt
[33]This content is available online at <https://hub.mili.csom.umn.edu/content/m10066/1.1/>.

19.7a Americans generally pay more for drugs on patent than other nations in the G7 do but less for generic and over-the-counter products

Indexes: 100=U.S. (2005)

Legend: United States, Japan, Germany, United Kingdom, France, Italy, Canada

Categories: Prescription drug price, Generic, Over-the-counter price

The prescription drug price index shown in figure 19.7a is a weighted average of brand name and generic prescription medications. This index illustrates that, except in Japan, the lower prices Americans pay for generics do not offset the higher prices they pay for patented pharmaceuticals. However, drugs, like most market commodities, are priced based on willingness to pay, which in turn reflects ability to pay.

Using manufacturers' prices converted to U.S. dollars at the prevailing exchange rate, the United States has higher pharmaceutical prices than any other G7 competitor except Japan. However, when this same price index is normalized to eliminate differences in GDP per capita (an approximate measure of average income), U.S. drugs are more affordable than in Japan, Germany, and Canada (figure 19.7b). Among the G7, only Italy and the UK have more affordable drugs than in the United States.

19.7b Manufacturers' prices generally are higher in the United States, but U.S. pharmaceuticals are generally more affordable because of higher incomes

Pharmaceutical price indexes: 100=U.S. (2005)
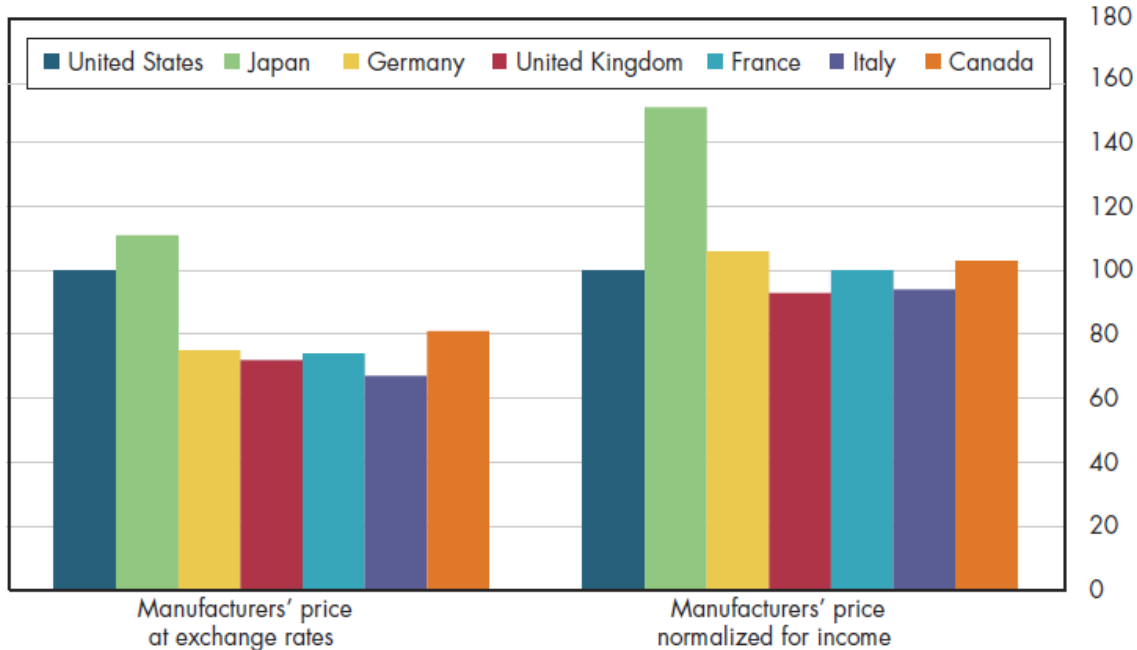
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- Figure 19.7b Image Slide (as it appears above)[36]
- Figure 19.7b Editable Slide (can be formatted as desired)[37]

19.7.2 References

A. Danzon PM and MF Furukawa. International Prices and Availability of Pharmaceuticals in 2005. Health Affairs 2008; 27(1):221-33.

19.8 19.8 Medical Malpractice Explains Some Difference in Health Spending between US and Competitors[38]

The direct and hidden costs of the medical tort system amount to approximately six dollars for every $100 in NHE (figure 19.8a). The visible costs of the legal system and medical liability premiums for health facilities and health professionals equal only approximately 1 percent of health spending.

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[34]https://hub.mili.csom.umn.edu/content/m10066/latest/19.7aIMG.ppt
[35]https://hub.mili.csom.umn.edu/content/m10066/latest/19.7aDATA.ppt
[36]https://hub.mili.csom.umn.edu/content/m10066/latest/19.7bIMG.ppt
[37]https://hub.mili.csom.umn.edu/content/m10066/latest/19.7bDATA.ppt
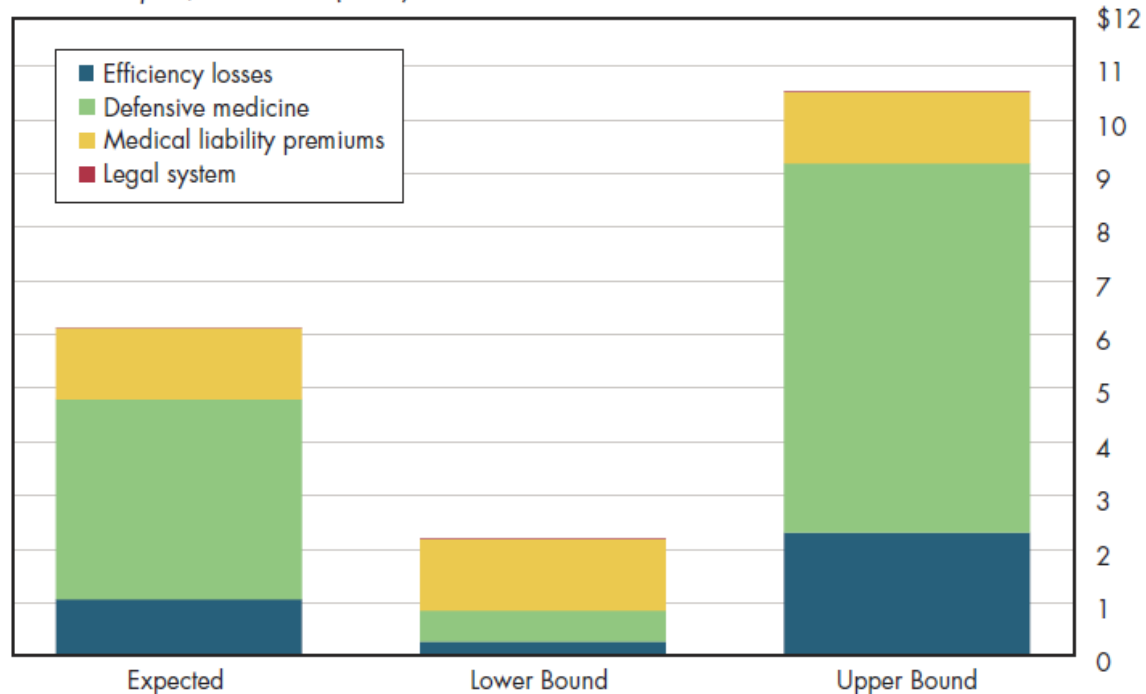[38]This content is available online at <https://hub.mili.csom.umn.edu/content/m10067/1.1/>.

19.8a The direct and indirect costs of the medical tort system amount to approximately six dollars for every 100 dollars of health spending

Annual cost per $100 of NHE (2004)

Note: Legal system costs are too small to be visible, but they are included in the figures shown.

Defensive medicine, which includes any unnecessary tests or procedures that would be eliminated absent the incentives created by the medical tort system, is almost four times as much as this direct cost. These direct and indirect costs of the medical tort system can be viewed as an excise tax that increases the cost of medical care. If so, then there is another hidden cost in the form of efficiency losses arising from the lost output associated with this medical tort system "tax." There is much uncertainty around these estimates. It is possible that they are as low as two dollars for every $100 in health spending, or as high as $10.

The BEA tracks the annual level of payments for medical liability claims. The United States has experienced a series of medical malpractice "crises" starting in the mid-1970s. Relative to the amount of either total NHE or expenditures only for physician services, these medical liability payments peaked in the 1970s. Currently, these payments represent a lower share of NHE or physician spending than in 1969 (figure 19.8b). This does not suggest that the medical tort system could not be improved, only that it has been relatively worse in the past. Good cross-national estimates of malpractice spending do not exist, but OECD data indicate that the United States has the third-highest rate of deaths from medical errors per 100,000 population.

19.8b **Medical liability payments as a share of total or physician spending peaked in the 1970s and have declined through 2009**

Medical malpractice payments per $100 of expenditures
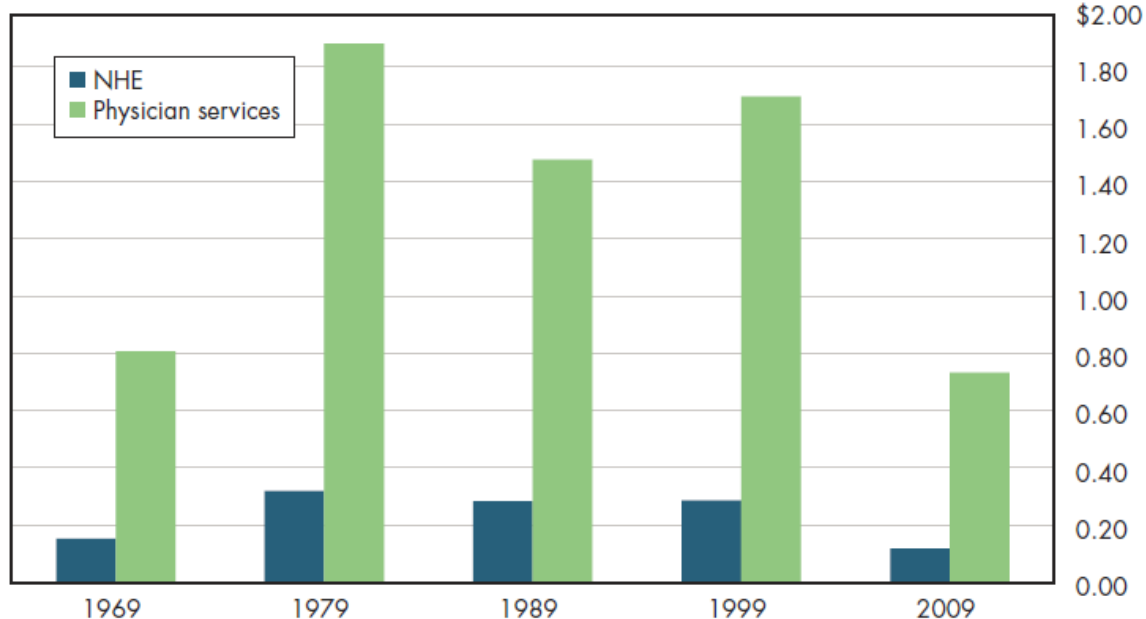
As a system for compensating victims, the medical tort system has been criticized as both inefficient and unfair. It is inefficient because fewer than 50 cents of every malpractice premium goes to paying victims. It is unfair to both patients and doctors because only a few of those injured due to medical negligence ever seek to recover damages and even fewer win awards. Conversely, many lawsuits filed involve doctors who were not negligent.

19.8.1 Downloads

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19.8.2 References

A. Conover CJ with EP Zeitler.   Health Services Regulation Working Paper No.   MTS-1. http://ushealthpolicygateway.files.wordpress.com/2009/06/mts1-medicaltortsys- tem.doc (accessed August 30, 2010).
B. Department of Commerce. Bureau of Economic Analysis.

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[39]https://hub.mili.csom.umn.edu/content/m10067/latest/19.8aIMG.ppt
[40]https://hub.mili.csom.umn.edu/content/m10067/latest/19.8aDATA.ppt
[41]https://hub.mili.csom.umn.edu/content/m10067/latest/19.8bIMG.ppt
[42]https://hub.mili.csom.umn.edu/content/m10067/latest/19.8bDATA.ppt

19.9 19.9 US Leads the World in Life Expectancy[43]

When life expectancy figures are appropriately adjusted, the United States ranks number one in the world in life expectancy at birth (figure 19.9a). Without such adjustment, the United States ranks fifteenth. The disproportionate number of U.S. deaths due to violence is the principal reason for the nation to rank so low overall. These fatalities include all gunshot-related deaths (homicides and suicides) and also deaths due to automobile accidents or other injuries. Such deaths arguably have little to do with medical system performance but instead arise from social causes, lifestyle choices, or imperfections in other public efforts to reduce such deaths, such as highway safety.

19.9a When higher-than-average U.S. rates of violent deaths are taken into account, the United States leads the world in life expectancy
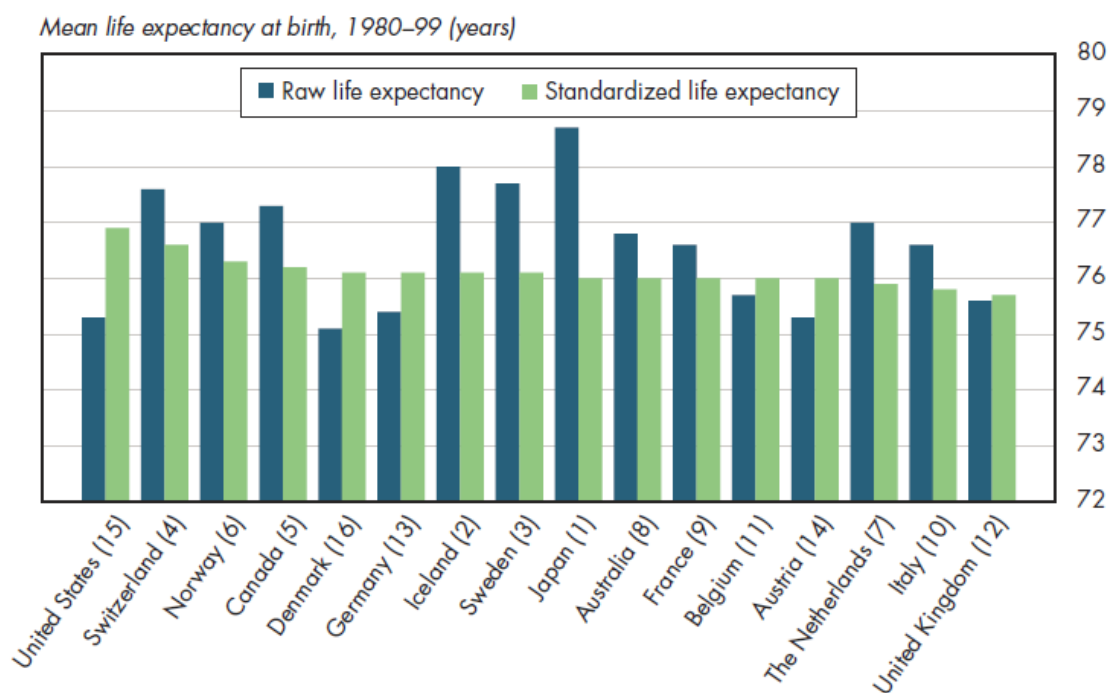
Note: Countries are ordered by standardized life expectancy derived by assigning each country the mean OECD fatal injury rate for the period shown; numbers in parentheses denote ranking on unstandardized life expectancy at birth.

In figure 19.9a, each country was assumed to have the average fatal injury rate experienced over the 20 years examined. This has the effect of increasing life expectancy in countries that have a higher-than-average fatal injury rate, such as the United States. Conversely, it has the effect of lowering life expectancy in countries that have a lower-than-average fatal injury rate, such as Switzerland.

An OECD study shows that the availability of medical care (for example, supply of doctors and nurses relative to the population) is a relatively minor contributor to life expectancy. Increasing GDP per person by 10 percent, for example, would have almost four times as much impact on male life expectancy at birth as increasing the supply of doctors and nurses by the same percentage (figure 19.9b). In addition, increasing the level of education by 10 percent would have at least two to three times the impact as would the equivalent percent increase in doctor and nurse supply.

[43]This content is available online at <https://hub.mili.csom.umn.edu/content/m10068/1.1/>.

19.9b Other determinants of life expectancy at birth are of equal or greater importance than the availability of doctors and nurses

Percent change in life expectancy at birth per 10 percent change in factor
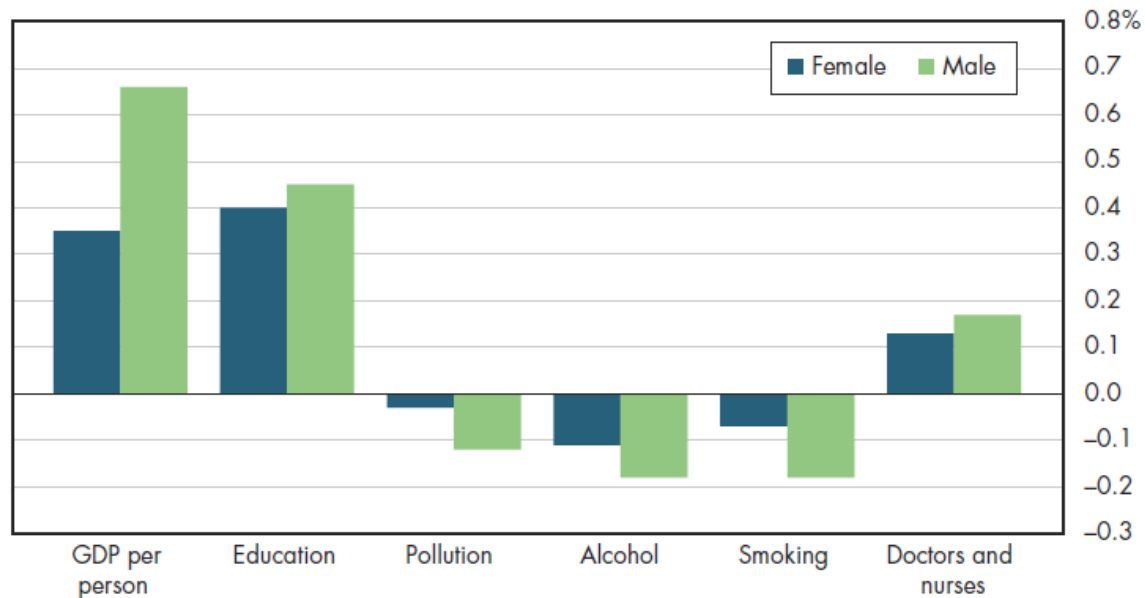
Changing behavior also can produce life expectancy gains that rival an increased supply of medical care services. A 10 percent reduction in smoking or excess use of alcohol (including any use of alcohol resulting in a fatal injury) would produce greater gains in male life expectancy than a 10 percent increase in the supply of doctors and nurses would.

None of these comparisons demonstrates which approach to increasing life expectancy is most cost-effective. They simply illustrate that differences in life expectancy across countries or states could arise even if they have medical care systems that are identical in performance.

19.9.1 Downloads

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- Figure 19.9b Editable Slide (can be formatted as desired)[47]

19.9.2 References

A. Organisation for Economic Co-operation and Development.

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[44]https://hub.mili.csom.umn.edu/content/m10068/latest/19.9aIMG.ppt
[45]https://hub.mili.csom.umn.edu/content/m10068/latest/19.9aDATA.ppt
[46]https://hub.mili.csom.umn.edu/content/m10068/latest/19.9bIMG.ppt
[47]https://hub.mili.csom.umn.edu/content/m10068/latest/19.9bDATA.ppt

19.10 19.10 US Ranks 3rd in the World in Saving Premature Infants' Lives[48]

The United States ranks poorly in terms of infant mortality rates, but this too says little about the performance of its health care system. The United States has the third-highest infant mortality rate in the OECD. This rate is somewhat overstated due to differences in statistical methods for measuring infant deaths. The United States is one of only eight countries that count extremely premature infants as "live births," even though they have extremely low odds of survival.

More important, compared with most other industrialized countries, the United States has a much higher rate of premature and/or low-birth-weight infants. Although adequate prenatal care certainly can influence such rates, many other social factors also contribute. For example, low-birth-weight infants are disproportionately born to mothers from disadvantaged socioeconomic backgrounds. Adolescent pregnancies also are more likely to result in a premature birth. Even though it has been declining, the U.S. teenage birth rate far exceeds that of other G7 nations. Maternal smoking, and drug and alcohol use during pregnancy also increase the odds of a low-birth- weight infant.

A fairer comparison, therefore, examines how well the medical system performs in keeping alive infants of a given length of gestation. For all birth categories before full term (37+ weeks), the United States ranks second or third among the nine countries for which comparable data exist (figure 19.10). Unfortunately, the United States and the UK are the only G7 nations on this list.

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[48]This content is available online at <https://hub.mili.csom.umn.edu/content/m10069/1.1/>.

19.10 The United States generally leads the world (except Sweden and Norway) in saving the lives of premature infants

Infant mortality index (U.S.=100)
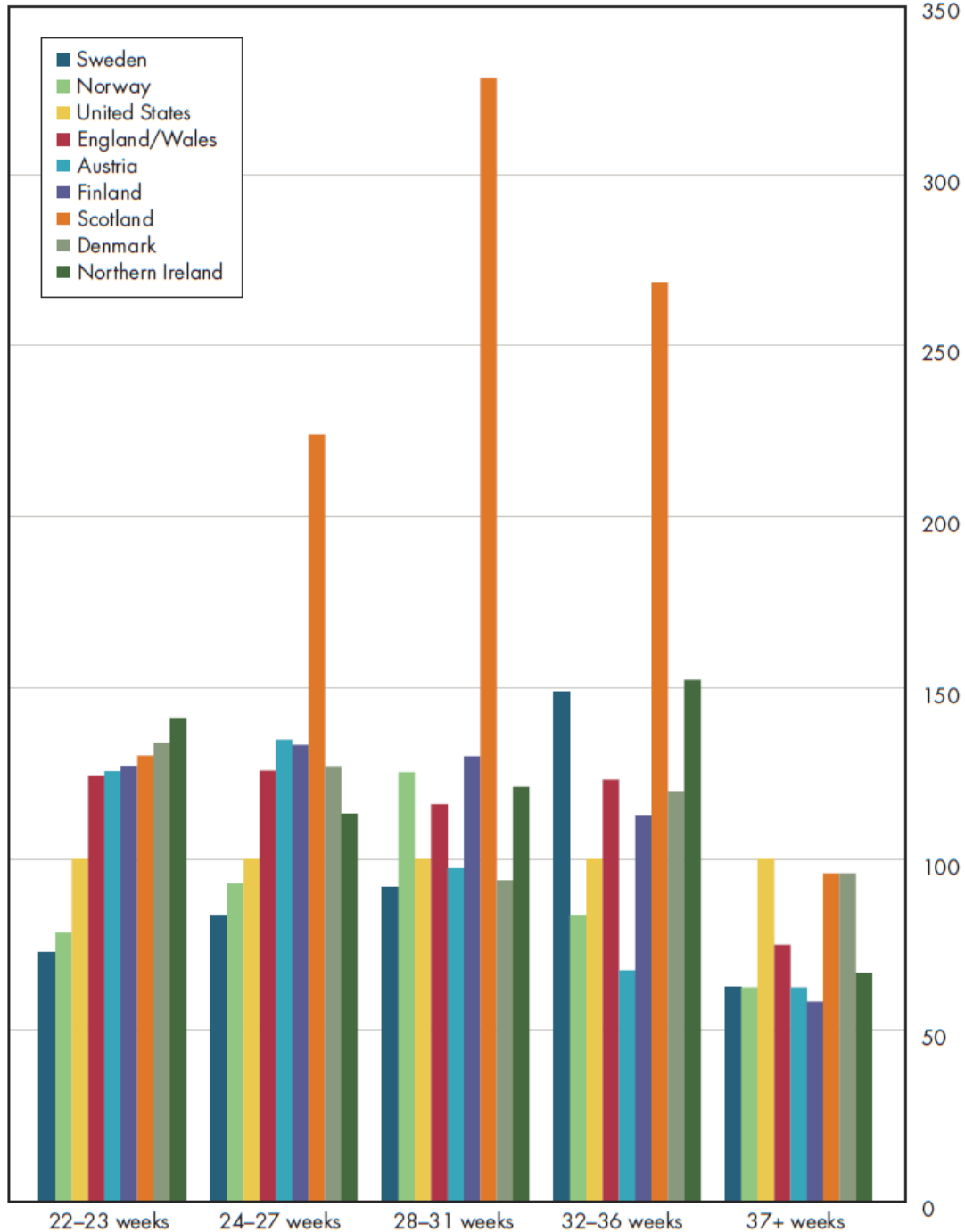
Note: Countries listed (left to right) from best to worst for infants with the shortest gestation period.

The ability to save premature infants has increased greatly over the past few decades. For white infants, for example, infant mortality steadily declined between 1983 and 2004 despite a 20 percent increase in the percentage of such infants falling into the low-birth-weight category. This reflects sizable investments in (and wide diffusion of) neonatal intensive-care units. Careful studies suggest that since 1960, the 70 percent decline in mortality for low-birth-weight infants born in the United States was almost entirely the result of improved medical care.

19.10.1 Downloads

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- Figure 19.10 Image Slide (as it appears above)[49]
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19.10.2 References

A. MacDorman MS and TJ Mathews. Behind International Rankings of Infant Mortality: How the U.S. Compares with Europe. National Center for Health Statistics Data Brief No. 23. Hyattsville MD. National Center for Health Statistics 2009.

19.11 19.11 US Cancer Patients Have Better Chances of Survival among Industrialized Nations[51]

Another area in which the U.S. medical system excels is in cancer treatment. Cancer patients live longer in the United States than in any other country in the world. For example, the United States leads the world in cancer survival rates for the leading cancers among women (figure 19.11a). In general, the survival differences between the United States and other countries are even greater for major cancers affecting males, including colon, lung, and prostate cancer.
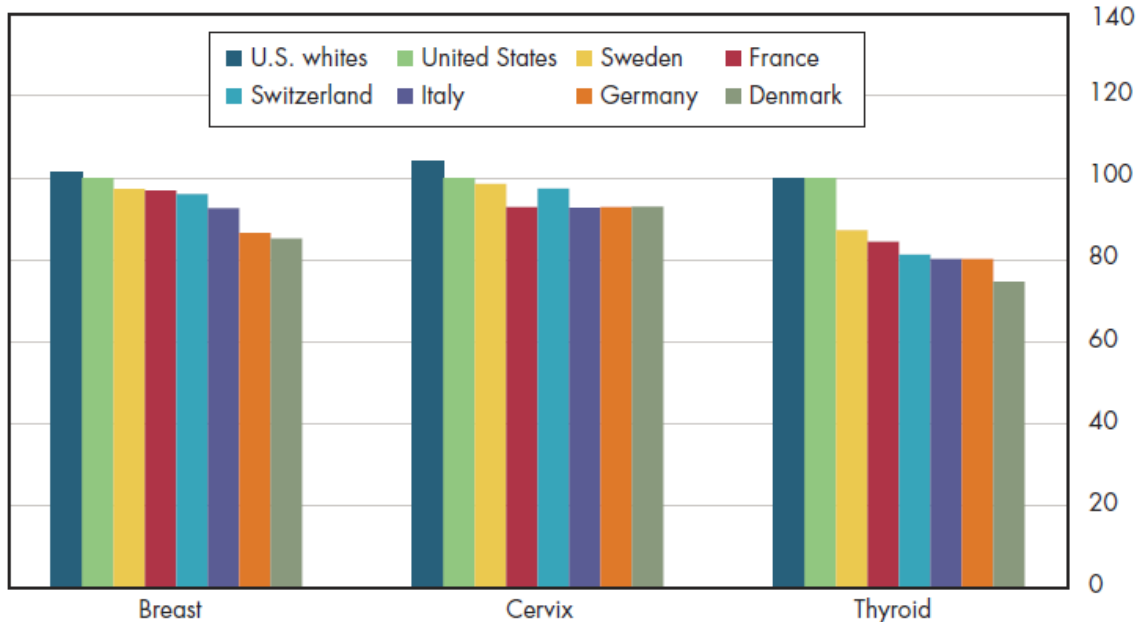
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[49]https://hub.mili.csom.umn.edu/content/m10069/latest/19.10IMG.ppt
[50]https://hub.mili.csom.umn.edu/content/m10069/latest/19.10DATA.ppt
[51]This content is available online at <https://hub.mili.csom.umn.edu/content/m10070/1.1/>.

19.11a The United States leads the world in female cancer survival rates for the leading causes of cancer deaths

Five-year female cancer survival rate indexes (U.S.=100)

Note: Countries ranked from best to worst for breast cancer.

For some of these cancers, such as female breast and cervical cancers, there is a large difference in survival rates for whites compared with blacks. If rates were standardized to account for the higher percentage of blacks in the United States relative to these other nations, the cancer survival differences would be even larger than shown.

Some of the apparently superior performance in the United States can be attributed to higher cancer screening rates (figure 19.11b). To the extent that cancers are detected earlier in their course through routine screening, this will increase the percentage of patients in whom cancer is detected who are able to survive five years.

19.11b Despite more uninsured people in the United States, cancer screening rates for adults 50 and older are much higher in the United States than in Europe

European cancer screening rates as a percentage of U.S. rates
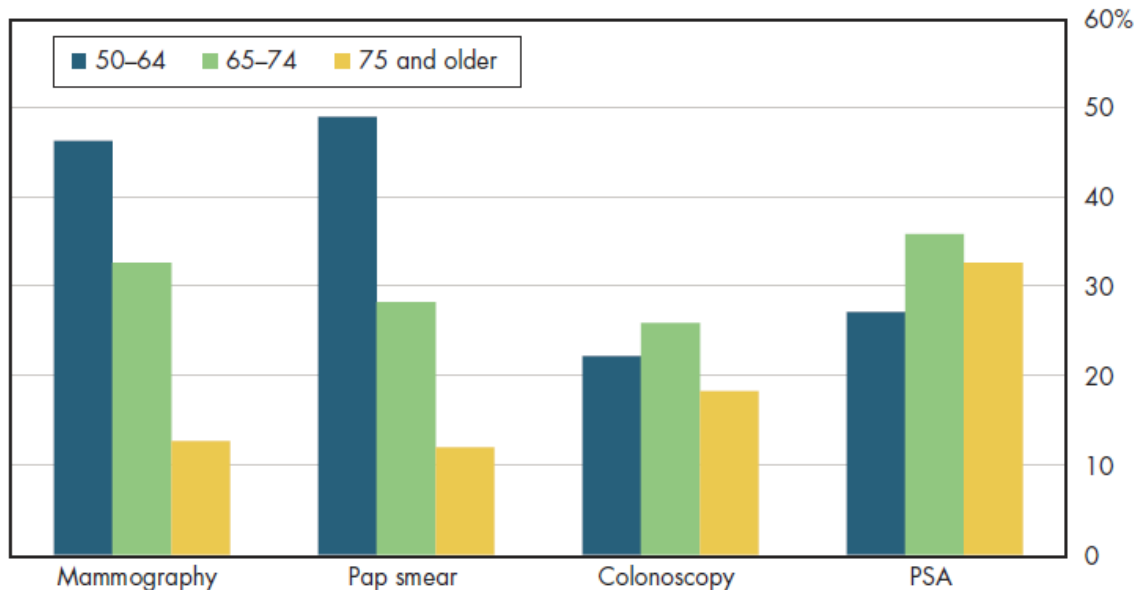
Note: PSA = prostate-specific antigen test to screen for prostate cancer.

The most important factors in cancer survival are early diagnosis, time to treatment, and access to the most effective drugs. Some uninsured cancer patients in the United States encounter problems with timely treatment and access. However, apparently a larger proportion of cancer patients in other G7 countries face similar barriers to access. For example, waiting times for specialty care are especially problematic in Canada and in the UK. Almost half the improvement in survival rates in the United States in the 1990s can be attributed to the introduction of new oncology drugs. Americans typically get more rapid access to new pharmaceuticals than do citizens in other countries. Consequently, any benefits from new oncology drugs would show up faster in U.S. cancer survival statistics than in countries that have longer lag-times for the introduction of the latest drugs.

19.11.1 Downloads

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- Figure 19.11b Editable Slide (can be formatted as desired)[55]

19.11.2 References

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[52]https://hub.mili.csom.umn.edu/content/m10070/latest/19.11aIMG.ppt
[53]https://hub.mili.csom.umn.edu/content/m10070/latest/19.11aDATA.ppt
[54]https://hub.mili.csom.umn.edu/content/m10070/latest/19.11bIMG.ppt
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19.12 19.12 US Has More Avoidable Deaths Amenable to Health Care among Industrialized Nations[56]

The United States ranks nineteenth among industrialized countries in the rate of deaths amenable to health care (figure 19.12). "Amenable deaths" refer to deaths from selected causes that should not occur in the presence of timely and effective health care. Such deaths constitute approximately 25 percent of deaths for males who are younger than age 75 and approximately 30 percent of deaths in that age group for females. An important advantage of this measure is that it excludes deaths that do not necessarily reflect problems of access or quality of the medical care system. The death rates used to calculate the estimates in figure 19.12 were standardized by gender and five-year age categories. Thus, observed differences cannot be attributed to basic demographic differences in the U.S. population compared with elsewhere.

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[56]This content is available online at <https://hub.mili.csom.umn.edu/content/m10071/1.1/>.

19.12 Compared with many other OECD countries, the United States has a higher death rate from conditions amenable to health care

Index (U.S.=100) of standardized death rate per 100,000 (ages 0–74), 2002–03
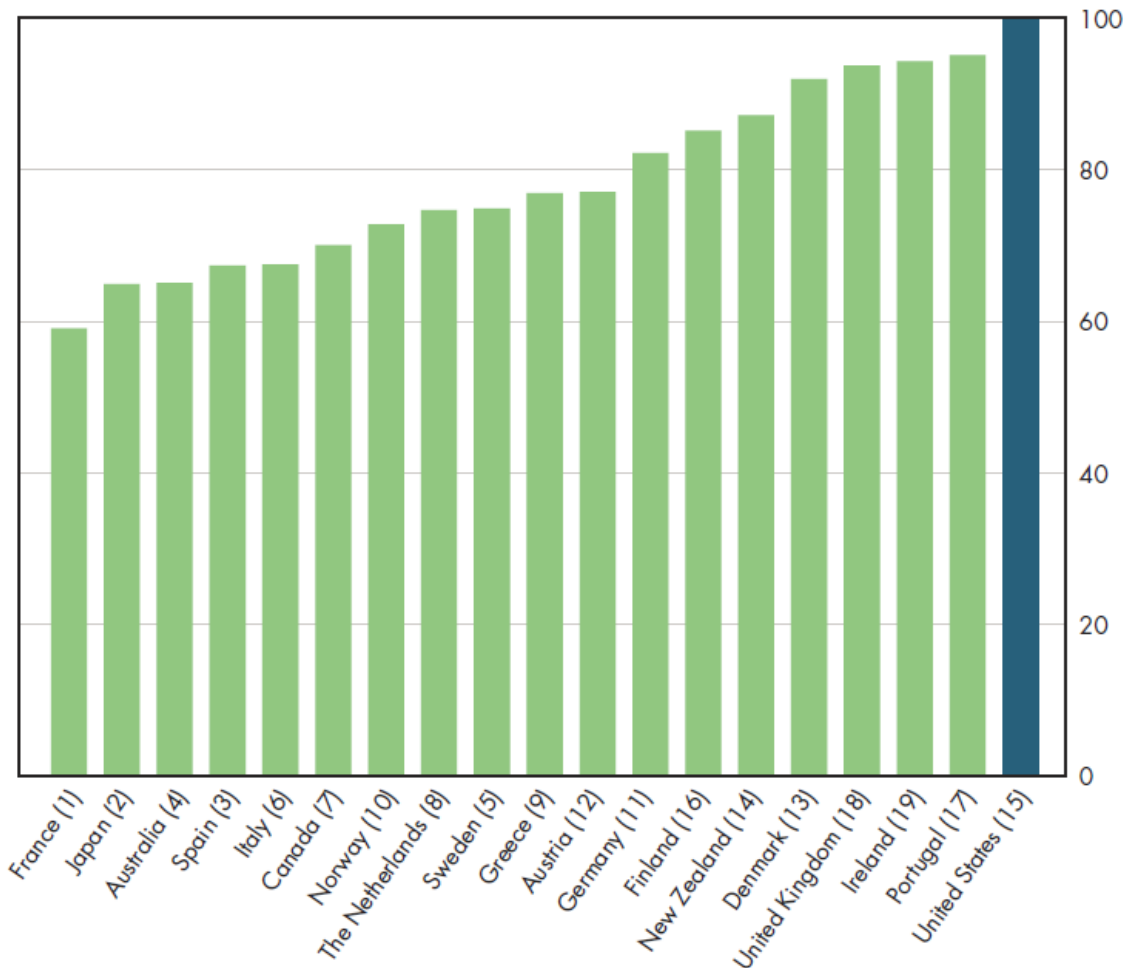
Countries ordered from best to worst in 2002–03
(numbers in parentheses denote ranking in 1997–98)

However, the numbers are *not* standardized based on race. In light of widespread racial and ethnic disparities in U.S. health outcomes—little of which reflect poor health system performance—this limitation might disproportionately cast the United States in a worse light. Moreover, the authors of the study that produced these data have cautioned, "The rate of amenable mortality is a valuable indicator of health care system performance, although it is important to note that the underlying concept should not be mistaken as definitive evidence of differences in the effectiveness of health care but rather as an indicator of potential weaknesses in health care that can then be investigated in more depth."

With these caveats, the available data show that some OECD countries have rates much lower than in the United States. For example, France and Japan have rates approximately 40 percent less than in the United States. Even the UK, which lagged behind in some of the comparisons of cancer survival rates and infant mortality by birth-weight, outperforms the United States on this metric. Second, amenable mortality rates declined only 4 percent in the United States between 1997-1998 and 2002-2003, compared with an average

decline of 17 percent among all countries studied. This fact suggests that the United States is falling behind
rather than catching up to its competitors on this measure.

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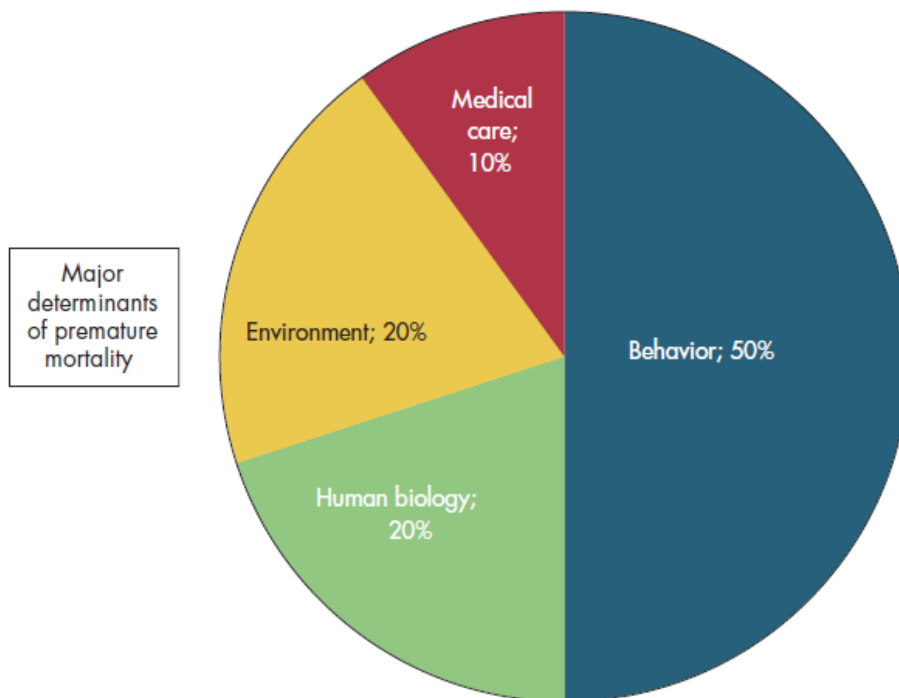
19.12.2 References

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   Affairs 2008; 27(1):58-71.

19.13 19.13 Most "Avoidable" Deaths Are Related to Lifestyle or Behavior[59]

Approximately half of premature mortality is attributable to behavior or lifestyle (figure 19.13a). These
include diet, physical activity, smoking, stress, alcohol or illicit drug abuse, injury or violence, and similar
factors.

19.13a Approximately half of premature mortality relates to behavior/lifestyle; only 10 percent relates to medical care

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[57]https://hub.mili.csom.umn.edu/content/m10071/latest/19.12IMG.ppt
[58]https://hub.mili.csom.umn.edu/content/m10071/latest/19.12DATA.ppt
[59]This content is available online at <https://hub.mili.csom.umn.edu/content/m10072/1.1/>.

Human biology accounts for 20 percent of premature deaths. It refers to the individual's genetic makeup (which includes factors with which he or she is born, or mutations acquired over a lifetime) and family history (which can contribute both to risk for disease and/or the risk of dying from it when diagnosed).

Environmental factors account for another 20 percent of premature deaths. Researchers distinguish between the social environment (interactions with family, friends, coworkers, and others in the community) and the physical environment (things that can be seen, touched, heard, smelled, and tasted, and less tangible risks such as radiation or ozone). Social institutions, such as law enforcement, the workplace, places of worship, and schools, also are part of this environment. Housing, public transportation, and the presence or absence of violence in the community are other important components.

Access to medical care itself accounts for only 10 percent of premature mortality. The data shown are only approximate. First, they are estimates made 35 years ago. Second, the experts that developed them examined only the 10 leading causes of death in the United States, not all causes of death. Third, clearly important interactions exist between the categories. For example, behaviors can have a reciprocal relationship to biology, meaning that each can react to the other. For example, smoking (behavior) increases the odds of a heart attack (biology). A heart attack then can motivate an individual to stop smoking (behavior).

Even a cursory examination of the underlying causes of death in the United States underscores the importance of behavior and lifestyle (figure 19.13b). Smoking, poor diet and inactivity, and alcohol consumption alone accounted for approximately 40 percent (almost one million) of total deaths in the year 2008. The health care system is most directly implicated in deaths due to prescription drug non-compliance (125,000), non-preventable adverse patient events (116,000), infectious diseases excluding HIV (65,000)—some of which are avoidable—and preventable medical errors, both non-negligent (37,000) and negligent (34,000); together these account for 15 percent of all deaths.

19.13b Changes in behavior/lifestyle would have a sizable impact on mortality rates in the United States

Total U.S. deaths (2008)
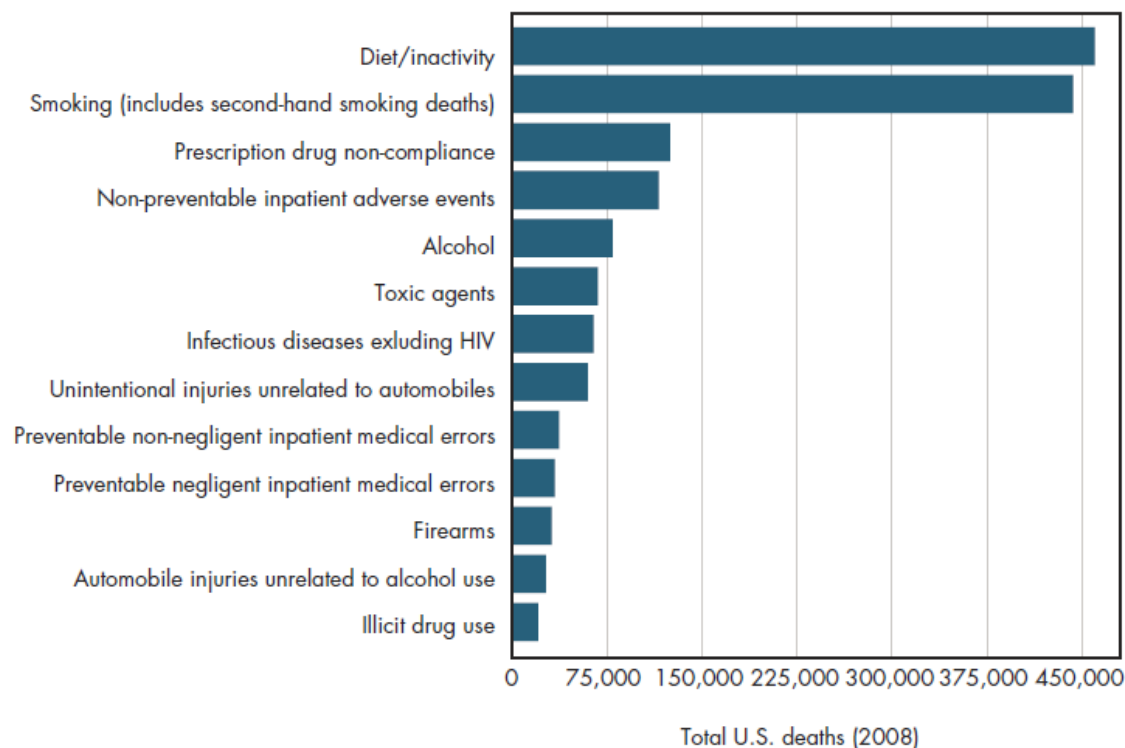
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- Figure 19.13b Image Slide (as it appears above)[62]
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C. Department of Health and Human Services. Centers for Disease Control and Prevention.
D. Department of Health and Human Services. Office of Inspector General. Medication Regimens: Causes of Non-Compliance. June 1990.
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19.14 19.14 US Has World's Highest Obesity Rate but a Low Smoking Rate among Industrialized Nations[64]

The United States by far has the world's highest rate of obesity (figure 19.14a). More than 30 percent of all women in the United States are obese (based on measurements, not self-reports). Within the G7, the two countries ranking just behind the United States (the UK and Canada) have male and female obesity rates that are only approximately 25 percent. Japan's measured obesity rate for men and women is less than 5 percent.

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[60]https://hub.mili.csom.umn.edu/content/m10072/latest/19.13aIMG.ppt
[61]https://hub.mili.csom.umn.edu/content/m10072/latest/19.13aDATA.ppt
[62]https://hub.mili.csom.umn.edu/content/m10072/latest/19.13bIMG.ppt
[63]https://hub.mili.csom.umn.edu/content/m10072/latest/19.13bDATA.ppt
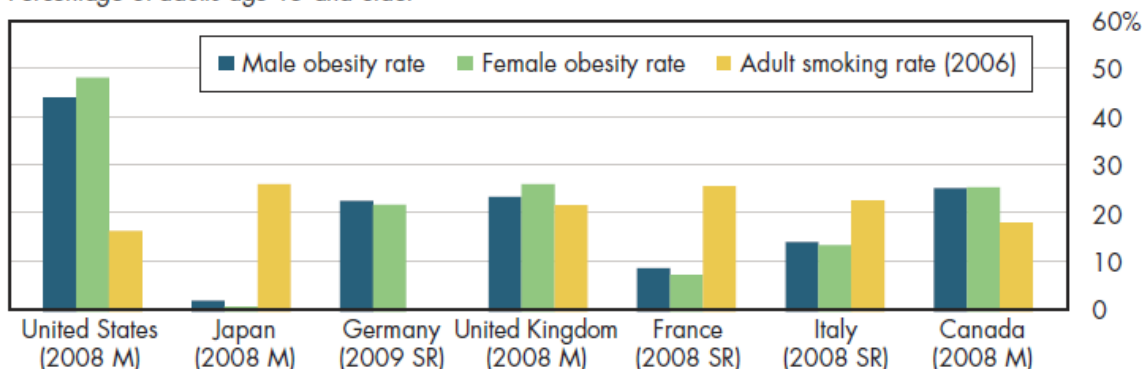[64]This content is available online at <https://hub.mili.csom.umn.edu/content/m10073/1.1/>.

19.14a The United States has far higher obesity rates but much lower smoking rates than do its major G7 competitors

Percentage of adults age 15 and older

■ Male obesity rate   ■ Female obesity rate   ■ Adult smoking rate (2006)

United States (2008 M)   Japan (2008 M)   Germany (2009 SR)   United Kingdom (2008 M)   France (2008 SR)   Italy (2008 SR)   Canada (2008 M)

Note: M = measured obesity rate. SR = self-reported obesity rate.

Unfortunately, measured obesity rates for all G7 countries are not available. The difference can be considerable. In Canada, for example, the measured obesity rate is 50 to 60 percent higher than the self-reported rates for men and women. The rates shown for Germany, France, and Italy might therefore be much higher than illustrated.

Smoking is the single largest cause of death in the United States, even though the nation has one of the lowest smoking rates among industrialized countries. There are many ways to measure smoking, but this metric counts the percentage of adults age 15 and older who self-report that they are daily smokers. Using this metric, adult smoking rates in Japan and France are more than 50 percent higher than current rates in the United States. In fact, none of the G7 countries for which this information is available has a lower smoking rate than in the United States.

Smoking and obesity both contribute considerably to premature mortality in the United States. Obesity-related and smoking-attributable medical costs each amount to approximately 6 percent of national health spending.

However, differences in obesity and smoking rates within the United States itself rival cross-national differences in such rates among the G7 countries. States exhibit less than a two-fold difference in obesity rates (figure 19.14b) but a three-fold difference in smoking rates (figure 19.14c). This highlights the diversity of the United States in terms of these particular unhealthy behaviors. It also highlights the limitations of national averages when making cross-national comparisons.

19.14b States that have the highest percentage of adults age 15 and older who were obese in 2009 are concentrated in the South

Obese
- 18.9–24.0
- 24.5–25.8
- 25.9–27.7
- 28.0–30.1
- 30.2–35.3
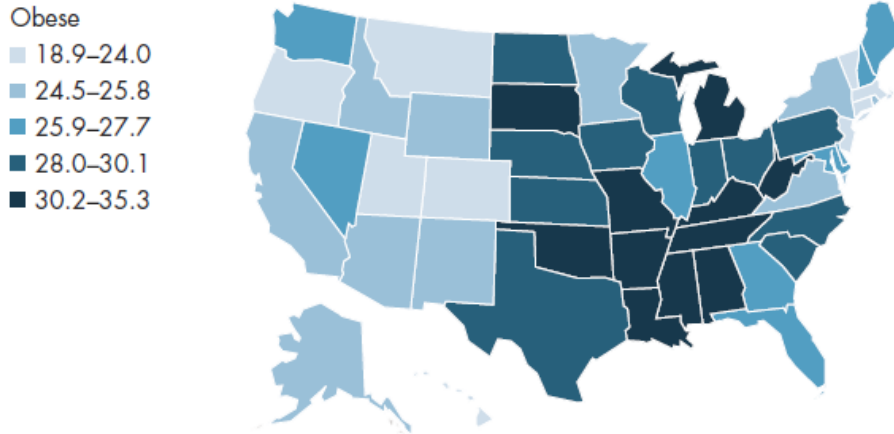
19.14c States that have the highest percentage of adults age 15 and older who were daily smokers in 2007 also are concentrated in the South

Smokers
- 6.4–15.7
- 15.8–17.2
- 17.4–18.5
- 18.6–20.6
- 21.4–25.6
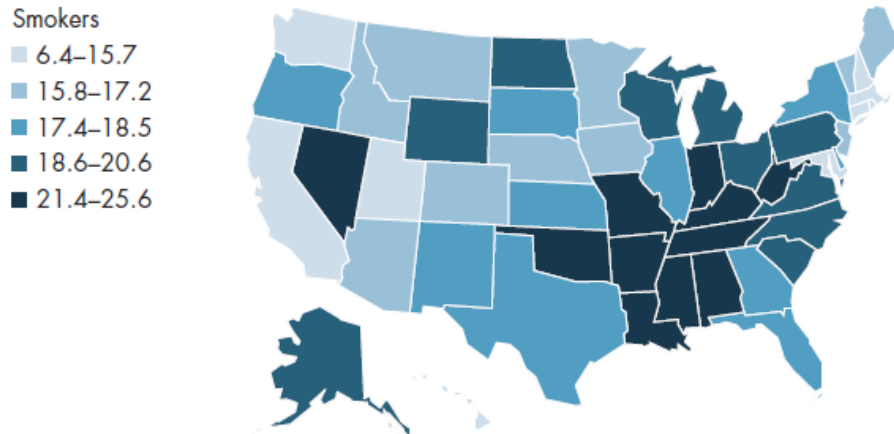
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- Figure 19.14b Editable Slide (can be formatted as desired)[68]
- Figure 19.14c Image Slide (as it appears above)[69]
- Figure 19.14c Editable Slide (can be formatted as desired)[70]

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[65]https://hub.mili.csom.umn.edu/content/m10073/latest/19.14aIMG.ppt
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[67]https://hub.mili.csom.umn.edu/content/m10073/latest/19.14bIMG.ppt
[68]https://hub.mili.csom.umn.edu/content/m10073/latest/19.14bDATA.ppt
[69]https://hub.mili.csom.umn.edu/content/m10073/latest/19.14cIMG.ppt
[70]https://hub.mili.csom.umn.edu/content/m10073/latest/19.14cDATA.ppt

19.14.2 References

A. Department of Health and Human Services. Centers for Disease Control and Prevention.
B. Organisation for Economic Co-operation and Development.

19.15 19.15 The Challenge of Comparing US States[71]

The variation in health outcomes across states has been an important theme in this section. Some side-by-side comparisons of selected indicators that have been used to rank the performance of states are illustrated in figure 19.15a. Here, the word "performance" recognizes that differences in these indicators might not reflect the quality of medical care delivered in the states. Some indicators such as traffic fatalities better reflect state performance on other dimensions (for example, highway safety) than on health care.

19.15a There are large differences in health system performance across states
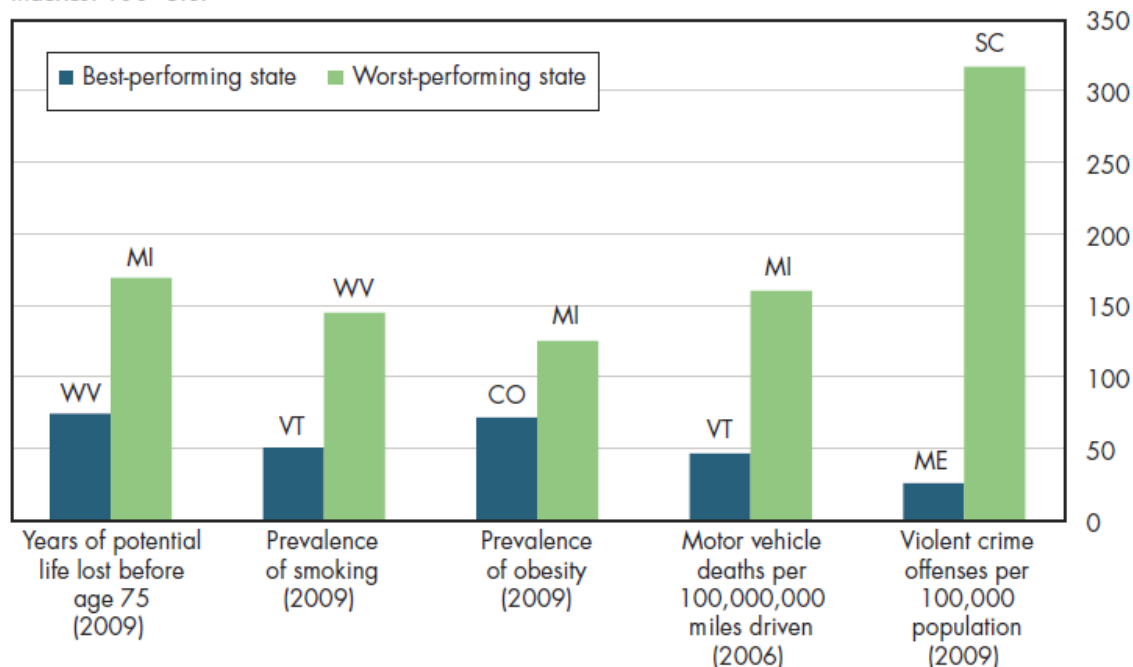
Note: CO = Colorado; ME = Maine; MI = Michigan; SC = South Carolina; WV = West Virginia; VT = Vermont.

To facilitate comparisons, each indicator has been indexed to the U.S. average for that indicator. This makes it easier to see that the worst performing states on a) years of potential life lost before age 75, b) smoking prevalence, and c) the rate of motor vehicle deaths have rates that are approximately 50 percent higher than the national average. Two conclusions can be drawn from these comparisons.

First, the relative sizes of the differences between states varies widely by indicator. There is only a 75 percent difference between the state that has the highest obesity rate compared with the state that has the lowest. In contrast, there is a 12-fold difference between the states that have the highest and lowest rates of violent crime offenses per 100,000 residents (which include homicides, rapes, robberies, and aggravated assaults).

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[71]This content is available online at <https://hub.mili.csom.umn.edu/content/m10074/1.2/>.

Second, there is not always much symmetry in how the highest- and lowest- performing states compare with the national average. The state that has the highest obesity rate exceeds the national average by only 25 percent while the best-performing state has an obesity rate 28 percent less than the average. Similarly, the highest state-level smoking rate is 45 percent above the U.S. average, and the state with the lowest rate is 49 percent below that average. The other indicators display more asymmetry. The state with the most years of potential life lost (YPLL) is 69 percent above the national average, but the state with the lowest YPLL is only 25 percent below that average. Rates of violent crimes exhibit the greatest asymmetry.

State rankings (figure 19.15b) therefore depend heavily on what factors are included and the weights given to each factor.

19.15b The United Health Foundation 2009 rankings of overall health reveal that most of the states that have the lowest overall health ranking are located in the South
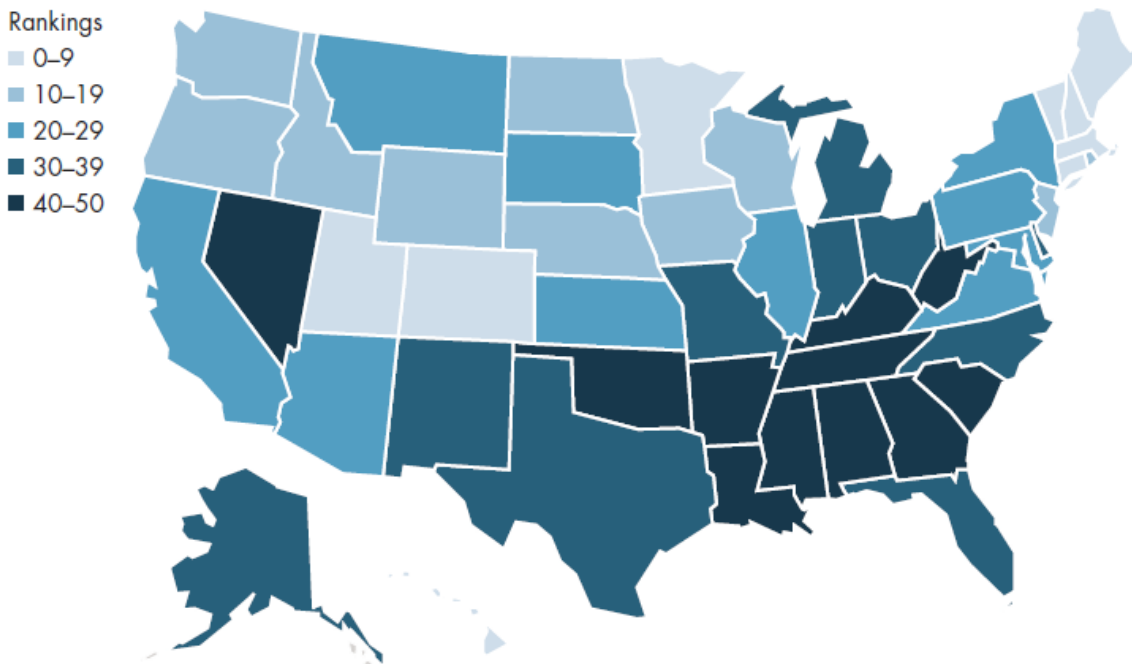
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[72]https://hub.mili.csom.umn.edu/content/m10074/latest/19.15aIMG.ppt
[73]https://hub.mili.csom.umn.edu/content/m10074/latest/19.15aDATA.ppt
[74]https://hub.mili.csom.umn.edu/content/m10074/latest/19.15bIMG.ppt
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Chapter 20

Chapter 20: Are Health Spending Trends Sustainable?

## 20.1 20.1 Projected Growth in Health-Related Benefits[1]

If current trends continue, the ratio of health-related fringe benefits to worker wages will more than quadruple. Admittedly, forecasting over a 75-year period is challenging. However, estimates of what wages will be through 2083 use the identical assumptions about growth in real (inflation-adjusted) wages per worker that are embedded in the most recent projections from Social Security trustees. Assuming that changes in these shares mirror what has happened during the past 10 years, the share of total compensation for health benefits and non-health fringe benefits can be projected,.

   Using these simple assumptions, the ratio of health-related supplements per dollar of wages would grow over 75 years from 6.4 cents in 2008 to 26.3 cents (figure 20.1). Even after taking into account the growth in non-health fringe benefits as a share of compensation—projected in a parallel fashion—the amount of real cash wages will grow considerably, relative to 2008. That is, in terms of constant purchasing power, workers in 75 years will have nearly eight times as much non-health compensation as they received in 2008.

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[1]This content is available online at <https://hub.mili.csom.umn.edu/content/m10049/1.2/>.

20.1 At historical growth rates, the amount of health-related benefits per dollar of wages and salaries would quadruple over the next 75 years

Health-related benefits per dollar of wages and salaries
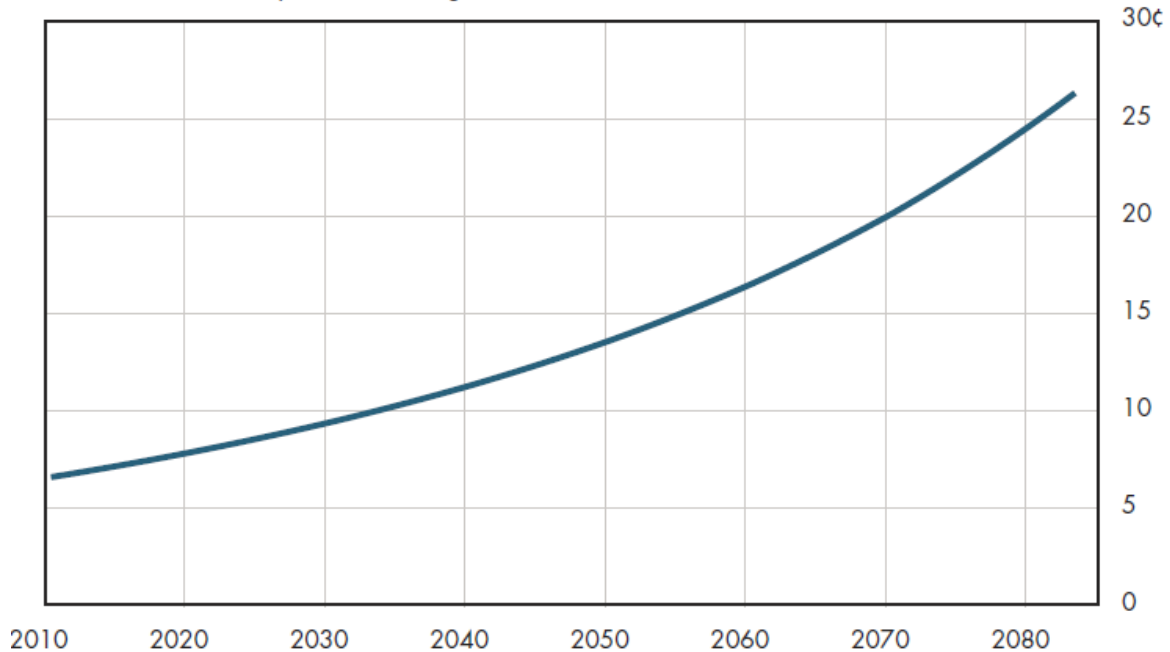
Succinctly, even though employers will have to devote a growing share of compensation to health care, these costs currently are not growing so rapidly that they will entirely displace the parallel (though slower) growth in real wages. Such a time might come, but not in the foreseeable future.

20.1.1 Downloads

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20.1.2 References

A. Department of Commerce. Bureau of Economic Analysis.

20.2 20.2 Technology Has Been a Key Driver of Health Spending Growth[4]

Technology and other factors appear to account for approximately half or more of the growth in per capita health spending over the past 60 or more years. As figure 20.2 illustrates, the exact amount depends on the period examined and other methodological assumptions.

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[2]https://hub.mili.csom.umn.edu/content/m10049/latest/20.1IMG.ppt
[3]https://hub.mili.csom.umn.edu/content/m10049/latest/20.1DATA.ppt
[4]This content is available online at <https://hub.mili.csom.umn.edu/content/m10050/1.2/>.

20.2 The role of technology for health spending growth per person is sizable regardless of the time and assumptions used

■ Technology/all other ■ Defensive medicine ■ Avoidable administrative expense
■ Relative medical price inflation ■ Income growth ■ Insurance ■ Aging

Components of health expenditure growth (percentage)
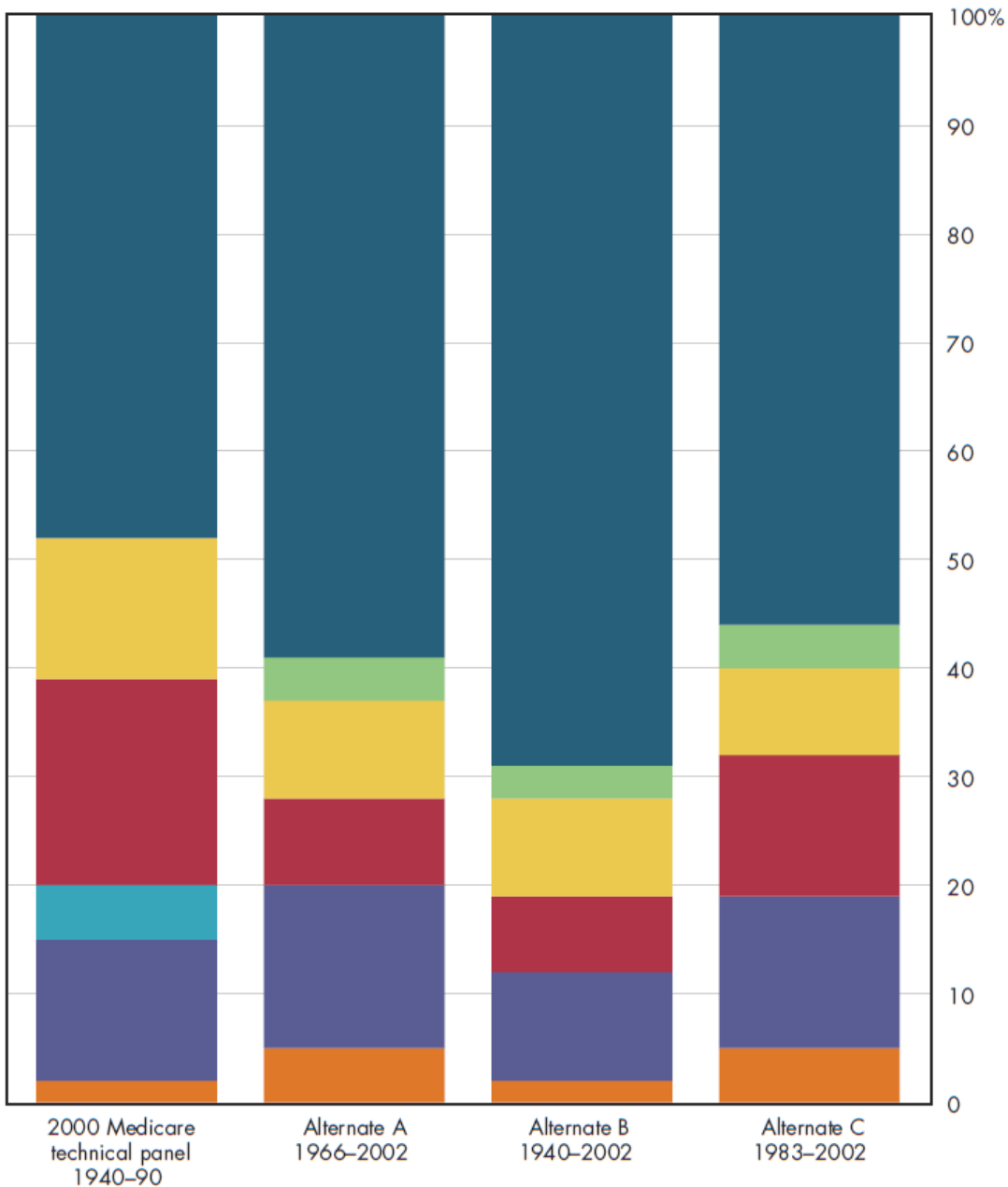
Note: Income growth not accounted for in alternate assumptions A, B, and C because GDP growth is accounted for separately in the projection model.

The exact contribution of technology is unknown (recall figure 17.3). When analysts have accounted for all the other major factors that contributed to the rise in inflation-adjusted health spending per person (for example, medical price inflation), most of the "residual" that cannot be explained is attributed to technology. Some of it is an income effect, a willingness to purchase medical services (for example, Lasik surgery) if a person has a higher income, but a person who has a lower income was not willing to purchase it. It is difficult to separate out accurately the effect of income from technology. Some would also argue that calculations such as these underestimate the role of insurance in encouraging the development of technology.

However it is defined, this "residual" is what government forecasters use to determine how fast health care expenditures will increase in the future. They can use demographic models to calculate how quickly the population is increasing and how the age-gender mix of the population is changing over time. Relative spending changes over the life cycle, depending on gender (refer to figure 12.5). Thus, if everything were static, it would be a straightforward mathematical exercise to determine how much total spending will rise because of such demographic changes.

However, the big unknown is how much per-person spending for everyone is likely to rise beyond growth in the general economy. To answer this question, fore- casters have no choice but to look to the past. They cannot avoid making assumptions about the future. The 2000 Medicare Technical Panel estimated that per capita annual growth in health care spending would be 2.2 percent a year and that long-run real per capita GDP growth would be 1.2 percent. This implies that health spending growth would exceed GDP growth by one percentage point a year. Thus, they recommended using "GDP + 1" (that is, 1.2 percent plus 1 percent) as the basis for projecting health spending over the next 75 years. The Medicare Trustees' reports from the year 2000 forward all have used this assumption in deriving long-term projections (i.e., years 25 through 75 of the projection period).

20.2.1 Downloads

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- Figure 20.2 Image Slide (as it appears above)[5]
- Figure 20.2 Editable Slide (can be formatted as desired)[6]

20.2.2 References

A. Brown JD and RM Monaco. Possible Alternatives to the Medicare Trustees' Long-Term Projections of Health Spending. US Department of Treasury. Office of Economic Policy. 2004.

20.3 20.3 How Much Faster per Capita Health Spending Has Increased Relative to GDP Growth[7]

"Excess cost growth" is the name for the residual just described. It is the difference between the U.S. per capita growth rate in age- and gender-adjusted health care costs minus the per capita growth in GDP (both rates are calculated from inflation-adjusted estimates of health spending and GDP). The level of excess cost growth has varied over time. Not surprisingly, this variation has been largest when short (five-year) time intervals are used (figure 20.3a). Over longer periods, there is less variation (but part of the reason is because the observed periods overlap).
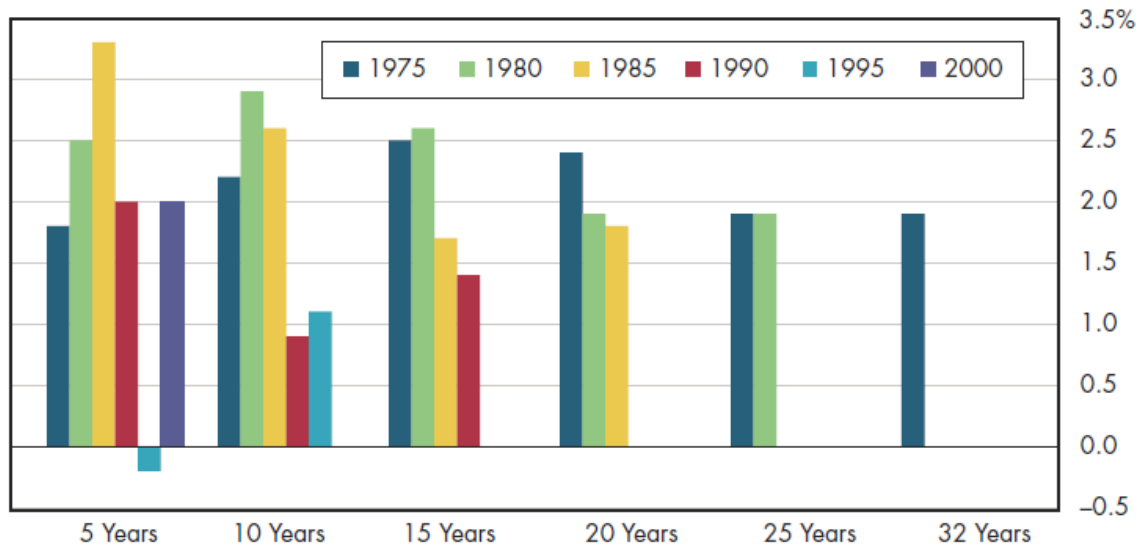
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[5]https://hub.mili.csom.umn.edu/content/m10050/latest/20.2IMG.ppt
[6]https://hub.mili.csom.umn.edu/content/m10050/latest/20.2DATA.ppt
[7]This content is available online at <https://hub.mili.csom.umn.edu/content/m10051/1.1/>.

20.3a Measured over long periods of time, annualized growth in health costs in excess of growth in GDP appears to be declining

Annual excess cost growth in per capita health spending, by starting year


Note: Per capita health spending is adjusted for changes in age and gender. Also, the ending year after 2000 is 2007, not 2005. Thus, five-year excess growth starting in year 2000 is for 2000–2007; 10-year excess growth starting in year 1995 is for 1995–2007, etc.

Excess cost growth from 1940-1990 was 2.3 percent a year. The data from the longest periods illustrated in figure 20.3a (25 and 32 years) suggest that excess cost growth might have declined to less than 2 percent. However, certainty is impossible to achieve. During this period, many policy changes in Medicare (introduction of a prospective payment system for hospitals in 1983, establishment of the Medicare physician fee schedule in 1992, substantial Medicare cost-containment measures in 1997) might have had the effect of temporarily slowing growth in spending, thereby masking the underlying trend having to do with technology that might continue in the future.

Forecasts of the year in which the Medicare Trust Fund is exhausted have varied substantially over 20 years (figure 20.3b). This is not to suggest that government forecasters are incompetent. First, by their nature, official projections of Medicare spending by Medicare Trustees or of Medicare, Medicaid, and total health spending by the CBO reflect only current policy. Policy can and did change in response to these forecasts. Remember this when using hypothetical forecasts in the following pages to explore whether current trends in health spending are sustainable in the future. Uncertainty is an unavoidable feature of long-term forecasts.

20.3b Projections of Medicare Trust Fund insolvency have changed considerably over the years

Projected year of Medicare hospital insurance trust fund insolvency

Year of Medicare Trustees' report
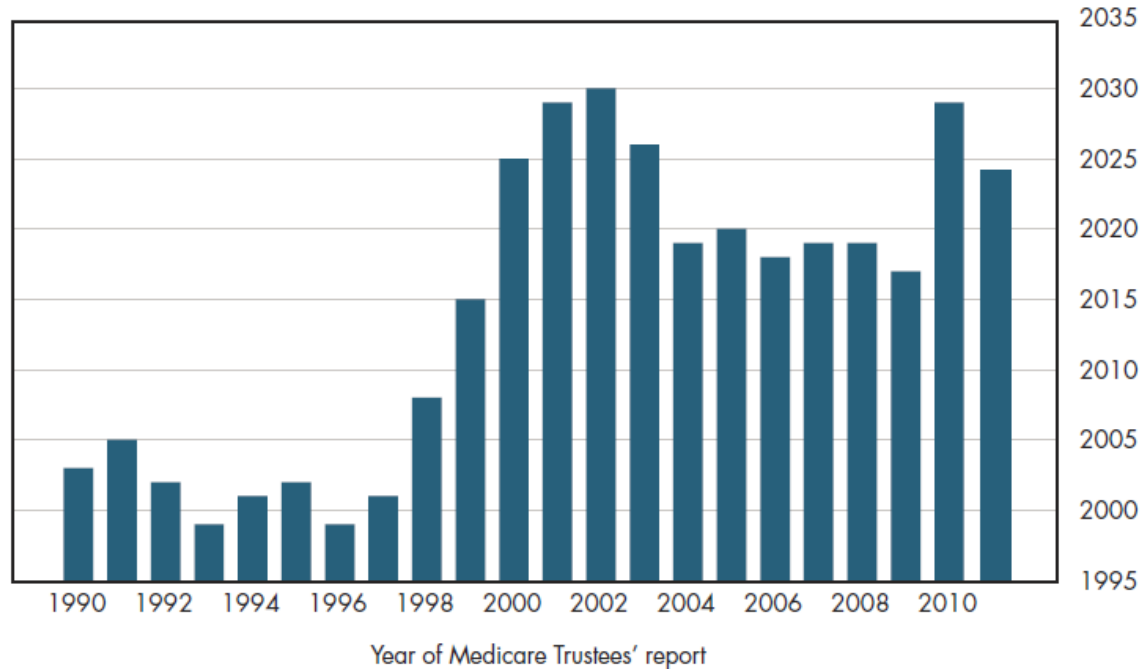
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- Figure 20.3b Editable Slide (can be formatted as desired)[11]

20.3.2 References

A. Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, The. 2010 Annual Report. US Government Printing Office. August 5, 2010.
B. Department of Health and Human Services. Centers for Medicare and Medicaid Services.

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[8]https://hub.mili.csom.umn.edu/content/m10051/latest/20.3aIMG.ppt
[9]https://hub.mili.csom.umn.edu/content/m10051/latest/20.3aDATA.ppt
[10]https://hub.mili.csom.umn.edu/content/m10051/latest/20.3bIMG.ppt
[11]https://hub.mili.csom.umn.edu/content/m10051/latest/20.3bDATA.ppt

20.4 20.4 Projected Real GDP per Capita Will Decline within 30 Years Due to Growth in Health Spending[12]

After deducting amounts for health care, the inflation-adjusted amount of personal consumption spending per American more than tripled in the 80 years since 1929 (figure 20.4a). Despite enormous growth since 1929 in health spending and the size of government—both of which reduced the amount that otherwise would have been available for personal consumption—what Americans had left for everything else still was able to grow. Admittedly, what was left would have been twice as large in a world without any spending on health care or government. No one aspires to live in such a hypothetical world. The purpose of figure 20.4a is to illustrate that the growth in health care (and government) has not been so rapid that it reduced the American standard of living from generation to generation.

20.4a Despite increasing health spending and taxes, non-health personal spending per capita more than tripled from 1929 to 2009

Inflation-adjusted per capita expenditures (chained 2005 dollars)
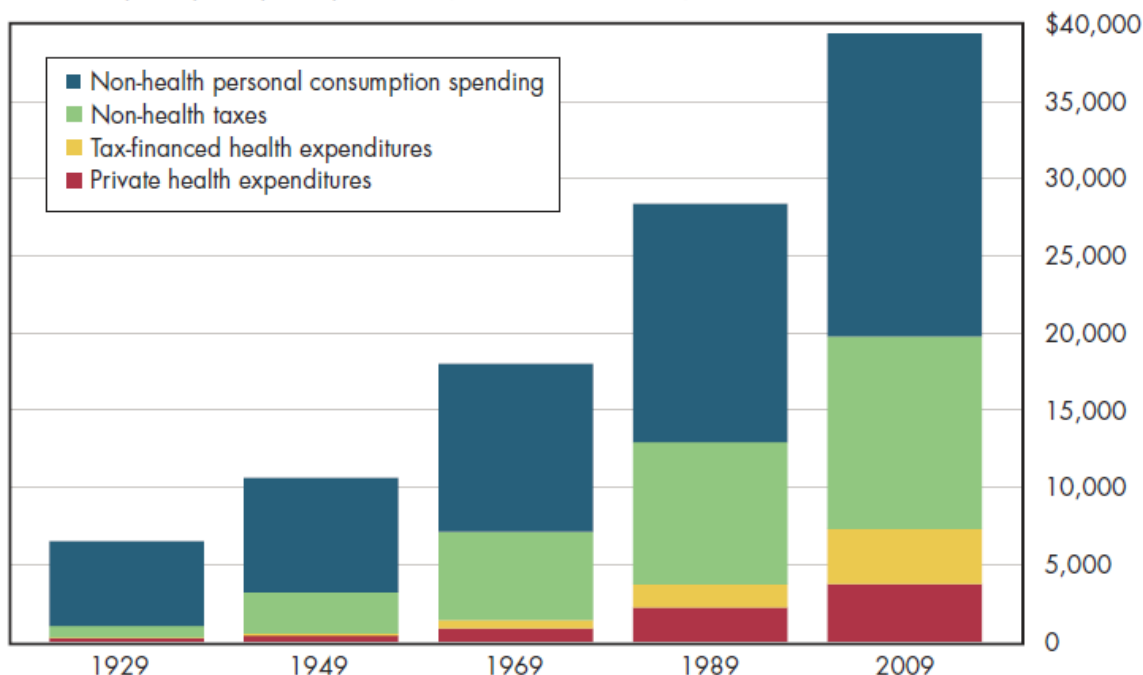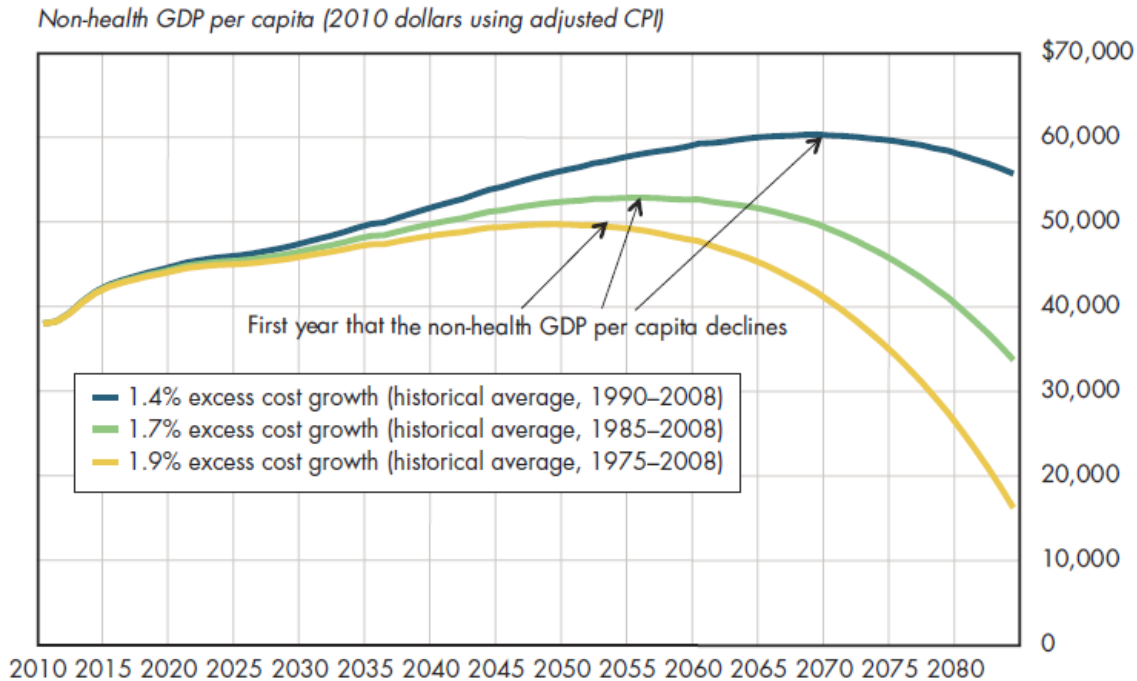

However, the United States cannot afford a continuation of historical rates of excess cost growth unless Americans are comfortable with a decline in non-health GDP per capita within the next 75 years. How quickly that occurs will depend on which historical excess cost growth number is used.

Using actual experience from relatively recently (1990-2008), annual excess cost growth was 1.4 percent. Continuing this into the future would produce a downturn in inflation-adjusted non-health spending per capita in the year 2070 (figure 20.4b). However, extrapolating the experience of 1975-2008 (1.9 percent excess cost growth) would result in a decline in real GDP per capita by 2053. This downturn would be so sharp that health care would absorb all of GDP by 2090.

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[12]This content is available online at <https://hub.mili.csom.umn.edu/content/m10052/1.1/>.

20.4b Non-health GDP per person could decline within 50 years if excess cost growth continues at historical levels

Non-health GDP per capita (2010 dollars using adjusted CPI)

First year that the non-health GDP per capita declines

— 1.4% excess cost growth (historical average, 1990–2008)
— 1.7% excess cost growth (historical average, 1985–2008)
— 1.9% excess cost growth (historical average, 1975–2008)

Because people have to have food, clothing, and shelter, 100 percent of GDP logically can never be fully devoted to health care. These projections are not predictions because they lack assumptions about changes in policy or behavior. Their use lies in demonstrating how much of a change in experience is required to "bend the cost curve" enough to avoid an undesirable outcome.

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- Figure 20.4b Image Slide (as it appears above)[15]
- Figure 20.4b Editable Slide (can be formatted as desired)[16]

20.4.2 References

A. Author's calculations.
B. Congressional Budget Office.
C. Department of Commerce. Bureau of Economic Analysis.
D. Department of Commerce. Bureau of the Census.
E. Department of Health and Human Services. Centers for Medicare and Medicaid Services.
F. Social Security Administration.

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[13]https://hub.mili.csom.umn.edu/content/m10052/latest/20.4aIMG.ppt
[14]https://hub.mili.csom.umn.edu/content/m10052/latest/20.4aDATA.ppt
[15]https://hub.mili.csom.umn.edu/content/m10052/latest/20.4bIMG.ppt
[16]https://hub.mili.csom.umn.edu/content/m10052/latest/20.4bDATA.ppt

G. Worthington NL. National Health Expenditures, Calendar Years 1929-73. Research and Statistics Note No 1. Office of Research and Statistics 1975.

20.5 20.5 90% of Annual GDP Growth Would Be Devoted to Health Care by 2085 if 1% Excess Cost Growth Persisted[17]

Uncertainty is pervasive in long-term forecasts of health spending. An approach called "stochastic modeling" is used by Medicare Trustees and other analysts to try to quantify the extent of that uncertainty.

Because perfect prediction is impossible, the goal of analysts is to identify some boundaries within which the true value of future spending is likely to lie. A 95 percent probability interval (also termed a *confidence interval*) is a typical approach to articulating these boundaries. Given uncertainty in future population, health status, and growth in health-status-adjusted per-beneficiary spending, the actual level of future spending is expected to fall within such an interval 95 percent of the time. There is more than a four-to-one ratio between the estimated Medicare share of GDP at the top of this interval compared with the bottom (figure 20.5a).

20.5a There is a huge amount of uncertainty in 75-year forecasts of Medicare or other health spending

*Projected Medicare spending as a percentage of GDP*
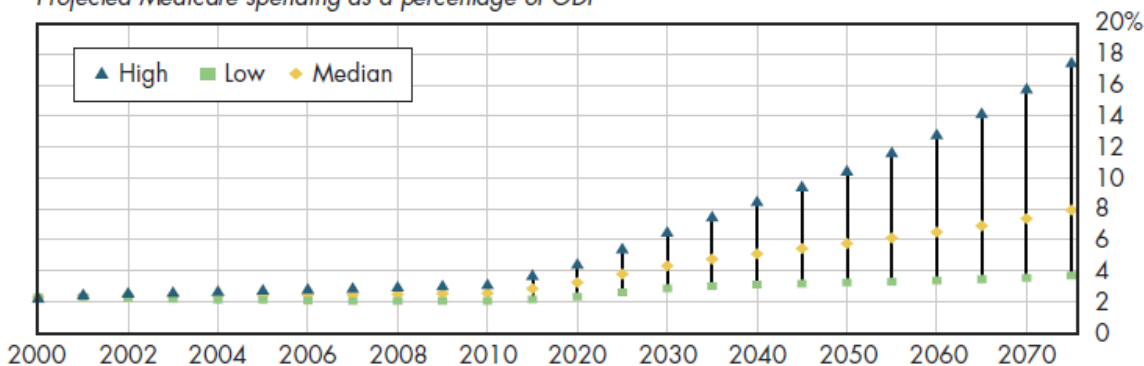
Note: Low and high estimates encompass a 95 percent probability interval. Given uncertainty in future population, future health status, and growth in health-status adjusted per beneficiary spending, the actual level of future spending is expected to fall within this interval 95 percent of the time.

Even official forecasts of Medicare spending vary dramatically. In its 2010 annual report, the Medicare Trustees predicted that total Medicare spending in the year 2080 would be 6.4 percent (figure 20.5b). The CBO, using different assumptions about growth in GDP and growth in Medicare spending, concluded that Medicare by 2080 would account for 11 to 12 percent of GDP. Which prediction is "true" is less important than understanding that even highly skilled experts using reasonable variations in assumptions can produce widely disparate estimates of 75-year costs. Even a seemingly small difference in assumptions (for example, GDP will grow 0.1 percent more slowly) accumulates into a vast difference when compounded over decades.

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[17]This content is available online at <https://hub.mili.csom.umn.edu/content/m10053/1.2/>.

20.5b Official forecasts of Medicare spending differ dramatically due to different assumptions about growth of GDP and health spending

Total Medicare expenditures as a percentage of GDP
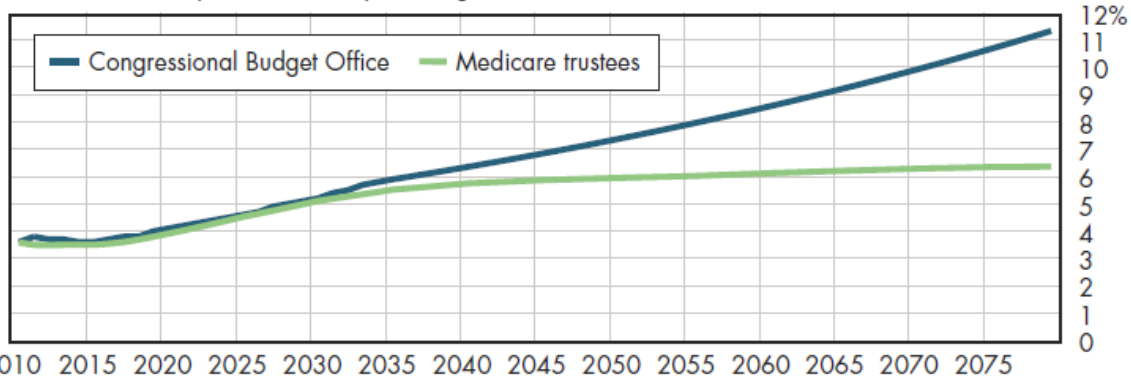
All the official forecasts assume a decline in the excess cost growth rate over the 75-year projection period. After 75 years, the Trustees assume that excess cost growth will be zero, that is, that Medicare will grow at the same pace as the general economy. The CBO, in contrast, assumes that excess cost growth for all other components of health spending (including Medicaid, CHIP, and exchange subsidies) will be zero, but that the excess cost growth for Medicare in 2085 still would be one percentage point. Were excess cost growth of one percentage point to continue for the entire health system, it would imply that by 2085, 90 cents of every extra dollar of GDP would flow into the health system (figure 20.5c).

20.5c If 1 percent excess cost growth persists, almost 90 percent of GDP increases will be devoted to health care by 2085

Share of increase in inflation-adjusted GDP per capita devoted to health care
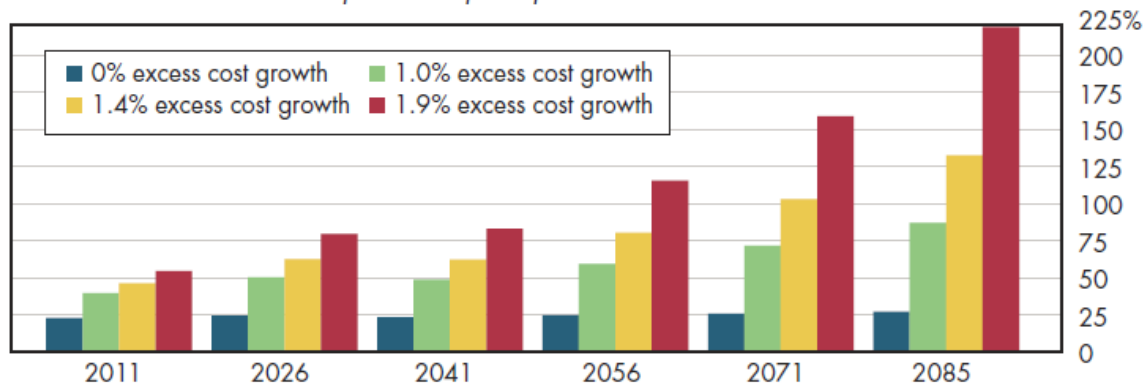
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- Figure 20.5b Editable Slide (can be formatted as desired)[21]

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[18]https://hub.mili.csom.umn.edu/content/m10053/latest/20.5aIMG.ppt
[19]https://hub.mili.csom.umn.edu/content/m10053/latest/20.5aDATA.ppt
[20]https://hub.mili.csom.umn.edu/content/m10053/latest/20.5bIMG.ppt
[21]https://hub.mili.csom.umn.edu/content/m10053/latest/20.5bDATA.ppt

- Figure 20.5c Image Slide (as it appears above)[22]
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20.5.2 References

A. Author's calculations.
B. Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, The. 2010 Annual Report. US Government Printing Office. August 5, 2010.
C. Congressional Budget Office.
D. Lee R and T Miller. An Approach to Forecasting Health Expenditures, with Application to the US Medicare System. Health Services Research 2002; 37(5):1365-86.

20.6 20.6 Long-Term Unfunded Liabilities Associated with Health Entitlements Exceed \$66 Trillion[24]

The unfunded liabilities for entitlements exceed \$80 billion over the long term (figure 20.6a). Only approximately 20 percent has to do with Social Security. The rest (\$66 trillion) is due to health entitlements. If it works as planned, the new health plan will reduce unfunded liabilities for Medicare by tens of billions of dollars.

20.6a Even assuming that the health reform law works as intended, unfunded liabilities for entitlements will exceed \$80 trillion over the long run

Net present value of unfunded liabilities (trillions of 2009 dollars)
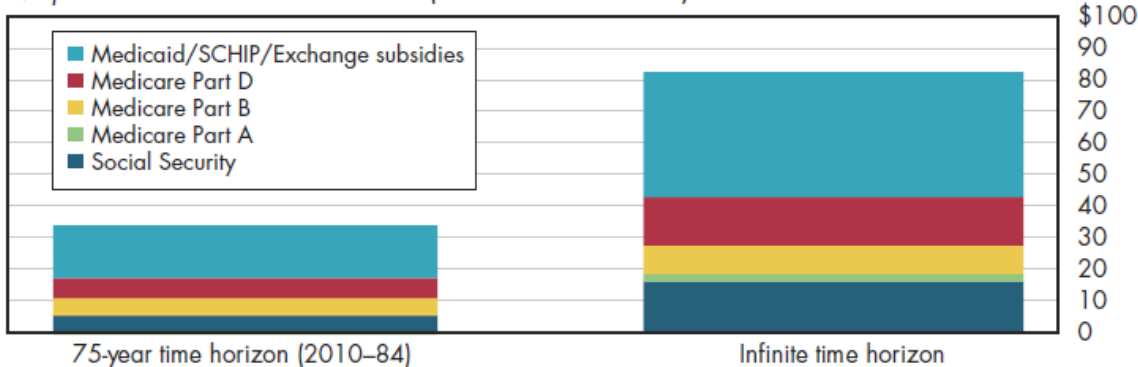
Note: For Medicare Part B, Medicare Part D, and Medicaid, unfunded liabilities are calculated assuming that the 2010 share of GDP represents current willingness-to-pay for these programs. Any increase in spending above this share is calculated as an unfunded liability for which higher taxes must be paid eventually.

However, both the Medicare actuary and the CBO have raised questions about whether some of the law's underlying premises will be maintained. For example, all the CBO projections used in this section assume that physician fees under Medicare will be cut by approximately 30 percent. With looming physician shortages, few believe such a drastic cut is desirable even though current law technically requires it. As it has for the past eight years, Congress is expected to keep deferring this scheduled cut indefinitely or to change the law to eliminate it. The CBO has developed an alternative fiscal scenario in which this and several other policies designed to limit spending would not continue. Under these alternative assumptions,

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[23]https://hub.mili.csom.umn.edu/content/m10053/latest/20.5cDATA.ppt
[24]This content is available online at <https://hub.mili.csom.umn.edu/content/m10054/1.1/>.

Medicare spending as a percent of GDP in 2080 (as estimated by the CBO) would be two percentage points higher than illustrated in figure 20.5b.

Calculations for unfunded liabilities assume that current payroll tax levels for Social Security and Medicare Part A remain in effect. Another assumption is that the current level of Medicaid and Medicare Parts B and D spending (as a percentage of GDP) reflect societal willingness-to-pay for these programs. The "unfunded" amount equals the increase in the burden (relative to current levels) required to sustain these programs.

To give some sense of whether these entitlements are "affordable," figure 20.6b expresses the funding shortfall as a percent of payroll. Essentially, the Social Security (FICA) payroll tax of 15.3 percent would have to more than double by the year 2080 simply to bankroll health-related entitlements. In present-value terms, the long-term unfunded liability is five times the U.S. national income (GDP) (figure 20.6c). This is approximately equivalent to assuming a mortgage equal to five times a family income. The unfunded liability is 1.5 times as much as the country's net worth. This is approximately equivalent to borrowing 1.5 times a family's net worth. Countries are not families, but these comparators at least provide a rough sense of just how large the problem of funding future entitlements has become.

20.6b The funding shortfall for major entitlements will amount to almost 20 percent of payroll within 70 years
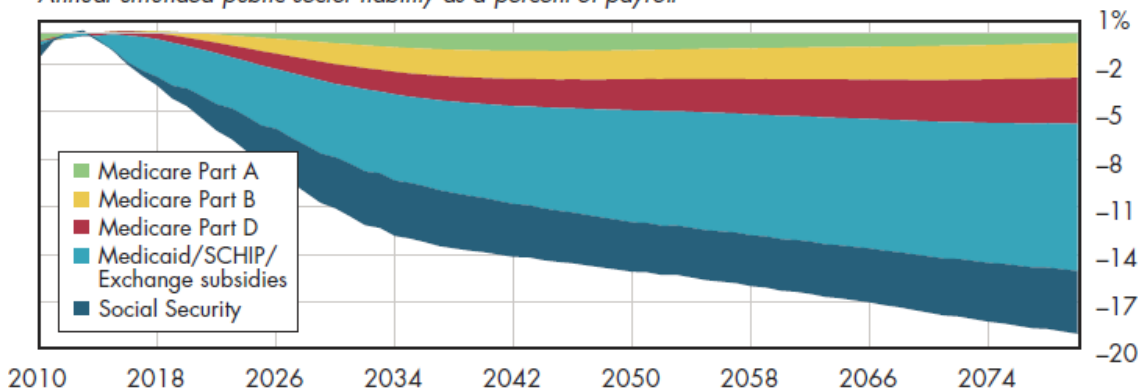

Note: Funding shortfalls for Medicaid, Medicare Part B, and Medicare Part D are calculated assuming the share of GDP devoted to these programs in 2009 represents societal willingness-to-pay for them. Under CBO's alternative fiscal scenario, the 2080 shortfall would be at least 6 percentage points higher than shown.

20.6c Health-related unfunded liabilities alone are at least double the national income; in the end, they exceed current U.S. net worth
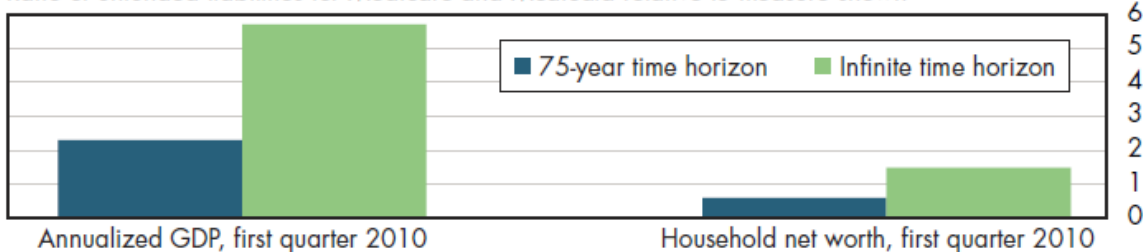
Note: Unfunded liabilities calculated as of January 1, 2010.

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- Figure 20.6b Editable Slide (can be formatted as desired)[28]
- Figure 20.6c Image Slide (as it appears above)[29]
- Figure 20.6c Editable Slide (can be formatted as desired)[30]

20.6.2 References

A. Author's calculations.
B. Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, The. 2010 Annual Report. US Government Printing Office. August 5, 2010.
C. Congressional Budget Office.
D. Department of Commerce. Bureau of Economic Analysis.
E. Social Security Administration.

20.7 20.7 Projected 75-Yr Increase in Mandatory Federal Health Spending Exceeds the Largest Source of Tax Revenue[31]

The size of the projected increase in mandatory federal health spending dwarfs the amount currently collected through the three largest sources of federal revenue (figure 20.7a). Thus, filling the fiscal gap through higher taxes would imply more than doubling individual income taxes, quintupling the amount collected in corporate income taxes, or tripling current payroll taxes (all approximations). Alternatively, because the long-run increase in mandatory federal health spending amounts to 67 percent of federal tax revenue, this would imply that a minimum 67 percent increase in federal taxes across the board would be needed to tax ourselves out of the health entitlements burden. Of course, given the inevitable behavioral response that would result from increasing taxes by this magnitude, the increase in tax rates would have to be even higher than these multipliers suggest.

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[25]https://hub.mili.csom.umn.edu/content/m10054/latest/20.6aIMG.ppt
[26]https://hub.mili.csom.umn.edu/content/m10054/latest/20.6aDATA.ppt
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[29]https://hub.mili.csom.umn.edu/content/m10054/latest/20.6cIMG.ppt
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[31]This content is available online at <https://hub.mili.csom.umn.edu/content/m10056/1.1/>.

20.7a The projected 75-year increase in mandatory federal health spending exceeds revenues from the three largest sources of federal tax revenue

Percentage of GDP
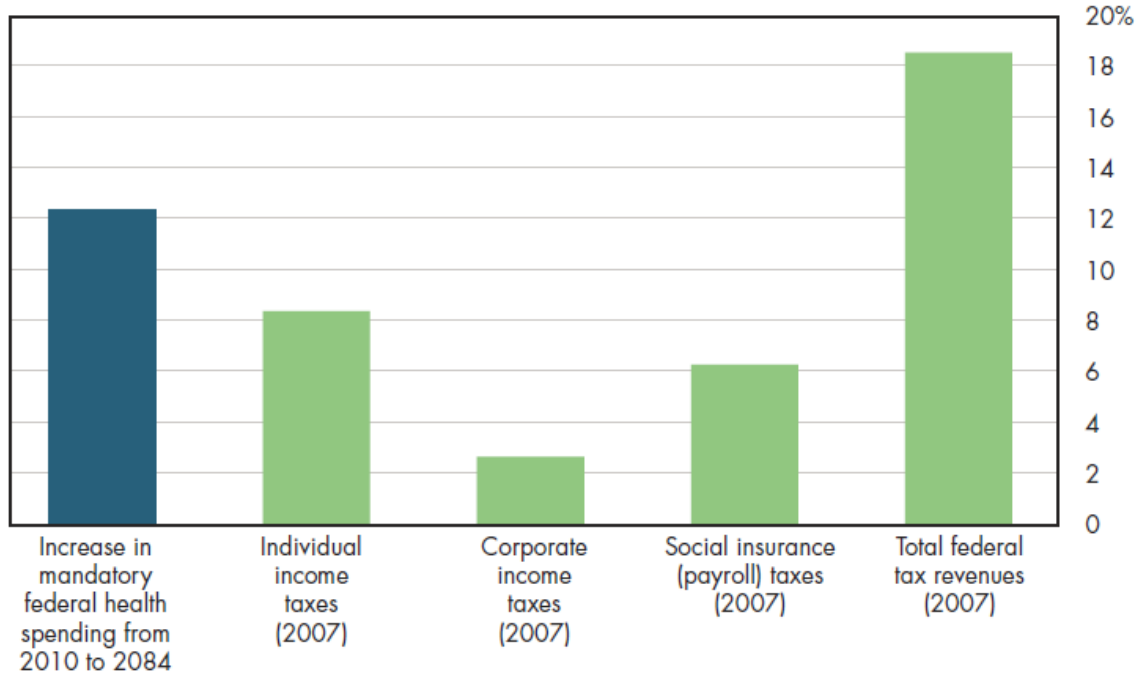
Even if taxpayers could find a way to bankroll the enormous increases in health spending reviewed in this section, it is less clear that beneficiaries of public insurance programs such as Medicare can absorb their share of rising health costs. By 2085, the out-of-pocket burden of just Medicare Parts B and D will approximately double for the average Social Security recipient (figure 20.7b). By 2085, premiums and out-of-pocket expenses will absorb more than half of the average Social Security check, assuming that such checks are not trimmed as part of the efforts to save Social Security. This does not even count any cost sharing associated with Medicare Part A. The CMS Office of the Actuary has developed an illustrative alternative scenario that recognizes that some of the Medicare spending reductions contemplated by the health reform law might not occur. For example, the cuts in physician fees required by the sustainable growth rate formula (SGR) now have been overridden by Congress for nine consecutive years. Under this alternative scenario, premiums and out-of-pocket expenses for Medicare Parts B and D would equal four-fifths of the average Social Security check by 2085.

20.7b Typical Medicare premiums and cost sharing for Parts B and D represent an increasing share of the average Social Security check

Monthly premiums and cost sharing as percentage of average monthly Social Security benefit
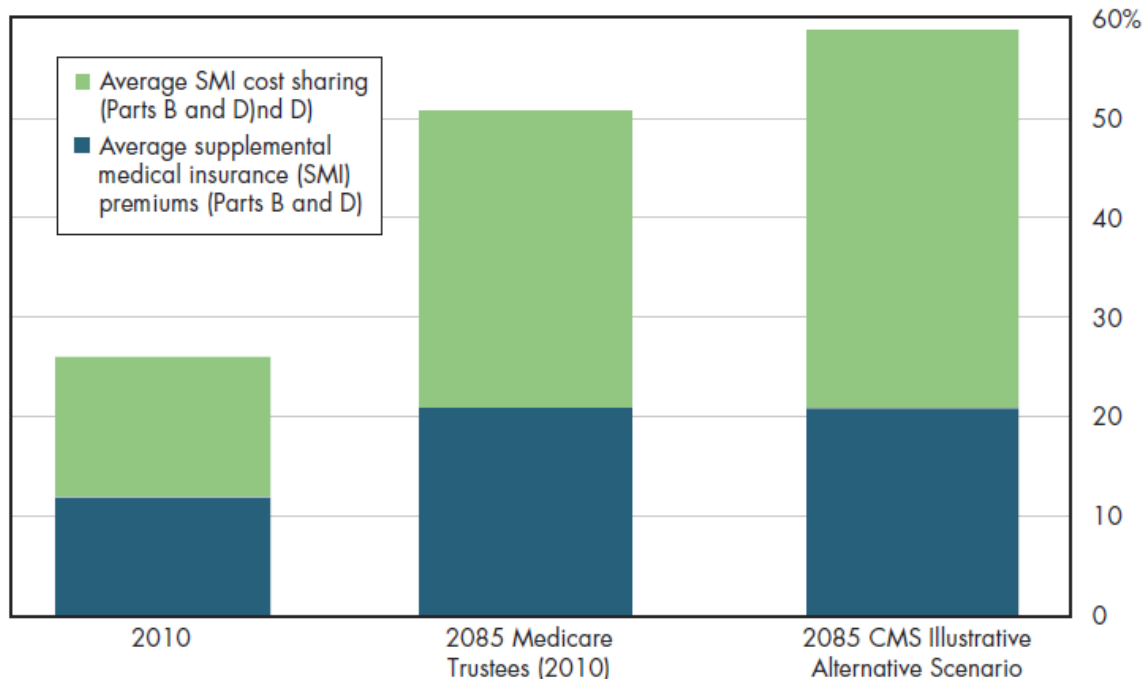
Burdens of this magnitude will amplify pressures for the federal government to subsidize such individuals even more to make their health care affordable. This would then further escalate the amount of federal health spending beyond the levels already described. Finding ways to reduce spending, rather than raising revenues, at least offers the prospect of averting this bind on the elderly who have fixed incomes.

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- Figure 20.7b Editable Slide (can be formatted as desired)[35]

20.7.2 References

A. Author's calculations.
B. Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, The. 2010 Annual Report. US Government Printing Office. August 5, 2010.
C. Congressional Budget Office.
D. Organisation for Economic Co-operation and Development.

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[32]https://hub.mili.csom.umn.edu/content/m10056/latest/20.7aIMG.ppt
[33]https://hub.mili.csom.umn.edu/content/m10056/latest/20.7aDATA.ppt
[34]https://hub.mili.csom.umn.edu/content/m10056/latest/20.7bIMG.ppt
[35]https://hub.mili.csom.umn.edu/content/m10056/latest/20.7bDATA.ppt

E. Potetz L and J Cubanski.   A Primer on Medicare Financing.   July 2009.
http://www.kff.org/medicare/upload/7731-02.pdf (accessed August 10, 2010).

20.8 20.8 US Will Face Challenge of an Increasing Number of Dependents per Working Adult[36]

The U.S. elderly-dependency ratio is much lower than in any other G7 nation, despite having risen during the past 50 years (figure 20.8a). The elderly-dependency ratio measures the number of people age 65 and older relative to a "working-age" population (those ages 15-64). The U.S. ratio is lower, and in almost all comparisons, it increased less rapidly over the past 25 years (absolutely and relatively) than among the nation's major competitors. Japan's ratio, for example, was less than the U.S. level in 1984, yet by 2007 was almost twice as high.

20.8a Over the past 50 years, the elderly dependency ratio in the United States has increased, but it is lower than ratios in other industrialized nations

*Elderly persons (age 65 and older) per 100 persons age 15–64*
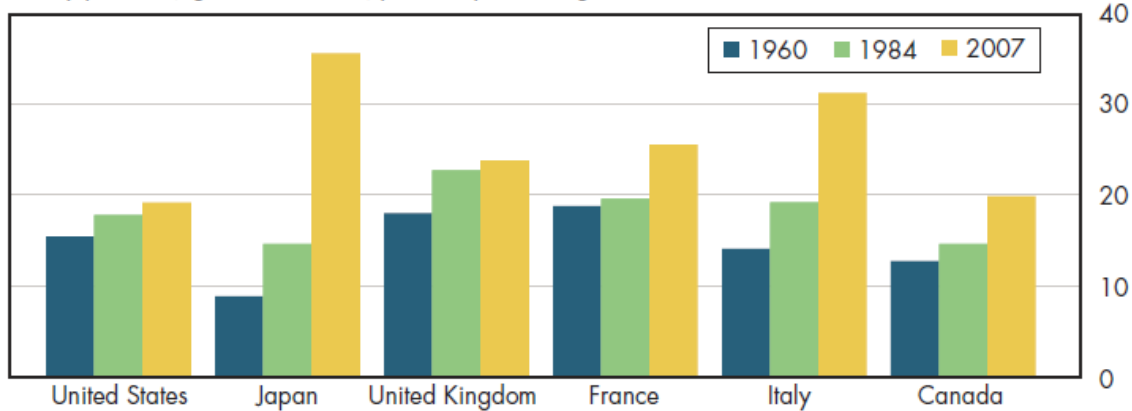
The OECD projects that this U.S. margin of advantage will persist through 2050, because all these countries will experience sharp rises in their dependency ratios. However, due to the "Baby Boomers," the U.S. ratio is expected to reach almost 45 in the year 2040 before declining to approximately 40 in 2050. Thus, the nation is doing better in relative terms, but it still must face the fiscal challenges posed by the dependency ratio more than doubling over the next few decades. In fact, the number of covered workers per Social Security beneficiary is expected to decline even under the most optimistic assumptions (figure 20.8b).

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[36]This content is available online at <https://hub.mili.csom.umn.edu/content/m10057/1.2/>.

20.8b The number of covered employees per Social Security beneficiary is expected to decline even under the most optimistic assumptions



Number of covered employees per OASDI beneficiary
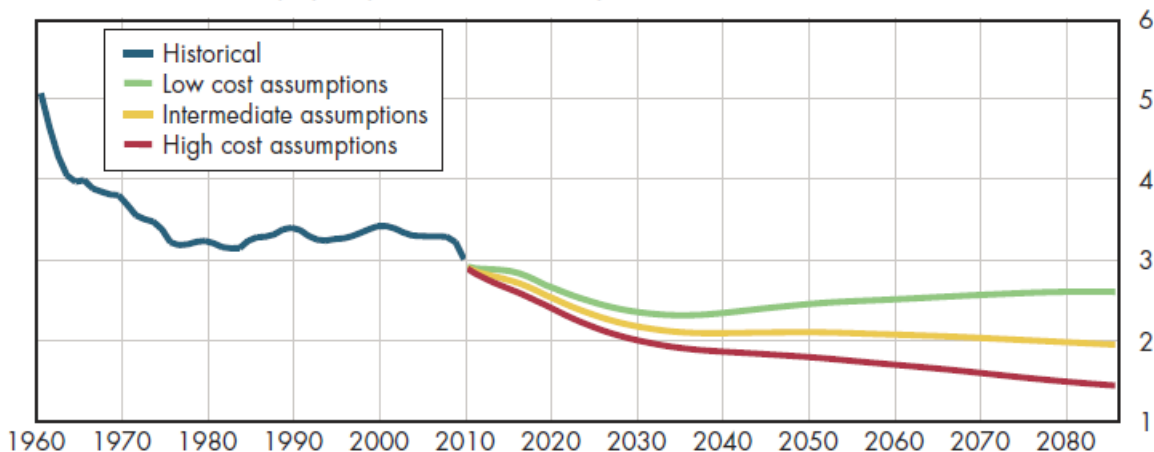
Note: OASDI = Old Age, Survivors, and Disability Insurance.

The U.S. demographic margin of advantage is offset considerably when differences in the relative burden of elderly health spending are taken into account. In the United States, per capita elderly health spending amounts to approximately 45 percent of the average annual compensation for manufacturing workers (figure 20.8c). In the rest of the G7, this fraction is approximately only half as much. Manufacturing compensation is considered a "good" wage in all countries, and standardized cross-national estimates of hourly compensation for such workers are readily available. Because U.S. manufacturing productivity is higher than in these other countries (contributing to its higher wages), this comparison should favor the United States. To observe such a large differential despite a comparison tilted in the nation's favor is quite striking. It implies that relative to a competitor, the United States could face a comparable burden of financing elderly health care even if its elderly-dependency ratio were only half as much.

20.8c Relative to competitors, U.S. health spending per elderly person is a much higher share of average manufacturing compensation

Elderly health spending as a percentage of average annual compensation in manufacturing (2007)
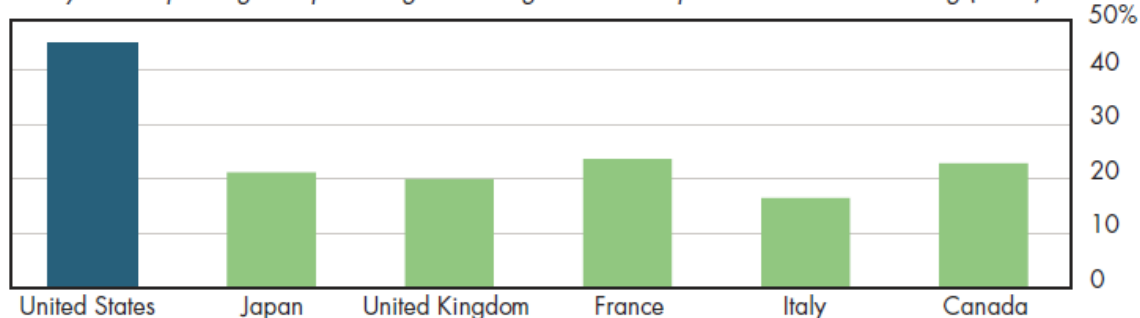
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- Figure 20.8b Editable Slide (can be formatted as desired)[40]
- Figure 20.8c Image Slide (as it appears above)[41]
- Figure 20.8c Editable Slide (can be formatted as desired)[42]

20.8.2 References

A. Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, The. 2010 Annual Report. US Government Printing Office. August 5, 2010.
B. Organisation for Economic Co-operation and Development.

20.9 20.9 Projected Increase in US Government-Related Health Spending and Its Effect[43]

The United States holds a considerable margin of advantage over its major European rivals in terms of the government share of GDP (figure 20.9a). Compared with countries such as Italy, France, and the UK, that margin of advantage is approximately 10 percent of GDP; in the case of Germany, it exceeds 5 percent of GDP. The size of government (all levels) in Canada and Japan is much more comparable to that of the United States.

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[38]https://hub.mili.csom.umn.edu/content/m10057/latest/20.8aDATA.ppt
[39]https://hub.mili.csom.umn.edu/content/m10057/latest/20.8bIMG.ppt
[40]https://hub.mili.csom.umn.edu/content/m10057/latest/20.8bDATA.ppt
[41]https://hub.mili.csom.umn.edu/content/m10057/latest/20.8cIMG.ppt
[42]https://hub.mili.csom.umn.edu/content/m10057/latest/20.8cDATA.ppt
[43]This content is available online at <https://hub.mili.csom.umn.edu/content/m10059/1.1/>.

20.9a The United States has a lower burden of government, compared with its major European competitors

General government spending (all levels) as percentage of GDP
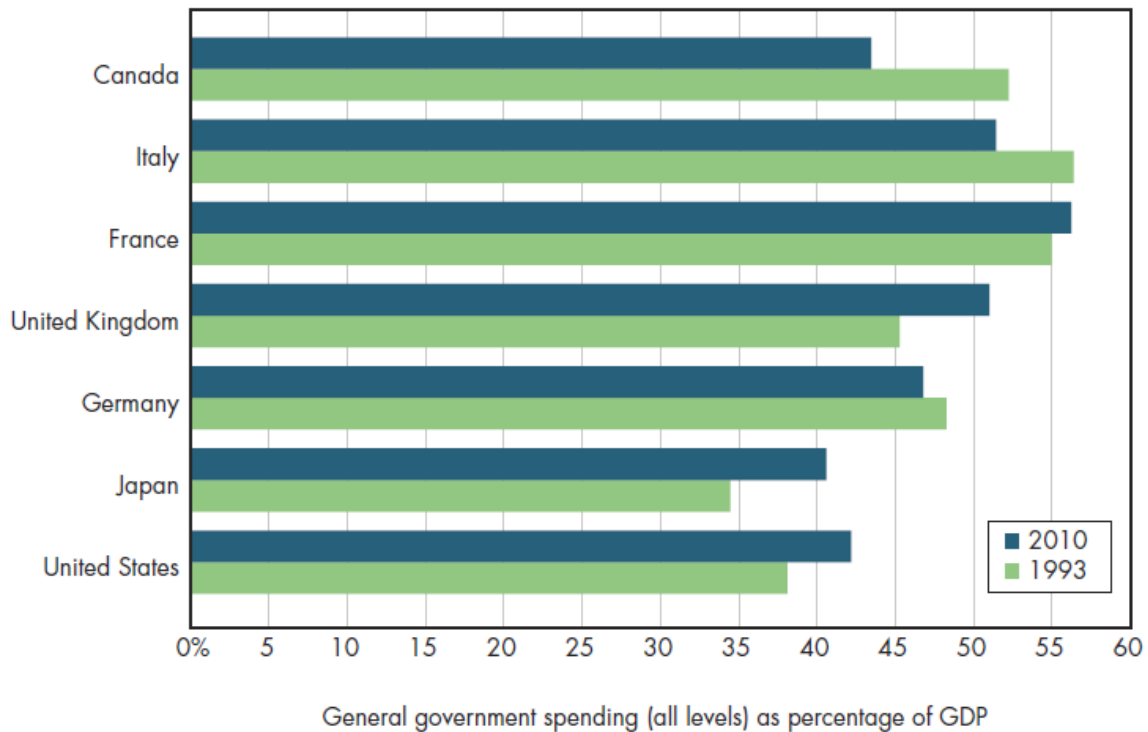
Although much of U.S. federal spending has been deficit-financed in recent years, that situation cannot continue indefinitely. Eventually, increased government spending as a percent of GDP translates into relatively higher taxes and the hidden efficiency costs they impose. At the margin, these efficiency losses in the United States amount to more than 40 cents on the dollar. All other things being equal, a country that can minimize such efficiency losses will outperform a nation that has a larger government.

However, absent changes in policy, this margin of advantage could be more than eradicated over the next 50 years simply through increases in mandatory federal health spending for the aging population in the United States (figure 20.9b). Other nations also face a rising tax burden for aging populations. The size of their burden is less, for two reasons. First, many countries are ahead of the United States in terms of the share of their populations that is elderly. Thus, they have comparatively less future aging to address. Second, in nations with universal coverage, government already has been financing their health care in advance of retirement. The incremental increase in tax burdens associated with an already-covered 64-year-old becoming 65 is far less than for a U.S. retiree whose health care for the first time is a federal responsibility.

20.9b Rapid growth in government-paid health care threatens to eradicate this margin of advantage

Government health spending (all levels) as percentage of GDP
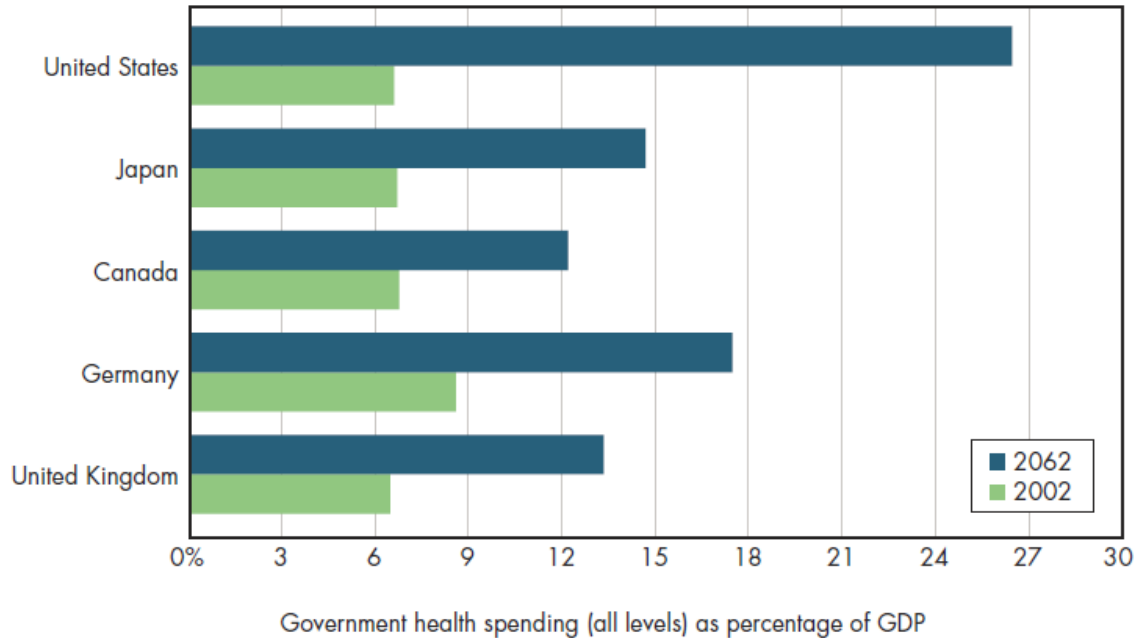
Note: Data calculated assuming age-adjusted health benefit rates grow at historic rates for 60 years.

The United States has been able for decades to enjoy the highest standard of living in the world only by maintaining one of the world's most highly competitive economies. Unless it can address its entitlements crisis without impairing its own competitiveness, the nation might find itself unable to afford either the health care or other goods that its residents desire. Conversely, by addressing entitlements in a responsible fashion, the United States can continue to afford investments in health care that provide good value for the money, with the attendant increases in longevity and years of healthy life that are reasonable to expect from a high-performing health care system.

20.9.1 Downloads

Download PowerPoint versions of both figures.

- Figure 20.9a Image Slide (as it appears above)[44]
- Figure 20.9a Editable Slide (can be formatted as desired)[45]
- Figure 20.9b Image Slide (as it appears above)[46]
- Figure 20.9b Editable Slide (can be formatted as desired)[47]

20.9.2 References

A. Hagist C and L Kotlikoff. Who's Going Broke? Comparing Healthcare Costs in Ten OECD Countries. NBER Working Paper No. 11833. December 2005.
B. Organisation for Economic Co-operation and Development.

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[44]https://hub.mili.csom.umn.edu/content/m10059/latest/20.9aIMG.ppt
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