Added

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Amy Finkelstein et al., “[The Oregon Health Insurance Experiment: Evidence from the First Year](http://economics.mit.edu/files/8139)” *Quarterly Journal of Economics* *127* (2012): 1057-1106.

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Taubman, Sarah L., et al. “Medicaid Increases Emergency Department Use: Evidence from Oregon’s Health Insurance Experiment,” *Science 343* (2014):263-269.

Note: Used data from Centers for Medicare and Medicaid Services website for data updates

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<title id="ch01.title">Introduction</title>

<section id="ch01lev1fm" role="fm"><title id="ch01lev1fm.title"/><objectiveset id="ch01os01"><objective id="ch01os01ob01"><para><inst>⏹ </inst>What Is Health Economics?</para></objective>

<objective id="ch01os01ob02"><para><inst>⏹ </inst>The Relevance of Health Economics</para></objective>

<objective id="ch01os01ob03"><para><inst>⏹ </inst>Economic Methods and Examples of Analysis

⏹ Two Notable Contributors to Health Economics </para></objective>

<objective id="ch01os01ob04"><para><inst>⏹ </inst>Does Economics Apply to Health and Health Care?</para></objective>

<objective id="ch01os01ob05"><para><inst>⏹ </inst>Is Health Care Different?</para></objective>

<objective id="ch01os01ob06"><para><inst>⏹ </inst>Conclusions</para></objective></objectiveset></section>

H<section id="ch01lev1bm" role="bm"><title id="ch01lev1bm.title"/><para>ealth care accounts for over one-sixth of the U.S. economy! Yet millions in the United States have no health insurance. The Obama reform legislation, the Affordable Care Act or ACA, passed in 2010 and still in progress, is designed to address this problem. Health, health care costs, and health insurance have dominated the economic and political landscape in the United States and many other countries. Health economists study these issues carefully, and in general, health economics applies the principles of scientific empiricism to issues of health and health care. Because our health is of vital concern to us, and because the health care sector has become the largest sector of the U.S. economy, we should not be surprised that health economics has emerged as a distinct specialty within economics.</para>

<para> The scope of health economics and the emphasis of this text can be previewed by examining the Table of Contents. The production of health and health care, demand and supply of specific health services are prominent. Private health insurance markets critically define the U.S. workplace, so we examine these markets. Government, through its social programs and power to regulate, receives close attention. We also concentrate on issues such as information, quality of care, and equity of access. Finally, we look to the health care systems of other countries for information on their practices and for potential insights on the policy issues that dominate the political landscape.</para>

<para>In this first chapter, we provide further background on health economics and health economists. We follow with a broad overview of the magnitude and importance of the health care sector and with an introduction to some major policy concerns. As our final goal, we seek to promote the theme that economics helps explain how health care markets function. We focus on methods used in economic analyses and address two recurring questions: Is health care different, and does economics apply? Despite stressing the distinctive features of health care services and markets, we answer both in the affirmative. With appropriate modifications to conventional analytical tools, economics is relevant and useful. As we shall see throughout the book, although there is continuing controversy on many major issues, health economists have provided insight and solutions to most problems of academic and policy interest.</para>

<section id="ch01lev1sec1"><title id="ch01lev1sec1.title">**What is Health Economics?**</title>

<para>Health economics is defined by <emphasis>*who*</emphasis> health economists are, and <emphasis>*what*</emphasis> they do! Morrisey and Cawley (2008) examined the field of health economics in 2005 and found that almost </para><orderedlist numeration="arabic" spacing="normal" inheritnum="ignore" continuation="restarts"><listitem><title><inst>all (96 percent) held academic doctorate degrees. Nearly three-quarters of those with doctorates received their degrees in economics.</para></listitem>

**<listitem><title><inst>**The majority worked in university settings; most others worked for nonprofit organizations or in government, mainly the federal government.</para></listitem> <listitem><title><inst>Health economists held their appointments in economics departments schools of public health, and in schools of medicine. Many of the leading economics departments—e.g. MIT, Princeton, Berkeley, Harvard—now feature prominent health economists. <para role="continued">Health economists draw on various sub-disciplines of training within economics, including labor economics, industrial organization, public finance, cost-benefit analyses, and most generally, microeconomics.</para>

<para>Throughout this book, we describe many specific research studies. Consider, at this time, that the United States devotes by far the largest share of GDP to health care spending (over one-sixth), and its per-capita health care spending (over ~~$9,000~~ $9,500) greatly exceeds that of any other country. Most health economists agree that these spending patterns reflect the rapid rate of adoption of new technology in the United States. The United States does not have a very impressive record in terms of broad health outcomes indicators such as life expectancy and infant mortality. Critics of the U.S. health care system often wonder what Americans are getting for their money. Policymakers and health economists seek to determine whether spending on new technology is worth it. Arguably, there is no more important issue.</para>

<para>Consider, for example, a new surgical procedure for a patient with acute myocardial infarction (heart attack). It is not enough to estimate the immediate cost impact of the new procedure and the expected benefit to the patient in terms of short-term survival. By impacting the patient’s health for many years, the new treatment will affect spending well into the future. David Cutler (2007) develops a framework to address these complex interrelationships in “The Lifetime Costs and Benefits of Medical Technology.” He analyzes <emphasis>*revascularization,*</emphasis> a set of surgical procedures such as coronary bypass and angioplasty that restore blood flow. He looks at a group of Medicare patients who have had heart attacks and he tracks them for up to 17 years. <link olinkend="ch04" preference="0">Chapter <xref olinkend="ch04" label="4"><inst>4</inst></xref></link> devotes considerable attention to Cutler’s work, but here we highlight his conclusion that revascularization costs $33,000 for an extra year of life. Is this worth it? Most would agree that it is!<link linkend="ch01sb01" preference="1" type="forward"/></para>

<para>Health care costs in general, and technology-related costs in particular, are relevant to all countries (<link linkend="ch01sb01" preference="0" type="backward">Box <xref linkend="ch01sb01" label="1-1"><inst>1-1</inst></xref></link> provides an international perspective). Health economics is still a relatively new discipline with an evolving scope and pedagogy, and neither it, nor we, will provide answers to all the health system questions that nations face. Despite this caveat, we cannot think of any field of study that is more relevant to unraveling the meaning of today’s headlines, or more pertinent to the lives of individual Americans.

<sidebar id="ch01sb01" label="1-1" float="1" type="bx1"><inst>**Box 1-1**</inst>

<title id="ch01sb01.title">**Technological Change and Health Care Costs—Why Rising Health Care Costs Affect All Nations**</title>

<para>In a March 2005 speech to the National Association of Business Economics, then-Chairman of the Council of Economic Advisers Harvey Rosen noted that over the last several decades, the health care quality—diagnostic techniques, surgical procedures, and therapies for a wide range of medical problems – has improved. Treatment of a heart attack today is simply not the same “commodity” as treatment of a heart attack in 1970. Although innovations like coronary bypass surgery and cardiac catheterization have raised expenditures per heart patient, they have actually reduced the prices of obtaining various health outcomes, such as surviving hospitalization due to a heart attack.</para>

<para>Some improvements in medical technique were quite inexpensive. Prescribing aspirin for heart attack victims leads to a substantial improvement in their survival probabilities, but new medical technologies were often costly. For example, it cost about $2 million to acquire a PET (positron emission tomography) machine, which can detect changes in cells before they form a tumor large enough to be spotted by X-rays or MRI. Such costly improvements lead medical expenditures to grow.</para>

<para>This technology-based theory also helps explain why countries as different as the United States, the United Kingdom, or Japan have all experienced increases in health care expenditures. Rosen argued that these societies have at least one thing in common—they all have access to the same expensive innovations in technology. The technology-based explanation puts any debate over cost containment in a new light. Is it a bad thing if costs are rising mostly because of quality improvements? A key question in this context is whether people value these innovations at their incremental social cost. No one knows for sure, but economist Dana Goldman reiterates a provocative insight: “If you had the choice between buying 1960s medicine at 1960s prices or today’s medicine at today’s prices, which would you prefer?” A vote for today’s medicine is validation of the improvement and willingness to pay for improved quality!</para>

<source><emphasis>*Sources:*</emphasis> Goldman, Dana P., “Pressure from Rising Health-Care Costs: How Can Consumers Get Relief?” <ulink url="http://www.rand.org/commentary/102305PE.html">www.rand.org/commentary/102305PE.html</ulink>.</source></sidebar>

<section id="ch01lev1sec2"><title id="ch01lev1sec2.title">**The Relevance of Health Economics**</title>

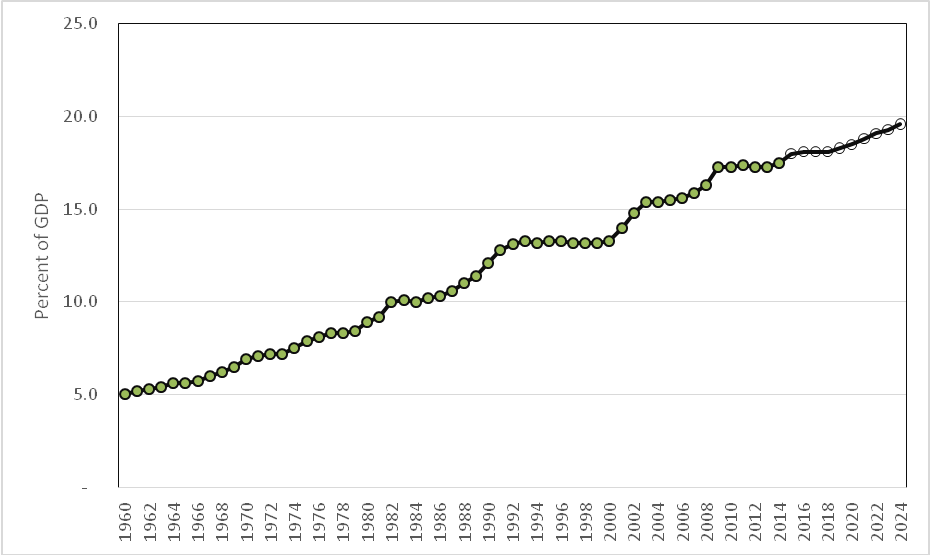
<para>The study of health economics is important and interesting in three related ways: (1) the size of the contribution of the health sector to the overall economy, (2) the national policy concerns resulting from the importance many people attach to the economic problems they face in pursuing and maintaining their health, and (3) the many health issues that have a substantial economic element.</para>

<section id="ch01lev2sec1"><title id="ch01lev2sec1.title">**The Size and Scope of the Health Economy</title>**

<para>The health economy merits attention for its sheer size, constituting a large share of GDP in the United States, as well as in other countries. It also represents a substantial capital investment and a large and growing share of the labor force.</para></section>

<section id="ch01lev2sec2"><title id="ch01lev2sec2.title">**Health Care’s Share of GDP in the United States</title>**

<para>By the second decade of the twenty-first century, more than $1 out of every $6 spent on final goods and services in the U.S. economy went to the health sector. As recently as 1980, the share of GDP (the market value of final goods and services produced within the borders of a country in a year) devoted to health care was $1 in $11, and in 1960 it was just $1 in $20. <link linkend="fg01\_00100" preference="1" type="forward">Figure <xref linkend="fg01\_00100" label="1-1"><inst>1-1</inst></xref></link> tracks the health economy’s share of GDP from 1970 to 2024. The conclusion? The health care sector is a large and growing portion of our economy.



<figure id="fg01\_00100" label="1-1" float="1" prefix="Figure"><inst>**Figure 1-1**  </inst><mediaobject float="0"><imageobject><imagedata fileref="FG\_01\_001.eps" width="256" depth="256"/></imageobject><caption><para>U.S. Health Expenditure Shares, 1960–2024</inst>

*Source:* Centers for Medicare and Medicaid Services: <ulink url="http://www.cms.gov/NationalHealthExpendData/25\_NHE\_Fact\_Sheet.asp">http://www.cms.gov/NationalHealthExpendData; Proquest Statistical Abstract of the United States, 2016; NHE figures from 2016 and later are projected numbers. </source></mediaobject></figure>

<para>In calculating the share of GDP spent on health care, we net out the effects of general inflation. Therefore, only three major possibilities exist to explain the substantially increased ratios shown in <link linkend="fg01\_00100" preference="0" type="backward">Figure <xref linkend="fg01\_00100" label="1-1"><inst>1-1</inst></xref></link>:</para>

<orderedlist numeration="arabic" spacing="normal" inheritnum="ignore" continuation="restarts"><listitem><para><inst> 1. </inst>People may be buying more health services. Patients may be consulting with health care providers more frequently, doctors may be ordering more tests, or they may be prescribing more drugs.</para></listitem>

<listitem><para><inst> 2. </inst>People may be buying higher-quality health services, including products and services that previously were not available. Laser surgery, organ transplants, measles vaccines, and new treatments for burn victims, unavailable in 1960, have raised the quality of care. Economic theory suggests that people are willing to pay more for better quality.</para></listitem>

<listitem><para><inst> 3. </inst>Health care inflation may be higher than the general inflation rate. Higher incomes and the increased prevalence of insurance, including large government programs such as Medicare and Medicaid, may have led to increased health care prices over time.</para></listitem></orderedlist>

<para>We seek to understand these phenomena and their contributions to total spending. The study of demand, insurance, production, technology, and labor supply, among other topics, will help meet this challenge.</para></section>

<section id="ch01lev2sec3"><title id="ch01lev2sec3.title">**Health Care Spending in Other Countries</title>**

<para>Examining the health economies of other countries enhances our understanding of the U.S. health economy. Many countries have large health care sectors and face the same major issues. <link linkend="ch01table01" preference="1" type="forward">Table <xref linkend="ch01table01" label="1-1"><inst>1-1</inst></xref></link> shows how health care spending as a share of GDP grew rapidly in most countries between 1960 and 1980. A more mixed picture emerges after 1980. The health care share in the United States continued to grow in each period after 1980 shown in <link linkend="ch01table01" preference="0" type="forward">Table <xref linkend="ch01table01" label="1-1"><inst>1-1</inst></xref></link>, but growth was more modest in most other countries.</para>

<para>The data also indicate the relative size of the U.S. health economy compared to that of other countries. For example, health care’s share of GDP in the United States is nearly twice as large as the share in the United Kingdom—a country with national health insurance. Is care costlier in the United States? Is it higher quality care, or are we simply consuming more?</para></section>

<table id="ch01table01" label="1-1" float="1" frame="none" prefix="Table"><title id="ch01table01.title"><inst>**Table 1-1**</inst>**Health Expenditures as Percent of GDP in Selected OECD Countries**</title><tgroup cols="7" colsep="0" rowsep="0" align="left"><colspec colnum="1" colname="c1" align="left" colwidth="100"/><colspec colnum="2" colname="c2" align="char" char="." colwidth="50"/><colspec colnum="3" colname="c3" align="char" char="." colwidth="50"/><colspec colnum="4" colname="c4" align="char" char="." colwidth="50"/><colspec colnum="5" colname="c5" align="char" char="." colwidth="50"/><colspec colnum="6" colname="c6" align="char" char="." colwidth="50"/><colspec colnum="7" colname="c7" align="char" char="." colwidth="50"/><spanspec spanname="s1" namest="c1" nameend="c7" align="left"/>

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</para></note>

<source>*Source:* Organization for Economic Cooperation and Development (OECD) Health Care Data, extracted June 2016.</source></entry></row></tbody></tgroup></table>

<section id="ch01lev2sec4"><title id="ch01lev2sec4.title">**Importance of the Health Economy in Personal Spending</title>**

<para>Because it accounts for such a large share of the domestic product, the size of the health economy is also reflected through other key indicators. Two of these are especially easy to relate to at the personal level: (1) share of income spent on medical care and (2) number of jobs in the health economy.</para>

<para><link linkend="ch01table02" preference="1" type="forward">Table <xref linkend="ch01table02" label="1-2"><inst>1-2</inst></xref></link> provides data on how U.S. consumers spend their disposable incomes. It shows that in 2015, consumers spent 18.3 percent of their budgets on health care, as opposed to 7.3 percent on food, and 15.6 percent on housing. These figures represent a major shift in spending patterns. As recently as 1960, food represented about 25 percent of spending, and medical care only 5 percent.

</para></section>

<table id="ch01table02" label="1-2" float="1" frame="none" prefix="Table"><title id="ch01table02.title"><inst>**Table 1-2**</inst>**Total Consumption Expenditures (in $ Billions) by Type, 2015**</title><tgroup cols="3" colsep="0" rowsep="0" align="left"><colspec colnum="1" colname="c1" align="left" colwidth="200"/><colspec colnum="2" colname="c2" align="char" char="." colwidth="50"/><colspec colnum="3" colname="c3" align="char" char="." colwidth="50"/><spanspec spanname="s1" namest="c1" nameend="c3" align="left"/>

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2015** | | | | **% of Total** | | |
| **Total Personal consumption expenditures** | **12,283.7** | **100.0%** | | | |
|  |  | | | |  | | |
| **Durable goods** | **1,355.2** | **11.0%** | | | |
| **Nondurable goods** | **2,656.9** | **21.6%** | | | |
| Food and beverages | 900.7 | | 7.3% | | | |
| Clothing and footwear | 379.5 | | 3.1% | | | |
| Gasoline and other energy goods | 303.7 | | 2.5% | | | |
| Other nondurable goods | 1,073.0 | | 8.7% | | | |
| **Services** | **8,271.6** | **67.3%** | | | |
| Housing | 1,919.9 | | | 15.6% | | |
| Household Utilities | 313.3 | | | 2.6% | | |
| Transportation services | 368.4 | | | 3.0% | | |
| Recreation services | 466.3 | | | 3.8% | | |
| Food services and accommodations | 808.8 | | | 6.6% | | |
| Other services | 2,147.2 | | | 17.5% | | |
| Health care | 2,247.7 | | | 18.3% | | |
| Physicians | 484.5 | | | | 3.9% | | |
| Dentists | 117.8 | | | | 1.0% | | |
| Paramedical services | 328.5 | | | | 2.7% | | |
| Hospitals and nursing homes | 1,138.2 | | | | 9.3% | | |
| Health insurance | 178.7 | | | | 1.5% | | |

*Source*: U.S. Department of Commerce, Bureau of Economic Analysis, Table 2.4.5 Personal Consumption Expenditures by Type of Product [Billions of dollars], last Revised on August 03, 2016, accessed August 2016. <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=3&isuri=1&903=70>

<section id="ch01lev2sec5"><title id="ch01lev2sec5.title">**Importance of Labor and Capital in the Health Economy</title>**

<para><link linkend="ch01table04b" preference="1" type="forward">Table <xref linkend="ch01table04b" label="1-3B"><inst>1-3</inst></xref></link> provides information on specific health care occupations and their growth since 1970. In 2013, there were over 1,045,910 physicians and almost 287,420 pharmacists. The nursing sector alone consisted of over 3 million people with over three-quarters of them trained as registered nurses.</para>

<para>The considerable growth in health care personnel is evident. In 1970, there were 334,000 physicians, or 164 physicians per 100,000 people. By 2013, the number of physicians had increased by 171 percent to 1,045,910 or 380 per 100,000 population. The number of registered nurses had more than tripled by 2013, with their number per 100,000 population more than doubling from 369 to 841.</para>

<para>Reflecting the increases in spending, the health care sector serves increasingly as a source of employment. Thus, cutbacks in spending on health care, if proposed and implemented, would typically mean cutbacks in employment opportunities.</para>

<para>In addition to labor, a substantial amount of capital has been drawn to the U.S. health care system. The number of nursing home beds increased from about 1.3 million in 1976 to about 1.7 million in 2013. The number of short-term hospital beds (as distinguished from nursing homes) peaked in the late 1970s, at almost 1.5 million, but the total number has since leveled at approximately 915,000 by 2013. There are also considerable and growing amounts of other capital—such as diagnostic equipment—per bed.</para></section>

<table id="ch01table03a" label="1-3A" float="1" frame="none" prefix="Table"><title id="ch01table03a.title"><inst>

<table id="ch01table04b" label="1-3B" float="1" frame="none" prefix="Table"><title id="ch01table04b.title"><inst>**Table 1-3**</inst>**Active Health Personnel and Number per 100,000 Population (in Parentheses)**</title><tgroup cols="6" colsep="0" rowsep="0" align="left"><colspec colnum="1" colname="c1" align="left" colwidth="150"/><colspec colnum="2" colname="c2" align="left" colwidth="50"/><colspec colnum="3" colname="c3" align="left" colwidth="50"/><colspec colnum="4" colname="c4" align="left" colwidth="50"/><colspec colnum="5" colname="c5" align="left" colwidth="50"/><colspec colnum="6" colname="c6" align="left" colwidth="50"/><spanspec spanname="s1" namest="c1" nameend="c6" align="left"/>

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| <thead><row><entry><para></para></entry> <row><entry valign="top"><para>**Occupation**</para></entry> | <entry valign="top"><para>**1970**  </para></entry> <entry valign="top"><para>**Total**</para></entry> | <entry valign="top"><para>**1980**  </para></entry> <entry valign="top"><para>**Total**</para></entry> | <entry valign="top"><para>**1990**  </para></entry> <entry valign="top"><para>**Total**</para></entry> | <entry valign="top"><para>**2000**  </para></entry> <entry valign="top"><para>**Total**</para></entry> | <entry valign="top"><para>**2013**  </para></entry></row> <entry valign="top"><para>**Total**</para></entry></row></thead> |
| <tbody><row><entry valign="top"><para>Physicians </para></entry> | <entry valign="top"><para>334,028 (164)</para></entry> | <entry valign="top"><para>467,679 (206)</para></entry> | <entry valign="top"><para> 615,421 (247)</para></entry> | <entry valign="top"><para>813,770 (289)</para></entry> | <entry valign="top"><para>1,045,910(330)</para></entry></row> |
| <row><entry valign="top"><para>Licensed Practical and  Licensed Vocational Nurses</para></entry> | <entry valign="top"><para>—</para></entry> | <entry valign="top"><para>—</para></entry> | <entry valign="top"><para>—</para></entry> | <entry valign="top"><para>679,470 (241)</para></entry> | 705,200 (223)<entry valign="top"><para></para></entry></row> |
| <row><entry valign="top"><para>Registered Nurses</para></entry> | <entry valign="top"><para>750,000 (369)</para></entry> | <entry valign="top"><para>1,272,900 (562)</para></entry> | <entry valign="top"><para>1,789,600 (720)</para></entry> | <entry valign="top"><para>2,189,670 (778)</para></entry> | <entry valign="top"><para>2,661,890 (841)</para></entry></row> |
| <row><entry valign="top"><para>Pharmacists</para></entry> | <entry valign="top"><para>112,750 (55)</para></entry> | <entry valign="top"><para>142,780 (63)</para></entry> | <entry valign="top"><para>161,900 (65)</para></entry> | <entry valign="top"><para>212,660 (76)</para></entry> | <entry valign="top"><para>287,420 (91)</para></entry></row> |
| <row><entry valign="top"><para>U.S Population</para></entry> | <entry valign="top"><para>203,302,031</para></entry> | <entry valign="top"><para>226,542,199</para></entry> | <entry valign="top"><para>248,709,873</para></entry> | <entry valign="top"><para>281,421,906</para></entry> | <entry valign="top"><para>316,799,000</para></entry></row> |

<row class="6" role="tfoot"><entry spanname="s1"><source>*Source:* U.S. Department of Health and Human Services, <emphasis>*Health United States*</emphasis>, Various Years.</source></entry></row></tbody></tgroup></table>

<section id="ch01lev2sec6"><title id="ch01lev2sec6.title">**Time—The Ultimate Resource</title>**

<para>Data on health care expenses and labor and capital inputs reflect only some of the items used by people to produce health. Inputs that are not bought and sold in the marketplace are also important. These include peoples’ own contributions of time and effort in producing health care and entail real costs to society.</para>

<para>For example, when people use their own time to produce better health for themselves, or for loved ones as caregivers, the cost to the individuals and society is the value of the leisure that they forego. Adults who are taking care of their elderly parents for two hours per day, seven days per week, provide care that might otherwise have to be purchased in the market for $15 per hour or more. In this simple illustration, the caregivers provide care worth over $10,500 per year. Though such examples are not necessarily the population norm, these time costs must be added to our measured health care costs.</para>

<para>We have stressed inputs, but the contribution of health resources to the economy is ultimately a measure of the value of the output—health itself. We measure the values of improvements to our health in both consumption and production. We value health both for its own sake and for its contribution to the production of other goods. The intrinsic value of being healthy is ultimately the value we attach to life and limb, which people commonly describe as infinite in certain circumstances, and at least substantial in others. The value of health in the production of other goods is exemplified not just in reduced absenteeism rates but also in output per worker on the job. In both its consumption and production aspects, the output of the health sector makes a substantial contribution to the economy.</para></section>

<section id="ch01lev2sec7"><title id="ch01lev2sec7.title">**The Importance Attached to Economic Problems of Health Care Delivery</title>**

<para>The health sector receives attention from policymakers because of its widely perceived problems. The substantial resources devoted to health care are reflected in a more meaningful way through the average level of the nation’s spending for health care. <link linkend="ch01table05" preference="0" type="forward">Table <xref linkend="ch01table05" label="1-4"><inst>1-4</inst></xref></link> provides various measures of health care spending and its growth since 1960.</para>

<para><link linkend="ch01table05" preference="1" type="forward">Table <xref linkend="ch01table05" label="1-4"><inst>1-4</inst></xref></link> shows how national health expenditures (NHE) grew from $27 billion in 1960 to $3,031 billion in 2014. From 1960, the U.S. population grew from 186 million to 318 million by 2014. Thus, NHE per capita rose from $146 in 1960 to $9,523 in 2014.</para>

<para>However, the real increase is what matters most. Prices, as measured by the broad-based consumer price index (CPI), rose by over 700 percent over the same period. After deflating by the CPI, we find that real expenditures per capita in 2014 were 8.16 times the 1960 level—still a hefty increase[[1]](#footnote-2).<footnoteref preference="1" label="1" role="generated" linkend="ch01fn01"/>

</para></section

**Table 1-4** **National Health Expenditures and Other Data for Selected Years**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | NHE ($billion) | % Growth in NHE over Previous Year | GDP ($billion) | NHE per Capita | NHE % GDP | CPI | Hospital + Related Services Price Index | Physician Services Price Index |
| 1960 | 27.2 |  | 543 | 146 | 5.0 | 29.6 |  | 21.9 |
| 1970 | 74.6 | 13.2% | 1,076 | 355 | 6.9 | 38.8 |  | 34.5 |
| 1980 | 255.3 | 15.3% | 2,863 | 1,108 | 8.9 | 82.4 | 69.2 | 76.5 |
| 1990 | 721.4 | 11.9% | 5,980 | 2,843 | 12.1 | 130.7 | 178.0 | 160.8 |
| 2000 | 1,369.7 | 7.2% | 10,285 | 4,857 | 13.3 | 172.2 | 317.3 | 244.7 |
| 2005 | 2,024.5 | 6.7% | 13,094 | 6,856 | 15.5 | 195.3 | 439.9 | 287.5 |
| 2010 | 2,595.7 | 4.0% | 14,964 | 8,402 | 17.3 | 218.1 | 621.2 | 334.1 |
| 2011 | 2,696.6 | 3.9% | 15,518 | 8,666 | 17.4 | 224.9 | 653.8 | 343.0 |
| 2012 | 2,799.0 | 3.8% | 16,155 | 8,927 | 17.3 | 229.6 | 684.0 | 349.9 |
| 2013 | 2,879.9 | 2.9% | 16,663 | 9,115 | 17.3 | 233.0 | 701.9 | 356.5 |
| 2014 | 3,031.3 | 5.3% | 17,348 | 9,523 | 17.5 | 236.7 | 743.2 | 361.7 |

Sources:

*NHE and GDP data*: Centers for Medicare and Medicaid Services, NHE Summary Including Share of GDP, CY 1960-2014, <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>, accessed August 2016.

*CPI (1960-2014) and price indices (2010-2014*: Bureau of Labor Statistics, CPI Detailed Report - June 2016, Tables 24 and 25, <http://www.bls.gov/cpi/cpid1606.pdf>, accessed August 2016.

*Price indices (1960-2005)*: U.S. Department of Commerce, Statistical Abstract of the United States, 2012, Table 142 – Consumer Price Indexes of Medical Care Prices 1980 to 2010, <http://www2.census.gov/library/publications/2011/compendia/statab/131ed/2012-statab.pdf>, accessed August 2016.<section id="ch01lev2sec8"><title id="ch01lev2sec8.title">**Inflation</title>**

<para>Although we have deflated the spending values using the CPI, medical care prices have grown faster historically than prices overall. <link linkend="ch01table05" preference="0" type="backward">Table <xref linkend="ch01table05" label="1-4"><inst>1-4</inst></xref></link> also shows the pattern of health care inflation since 1960. Note that hospital and physician care prices have risen much faster than the CPI—a phenomenon that is typical of other health care services and commodities as well. </para>

<para>Medical price inflation is a common problem for maintaining health programs, and it has spurred numerous cost-containment efforts by the government. Understanding and evaluating the effects of such measures are important tasks for the health economist.</para></section>

<section id="ch01lev2sec9"><title id="ch01lev2sec9.title">**Access</title>**

<para>For many, the rising costs significantly reduce accessibility to health care. Financial affordability influences demand for most goods and services, and there are many reasons why some people do not have health insurance. What is clear is that the number of uninsured has fallen in response to the Affordable Care Act of 2010. From 2010 to 2016, the uninsured number fell by 20 million people in the United States[[2]](#footnote-3). The ACA is a form of national health insurance. Later in this book, we will examine several broad groups of plans, the national health insurance programs that exist in other countries, and the newly established ACA. </para></section>

<section id="ch01lev2sec10"><title id="ch01lev2sec10.title">**Quality</title>**

<para>Increases in the quality of care contribute to spending increases. Often, the focus is on ensuring quality through professional licensure and certification and, especially for hospitals, through quality-assurance programs. At the same time, concerns arise about access to high-quality care, and they are not limited to those without insurance or with minimal insurance. Other observers, however, express concerns that the quality of care in the United States is often excessive, especially for some “high-tech” treatments. For such treatments, the resource costs may exceed the benefits to patients. The interplay among insurance, technology, and consumption is of major interest to economists.</para></section>

<section id="ch01lev2sec11"><title id="ch01lev2sec11.title">**The Economic Side to Other Health Issues</title>**

<para>Production, costs, and insurance naturally involve economics, but many other health issues have economic components, even though they may seem to be purely medical concerns. A few examples illustrate this point.</para>

<para>The choice of a health care treatment seems purely medical to many people, but physicians and other providers increasingly believe in evaluating and comparing alternative treatments on economic grounds. It is necessary to examine the costs of alternative techniques. Physicians are also increasingly sensitive to the economic side of the patient-physician relationship. The patient’s preferences are considered valid in determining the appropriateness of a given treatment.</para>

<para>We also must explore the economic reasons behind people’s health choices. People take care of themselves well at some times and poorly at other times. People’s desired health status can be understood as a meaningful economic choice. Even addiction to a relatively benign substance such as caffeine or a harmful substance such as methamphetamine can be understood better when analyzed as a possibly rational economic choice. Other health issues clearly have an economic aspect: What role should the government play in health? What health care investments should a developing country make? Should cigarette advertising be banned? Questions like these are not solely economic; but they have an economic side.</para></section></section>

<section id="ch01lev1sec3"><title id="ch01lev1sec3.title">**Economic Methods and Examples of Analysis**</title>

<para>We have already provided a formal definition of health economics as “the study of the allocation of resources to and within the health economy.” From another perspective, however, health economics is what economists actually do and how they apply economics to health. Economists in practice use certain characteristic approaches to their analyses of the world.</para>

<section id="ch01lev2sec12"><title id="ch01lev2sec12.title">**Features of Economic Analysis</title>**

<para>Many distinctive features of economics might be exhaustively identified, but we emphasize four:</para>

<orderedlist numeration="arabic" spacing="normal" inheritnum="ignore" continuation="restarts"><listitem><para><inst> 1. </inst>Scarcity of societal resources</para></listitem>

<listitem><para><inst> 2. </inst>Assumption of rational decision making</para></listitem>

<listitem><para><inst> 3. </inst>Concept of marginal analysis</para></listitem>

<listitem><para><inst> 4. </inst>Use of economic models</para></listitem></orderedlist>

**<section id="ch01lev3sec1"><title id="ch01lev3sec1.title">Scarcity of Resources**</title><para><inst>  </inst>Economic analysis is based on the premise that individuals must give up some of one resource in order to get some of another. At the national level, this means that increasing shares of GDP going to health care ultimately imply decreasing shares available for other uses. The “opportunity cost” of (what we give up to get) health care may be substantial.</para>

<para>While most people will recognize the money costs of goods and services, economists view time as the ultimate scarce resource. Individuals sell their time for wages, and many individuals will refuse overtime work even if offered more than their normal wage rate—because “it’s not worth it.” Similarly, many will pass up “free” health care because the travel and waiting time costs are too high.</para></section>

<section id="ch01lev3sec2"><title id="ch01lev3sec2.title">**Rational Decision Making**</title><para><inst>  </inst>Economists typically approach problems of human economic behavior by assuming that the decision maker is a rational being. We define rationality as “making choices that best further one’s own ends given one’s resource constraints.” Some behaviors may appear irrational. However, when disputes over rationality arise, economists often attempt to point out, perhaps with some delight, that so-called irrational behavior often makes sense when the incentives facing the decision maker are properly understood.</para></section>

<section id="ch01lev3sec3"><title id="ch01lev3sec3.title">**Marginal Analysis**</title><para><inst>  </inst>Mainstream economic analyses feature reasoning at the margin. To make an appropriate choice, decision makers must understand the cost as well as the benefit of the next, or marginal, unit. Marginal analysis often entails the mental experiment of trading off the incremental costs against the incremental benefits at the margin.</para>

<para>A prime example involves the purchase of brand-name drugs. Patients’ decisions to buy brand-name drugs, particularly for elective treatments, may depend critically on whether they must pay $2 or $3 per pill, or, instead, a fraction of those amounts if prescription drug insurance is available.</para></section>

<section id="ch01lev3sec4"><title id="ch01lev3sec4.title">**Use of Models**</title><para><inst>  </inst>Finally, economics characteristically develops models to depict its subject matter. The models may be described in words, graphs, or mathematics. This text features words and graphs. Any model can be pushed too far and must be tested against a sense of reality and ultimately against the facts. Nonetheless, they can be apt, and we can learn from them.</para>

Economic <para>Economimodels are often abstract. Abstract models help to make sense of the world, in economics as in everyday life. A young child asking what the solar system is like will undoubtedly be shown the familiar drawing of the Sun and planets in their orbits—an abstract model. The drawing is quickly grasped, yet no one supposes that the sky really looks like this.</para></section></section>

Two Notable Contributors to Health Economics

If health care markets were very similar to other markets there would be no need for a field called Health Economics. What made this field arise and grow? The defining and distinctive characteristics of the health economy were seen in a seminal work by Kenneth Arrow published in 1963. His exceptional ability in mathematical economics earned him the Nobel Prize in 1972. But his clear thinking about health care markets provided a starting point for Health Economics. This paper, “Uncertainty and the Welfare Economics of Medical Care”, examined how the health care markets differed.

In many endeavors we face win/loss gambles where risks are identified with known probabilities. Arrow pointed out that health outcomes are difficult to predict and may even be difficult to attribute to past behaviors and care. These facts make it complicated to develop markets for risk sharing, and needed insurance markets may fail to develop. To overcome this, partly, health care markets may rely on institutional norms and other institutions such as licensure. The superior knowledge of the physician is relied on as a matter of trust. We must also trust the physician not to base his medical decisions on his own options for profit. The societal norm developed that physicians must remain above such base concerns.

We may say today “So what?”, we know all this stuff don’t we? Yes, Arrow’s insights permeate the thinking of every health economist. But these and his related insights are true, and they make it impossible to see health care markets as just the same as market for things like “widgets” or ketchup. In consequence this new field has grown and matured.

Amy Finkelstein at MIT has become a preeminent student of health insurance markets, especially Medicare and Medicaid (but also long term care insurance). Her work created novel theories of choice under risk, but she also conducted large scale empirical work that fits her theories exceptionaly well. An indication of its importance and respect within the wider economics profession is that Finkelstein was awarded the J.B. Clark medal in 2012 for the outstanding economist under the age of 40. Her work has appeared frequently in the best economic journals. She addresses the effect of government insurance programs.

In recent years she has joined with several others to investigate a rich natural experiment in which the State of Oregon gave Medicaid to new recipients on a randomized basis, ideal for scientific research (Finkelstein et al. (2012), Baiker, et al. (2013), Taubman et al. (2014) ) These data are “rich” because Oregon gave Medicaid access to new recipients on a randomized basis, ideal for scientific research. In short, Medicaid helps recipients to avoid financial disaster. There was also a decline in depression scoring and greater diagnoses of diabetes. More results will become clear as the progress on the study continues.

<section id="ch01lev1sec4"><title id="ch01lev1sec4.title">**Does Economics Apply to Health and Health Care?**</title>

<para>Many observers complain that economics is irrelevant to the study of health. This issue is raised often enough in serious contexts to require consideration. The complaint suggests a model of health care in which health is primarily a technical issue of medical science, better left to experts. One gets sick and one sees a doctor, who provides the medically appropriate treatment.</para>

<para>If economics studies how scarce resources are used to produce goods and services and then how these goods and services are distributed, then clearly economics applies. Certainly health care resources are scarce; in fact, their cost concerns most people. There is no question that health care is produced and distributed.</para>

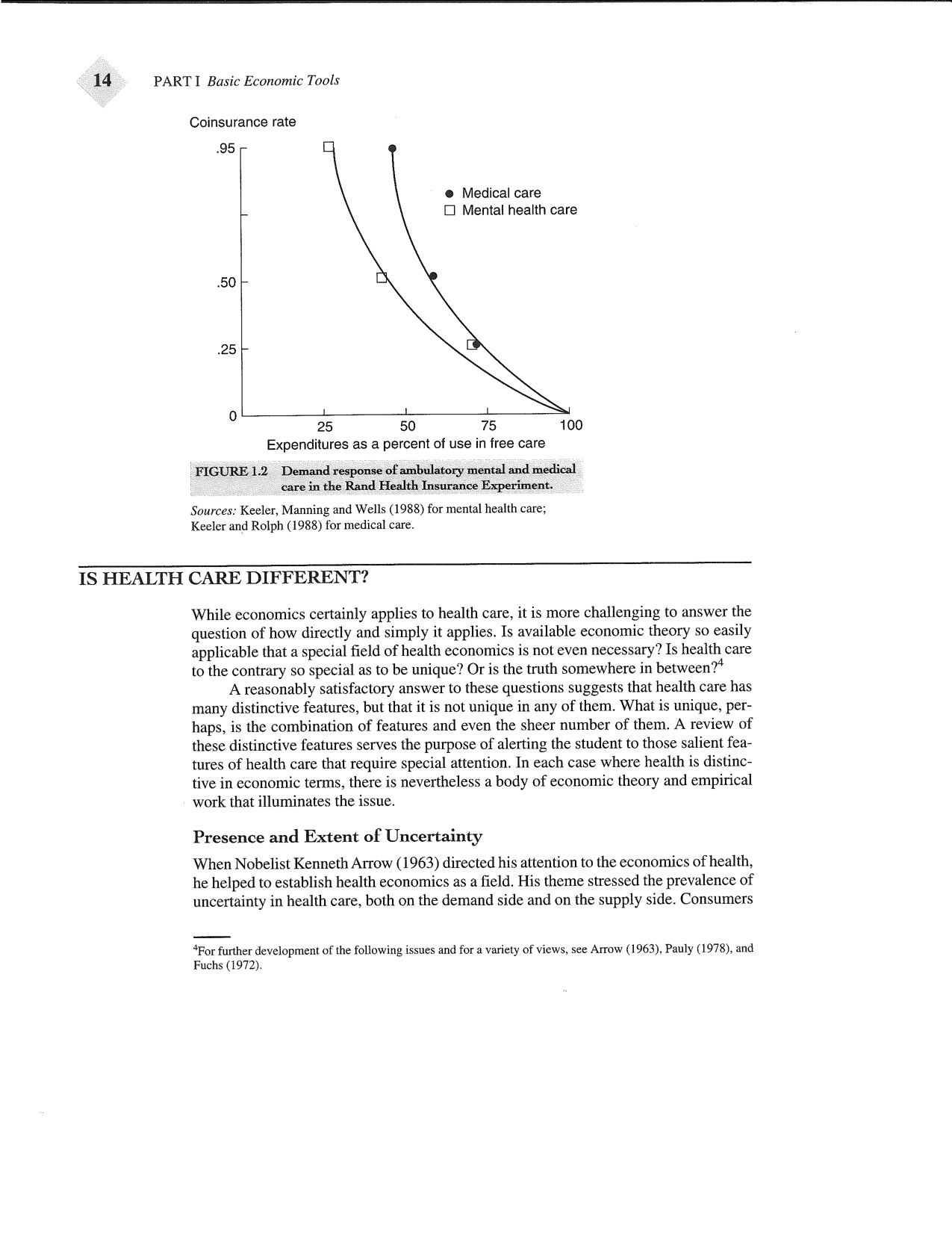
<para>Nevertheless, one can question whether the characteristic approaches of economics apply to health care. Are health care consumers rational? Do they calculate optimally at the margin? Imagine a loved one suffering cardiac arrest. Is there time or reasoning power left to calculate? Would anyone question the price of emergency services under such circumstances?</para>

<para>However, much of health care simply does not fit this emergency image. A considerable amount of health care is elective, meaning that patients have and will perceive some choice over whether and when to have the diagnostics or treatment involved. Much health care is even routine, involving problems such as upper respiratory infections, back pain, and diagnostic checkups. The patient often has prior experience with these concerns. Furthermore, even in a real emergency, consumers have agents to make or help make decisions on their behalf. Traditionally physicians have served as agents and more recently, care managers have also entered the process. Thus, rational choices can be made.</para>

<section id="ch01lev2sec14"><title id="ch01lev2sec14.title">**An Example: Does Price Matter?</title>**

<para>Does price matter? Many have argued that health care is so different from other goods that consumers do not respond to financial incentives. These views have been justified by arguments that demand is based on need, or arguments that patients leave decisions entirely to their providers, who are concerned with their own interests rather than how much patients have to pay.</para>

<para>Data from the RAND Health Insurance Experiment, a pioneering project of the 1970s that examined consumer choices and health outcomes resulting from alternative insurance arrangements, give an unequivocal answer to this question: Yes, economic incentives matter. <link linkend="fg01\_00200" preference="1" type="forward">Figure <xref linkend="fg01\_00200" label="1-2"><inst>1-2</inst></xref></link> examines the use of ambulatory mental health and medical care where amounts of health care consumed are measured along the horizontal axis. These amounts are scaled in percentage terms from zero to 100 percent, where 100 percent reflects the average level of care consumed by the group that used the most care on average. This group, not surprisingly, is the group with “free” care. The vertical axis measures the economic incentives as indicated by the coinsurance rate—the percentage of the bill paid out directly by the consumer. Thus, a higher coinsurance rate reflects a higher price to the consumer.



**Figure 1-2:** Demand response of ambulatory mental and medical care in the Rand Health Insurance Experiment. *Sources*: Keeler, Manning and Wells (1988) for mental health care; Keeler and Rolph (1988) for medical care.

</para></para>

<para>The curve shown in <link linkend="fg01\_00200" preference="0" type="backward">Figure <xref linkend="fg01\_00200" label="1-2"><inst>1-2</inst></xref></link> is similar to an economist’s demand curve in that it shows people consuming more care as the care becomes less costly in terms of dollars paid out-of-pocket. More importantly, the curve demonstrates that economic incentives do matter. Those facing higher prices demand less care.</para></section></section>

<section id="ch01lev1sec5"><title id="ch01lev1sec5.title">**Is Health Care Different?**</title>

<para>Although economics certainly applies to health care, it is more challenging to answer the question of how directly and simply it applies. Is economic theory so easily applicable that a special field of health economics is not even necessary? Is health care so special as to be unique? Or is the truth somewhere in between?</para>

<para>We argue that health care has many distinctive features, but that it is not unique in any of them. What is unique, perhaps, is the combination of features and even the sheer number of them. We review these distinctive features to alert students as to those salient features of health care that require special attention. In each case where health is distinctive in economic terms, a body of economic theory and empirical work illuminates the issue.</para>

<section id="ch01lev2sec15"><title id="ch01lev2sec15.title">**Presence and Extent of Uncertainty</title>**

<para>When Arrow directed his attention to the economics of health, he helped establish health economics as a field. He stressed the prevalence of uncertainty in health care, on both the demand side and the supply side. Consumers are uncertain of their health status and need for health care in any coming period. This means that the demand for health care is irregular in nature from the individual’s perspective; likewise, the demand facing a health care firm is irregular.</para>

<para>Uncertainty is also prevalent on the supply side. Standard economic analysis often assumes that products, and the pleasures that they bring, are well understood by the purchasers. The purchase of steak, milk, new clothes, or a ticket to a basketball game provides expected well-being that is easily known and understood. In contrast, several cases of product uncertainty exist in the health field. Consumers often do not know the expected outcomes of various treatments without physicians’ advice, and in many cases physicians themselves cannot predict the outcomes of treatments with certainty.</para>

<section id="ch01lev2sec16"><title id="ch01lev2sec16.title">**Prominence of Insurance</title>**

<para>Consumers purchase insurance to guard against this uncertainty and risk. Because we have health insurance, neither most Americans nor citizens of other countries pay directly for the full costs of their health care. Rather, the costs are paid indirectly through coinsurance and through insurance premiums that are often, although not always, purchased through participation in the labor force.</para>

<table id="ch01table06" label="1-5" float="1" frame="none" prefix="Table"><title id="ch01table06.title"><inst>**Table 1-5**</inst>**Personal Health Care Spending, Selected Years (in $ Billions)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Total**  **Spending** | **Health**  **Insurance** | **Health Insurance** | | | | **Other Third Party**  **Payers** | **Out of Pocket** | **% Out of Pocket** |
| **Private Health**  **Insurance** | **Medicare** | **Medicaid** | **Other Health**  **Insurance Programs** |
| 1960 | 23.4 |  | 5.0 |  |  |  | 5.5 | 12.9 | 55.1 |
| 1970 | 63.1 | 29.6 | 14.1 | 7.3 | 5.0 | 3.3 | 8.5 | 25.0 | 39.6 |
| 1980 | 217.0 | 132.1 | 61.5 | 36.3 | 24.7 | 9.6 | 26.7 | 58.1 | 26.8 |
| 1990 | 615.3 | 402.9 | 204.8 | 107.3 | 69.7 | 21.2 | 74.5 | 137.9 | 22.4 |
| 2000 | 1,162.0 | 844.2 | 406.1 | 216.3 | 186.9 | 34.9 | 118.9 | 199.0 | 17.1 |
| 2010 | 2,194.1 | 1,700.5 | 754.8 | 489.8 | 365.7 | 90.2 | 194.1 | 299.5 | 13.6 |
| 2011 | 2,280.4 | 1,772.1 | 790.6 | 513.4 | 373.6 | 94.6 | 198.6 | 309.7 | 13.6 |
| 2012 | 2,371.8 | 1,841.6 | 822.0 | 534.8 | 387.8 | 97.1 | 211.5 | 318.7 | 13.4 |
| 2013 | 2,441.3 | 1,893.7 | 834.6 | 551.2 | 407.7 | 100.2 | 222.1 | 325.5 | 13.3 |
| 2014 | 2,563.6 | 2,000.3 | 868.8 | 580.7 | 444.9 | 105.9 | 233.5 | 329.8 | 12.9 |

Total spending is equal to the sum of health insurance, other third party payers and out of pocket.

Health Insurance is equal to the sum of private health insurance, Medicare, Medicaid and other health insurance programs

*Sources*:

Centers for Medicare and Medicaid Services, NHE Tables, Table 6 - Personal Health Care Expenditures1; Levels, Percent Change, and Percent Distribution, by Source of Funds: Selected Calendar Years 1970-2014, <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>, accessed August 2016.

Values for 1960 from <emphasis>*Health United States*</emphasis>, 2005, <link olinkend="ch01" preference="0">Table <xref olinkend="ch01" label="123"><inst>123</inst></xref></link>.</source></entry></row></tbody></tgroup></table>

<para><link linkend="ch01table06" preference="1" type="forward">Table <xref linkend="ch01table06" label="1-5"><inst>1-5</inst></xref></link> provides data on the sources of payment for personal health care services for selected years since 1960. In addition to out-of-pocket costs, these payment sources include private insurance; Medicare and Medicaid (the major government programs for the elderly and certain lower income households); and other public and private programs. In 1960, 55 percent of all personal health care expenditures were paid out-of-pocket, meaning that 45 percent was paid by third-party payers (either private or government). Out-of-pocket costs dropped dramatically following the introduction of Medicare and Medicaid in 1966, the continued growth of private insurance, and the introduction of new programs such as the Childrens’ Health Insurance Program (CHIP) established in 1997.</para>

<para>By 2014, 88 percent of personal health care spending was paid by third parties. We will carefully study this phenomenon and its effects for both private and public insurance. It should be clear, even prior to our focused analyses, that the separation of spending from the direct payment for care must weaken some of the price effects that might be expected in standard economic analysis. Insurance changes the demand for care, and it potentially also changes the incentives facing providers.</para>

<para>Changed incentives that face providers concern us more as the insurance portion of the bill increases. How the insurers pay the health care firm thus becomes a critical fact of economic life. Whether insurers cover a procedure, or a professional’s services, may determine whether providers use the procedure.</para>

<para>Furthermore, changes in insurance payment procedures can substantially change provider behavior and provider concerns. In the 1980s Medicare, faced with rapidly increasing expenditures, changed its hospital payment system from one based largely on costs (i.e., retrospective reimbursement) to one with fixed payments per admission determined by the resources typically used to treat the medical condition (as classified by Diagnosis Related Groups, or DRGs). With a prospective DRG payment system, an extra day of care suddenly added to the hospital’s costs, rather than to its revenues. This reimbursement system, still used today, led to shorter stays, reduced demand for hospital beds, and ultimately the reduction in size and/or closing down of many hospitals.</para></section>

<section id="ch01lev2sec17"><title id="ch01lev2sec17.title">**Problems of Information</title>**

<para>Uncertainty can in part be attributed to lack of information. Actual and potential information problems in health care markets raise many economic questions. Sometimes information is unavailable to all parties concerned. For example, neither gynecologists nor their patients may recognize the early stages of cervical cancer without Pap smears. At other times, the information in question is known to some parties but not to all, and then it is the asymmetry of information that is problematic.</para>

<para>The problems of information mean that careful economic analysts must modify their methods. Standard analyses often assume that consumers have the necessary knowledge about the quality of the food or the clothing that they purchase. People purchase beef as opposed to fish, or cotton as opposed to nylon fabrics, basing their decisions on the characteristics of the goods, their prices, and the goods’ abilities to bring pleasure.</para>

<para>Health goods and services depart substantively from this model. Consumers may not know which physicians or hospitals are good, capable, or even competent. Consumers may not know whether they themselves are ill or what should be done if they are. This lack of information often makes an individual consumer, sometimes referred to as the <emphasis>*principal,*</emphasis> dependent on the provider, as an <emphasis>*agent,*</emphasis> in a particular way. The provider offers both the information and the service, leading to the possibility of conflicting interests. Newhouse (2002), for example, speaks of a health care “quality chasm” that may be traced to both inadequate consumer information and to inadequate financial incentives. Health economics must address the provision of health services in this context.</para></section>

<section id="ch01lev2sec18"><title id="ch01lev2sec18.title">**Large Role of Nonprofit Firms</title>**

<para>Economists often assume that firms maximize profits. Economic theory provides models that explain how businesses allocate resources in order to maximize profits. Yet many health care providers, including many hospitals, insurers, and nursing homes, have nonprofit status.</para>

<para>What, then, motivates these nonprofit institutions if they cannot enjoy the profits of their endeavors? The economist must analyze the establishment and perpetuation of nonprofit institutions, and understand the differences in their behaviors from for-profit firms. This problem has recently emerged in the context of academic medical centers in the United States. Many current college students, and most certainly their parents and grandparents, know of the prominent roles of great hospitals affiliated with great universities such as Harvard or Johns Hopkins. The public and the larger medical community are aware of the major hospitals as centers of health care, teaching, and research. Yet with the changing health economics of the twenty-first century, the organization of these hospitals and the funding of their activities are continuously evolving.</para></section>

<section id="ch01lev2sec19"><title id="ch01lev2sec19.title">**Restrictions on Competition</title>**

<para>Economists and policymakers generally laud the competitive market because the entry of firms or providers in the face of high prices and/or profits will cause the other firms or providers to lower their prices. This entry and the resulting price reduction improve the well-being of consumers.</para>

<para>Nevertheless, the health sector has developed many practices that effectively restrict competition. These practices include licensure requirements for providers, restrictions on provider advertising, and standards of ethical behavior that enjoin providers from competing with each other. We must explain the forces that generated such practices and understand their potential benefits, but we must also understand their anticompetitive impacts and measure the magnitudes of the higher costs they may impose on society.</para>

<para>Regulation to promote quality or to curb costs also reduces the freedom of choice of providers and may influence competition. There is often substantial interest in regulating the health care sector. The causes, as well as the impacts, of the regulations require considerable attention. The pharmaceutical industry, for example, contends that patent protection is crucial for its financial stability. Economists must consider how regulations are developed, as well as who gains and who loses from them.</para>

<section id="ch01lev2sec20"><title id="ch01lev2sec20.title">**Role of Equity and Need</title>**

<para>Poor health of another human being often evokes a feeling of concern that distinguishes health care from many other goods and services. Many advocates express this feeling by saying that people ought to get the health care they need regardless of whether they can afford it. In practice, “need” is difficult to define, and distributing care under certain definitions of need may cause more economic harm than good. Yet the word signals a set of legitimate concerns for analysis.</para></section>

<section id="ch01lev2sec21"><title id="ch01lev2sec21.title">**Government Subsidies and Public Provision</title>**

<para>In most countries, the government plays a major role in the provision or financing of health services. In the United States in 2014, Medicare and Medicaid alone accounted for 40 percent of personal health care spending. However, there are many other government programs, both federal and state and local, including those for public health, military veterans, eligible children, and for mental health and substance abuse. Federal government subsidies are also prominent in the ACA by making insurance coverage more affordable for low and moderate income households. </para>

<section id="ch01lev1sec6"><title id="ch01lev1sec6.title">**Conclusions**</title>

In this introductory chapter we have sought to explain and support several themes. One is that health and health care markets present a combination of unusual features that together form a unique discipline. Health economists frequently engage in companion disciplines, such as labor economics, public finance, and industrial organization, and recognize that each presents distinctive issues. Health care markets confront risk and uncertainty with unusual information problems. Health professionals have substantial knowledge advantages over their patients. Society norms regarding health and health care make nonprofit motives often preferred, and government provision prominent. Back in the 1960s and 1970s, few economists wrote about health care issues, but now some of the most distinguished economic researchers call themselves “health economists”.

Second we have explored the fact that the health economy is “big”, so big it is imposing. Nearly18 per cent of GDP in the United States goes to the health sector. Until very recently health care inflation has risen rapidly raising the question of whether it will begin to gallup again. Prices for health care have grown much more rapidly than the consumer prices generally, presenting difficulty for people of modest means to get access. Prior to the ACA, insurance companies often avoided high risk beneficiaries by denying those with preexisting conditions from buying insurance or by denying them policy renewals.

Finally we have examined the standard methods of economic analysis and suggested how they must be modified to address the characteristics of health and health care markets. While full information is often assumed in introductory microeconomics, it may be asymmetric in health in health insurance markets or even imperfect on both sides. Ordinary firms are often for-profit, while health market norms often prefer nonprofits. A CEO of a business is typical praised for seeking greater profits, while a health professional who does so may not be trusted. And, health economists must study “health bads”, where the reduction of the amount consumed is considered an improvement.

The many chapters that follow address these issues. They focus on the ideas, that is the theories, and they describe the empirical work that assesses how well the theories work in reality. These are organized by standard economic categories of demand and supply but also by the relevant health care markets and salient issues of health eEconomics.

The biggest and most important health care issues in America is the Affordable Care Act (ACA), often called “Obamacare”. It rivals Medicare and Medicaid in the United States in terms of size and impacts of the reforms . The ACA’s principal goal is to reduce the number of people lacking health insurance, which had risen to 50 million people. ~~It~~ The ACA also introduced many other reforms that will be described and evaluated in our Health System Reform chapter (22) and elsewhere in the text.

<para>What can economics say about such issues generally? Distinguished economist Victor Fuchs, a past president of the American Economic Association, is optimistic that health economics will meet these challenges and continue to flourish.</para>

<extract><para>The greatest strengths of economics and economists are a framework of systematic theory, an array of concepts and questions that are particularly relevant to the choices facing policy makers, and skill in drawing inferences from imperfect data. Because health economists often take standard economic theory for granted (like being able to walk or talk), it is easy to underestimate the advantage this framework offers economics over the other social and behavioral sciences. When economists encounter a new problem, one with which they have had no previous experience, they immediately have a way to begin thinking about it long before data collection begins. Scholars in the other ‘‘policy sciences’’ do not. They typically require some detailed knowledge of the particular problem before they can begin to think productively about it. Economists’ framework of systematic theory facilitates the transfer of knowledge drawn from other fields of study to the health field.</para>

<para>Health economists have also inherited from economics a set of concepts and questions that have proven to be particularly relevant to the policy problems that have emerged in health during the past three decades. Scarcity, substitution, incentives, marginal analysis, and the like were ‘‘just what the doctor ordered,” although in many cases the ‘‘patient’’ found the medicine bitter and failed to follow the prescribed advice. (Fuchs, 2000, p. 148)</para></extract>

<para>Professor Fuchs’s insights have become even more relevant following passage of the 2010 Affordable Care Act. These reforms will bring unprecedented change, including a scheduled individual mandate for insurance coverage. We share Professor Fuchs’s optimism that the theoretical framework and tools used by economists will greatly improve our understanding of these changes and their potential effects.</para></section></section><section id="ch01lev1rm" role="rm"><title id="ch01lev1rm.title"/><summary id="ch01sum01">

<title id="ch01sum01.title">**Summary</title>**

<orderedlist numeration="arabic" spacing="normal" inheritnum="ignore" continuation="restarts"><listitem><para><inst> 1. </inst>Health care spending has grown rapidly in absolute and relative terms. In 2014, it accounted for nearly 18 percent of U.S. GDP, and its share of GDP is projected to grow.</para></listitem>

<listitem><para><inst> 2. </inst>The growth in health care spending is attributable to more services, higher-quality services, and relative increases in the prices of health care services. Health economists seek to determine the underlying causes of these phenomena.</para></listitem>

<listitem><para><inst> 3. </inst>The size of the health economy is also reflected through other measures such as the number of jobs in health care professions and amount of capital.</para></listitem>

<listitem><para><inst> 4. </inst>Time spent obtaining and providing health care represents a key “unpriced” factor in the health economy.</para></listitem>

<listitem><para><inst> 5. </inst>The health economy is considerably larger in the United States, as a share of GDP, than in other countries.</para></listitem>

<listitem><para><inst> 6. </inst>There are significant policy concerns not only with the growth of spending but also with access and quality.</para></listitem>

<listitem><para><inst> 7. </inst>Economists use models to explain economic behavior. The models are abstract simplifications of reality.</para></listitem>

<listitem><para><inst> 8. </inst>Health economists still disagree on some fundamental issues, such as the extent to which the competitive model applies to the health economy.</para></listitem>

<listitem><para><inst> 9. </inst>Health care services and the health economy possess a unique set of distinguishing features, such as the prevalence of uncertainty or insurance coverage. Health care is unique because of this entire set of features.</para></listitem>

<listitem><para><inst> 10. </inst>The health care system has changed dramatically over the past 50 years. The role of government, reimbursement methods, and the dominance of managed care represent some of the major changes. The Affordable Care Act (ACA) of 2010 is the most important recent change.</para></listitem>

<listitem><para><inst> 11. </inst>An important consequence of many of these changes is the substantial drop in out-of-pocket costs for consumers, meaning that private insurance and public programs have correspondingly grown.</para></listitem>

<listitem><para><inst> 12. </inst>Technological change through improved procedures, and new drugs, provides potential improvements in health care, but also possibilities of increasing costs, in all countries.</para></listitem>

<listitem><para><inst> 13. </inst>Economics provides valuable theoretical tools and a systematic framework for understanding the health care system and evaluating alternative policy proposals.</para></listitem></orderedlist></summary><problemset id="ch01ps01" role="qonly">

<supertitle id="ch01ps01.supertitle">**Discussion Questions</supertitle>**

<general-problem id="ch01ps01gen001" label="1" maxpoints="1"><inst> 1. </inst><question id="ch01ps01q001"><para>Suggest several reasons why health care spending is higher in the United States than in other countries. Is the fact that the U.S. population spends more per capita on health care than people in any other developed country evidence of a failure of the U.S. system? What issues do you think are involved in answering the question?</para></question></general-problem>

<general-problem id="ch01ps01gen002" label="2" maxpoints="1"><inst> 2. </inst><question id="ch01ps01q002"><para>Describe several key issues facing policymakers with regard to health care spending.</para></question></general-problem>

<general-problem id="ch01ps01gen003" label="3" maxpoints="1"><inst> 3. </inst><question id="ch01ps01q003"><para>If greater health care spending leads to more jobs, why is there such concern about the rapid growth rates of spending?</para></question></general-problem>

<general-problem id="ch01ps01gen004" label="4" maxpoints="1"><inst> 4. </inst><question id="ch01ps01q004"><para>Do consumers take the net price (including insurance and time) they face into consideration when choosing health care? What evidence suggests that price matters? Suggest real life scenarios in which price may affect choices regarding health care.</para></question></general-problem>

<general-problem id="ch01ps01gen005" label="5" maxpoints="1"><inst> 5. </inst><question id="ch01ps01q005"><para>Suppose that a woman works 40 hours per week with no opportunity for overtime. She also takes care of a sick parent. Can we say that her time has no value in providing this health care because she could not earn more at work?</para></question></general-problem>

<general-problem id="ch01ps01gen006" label="6" maxpoints="1"><inst> 6. </inst><question id="ch01ps01q006"><para>What is meant by marginal analysis? Provide an example in which marginal analysis is useful in looking at policy questions.</para></question></general-problem>

<general-problem id="ch01ps01gen007" label="7" maxpoints="1"><inst> 7. </inst><question id="ch01ps01q007"><para>Give three examples of quality of care in the provision of health services. Why might consumers be willing to pay more money to have each of them?</para></question></general-problem>

<general-problem id="ch01ps01gen008" label="8" maxpoints="1"><inst> 8. </inst><question id="ch01ps01q008"><para>Describe the size of the health economy when measured by the quantities of capital and labor used to produce health care. What important inputs to the production of health are not being counted among these?</para></question></general-problem></problemset><problemset id="ch01ps02" role="qonly">

<supertitle id="ch01ps02.supertitle">**Exercises</supertitle>**

<general-problem id="ch01ps02gen001" label="1" maxpoints="1"><inst> 1. </inst><question id="ch01ps02q001"><para>Health care spending (<emphasis>*S*</emphasis>) can be summarized by the following equation:



</para>

<orderedlist numeration="loweralpha" spacing="normal" inheritnum="ignore" continuation="restarts"><listitem><para><inst> (a) </inst>Identify three factors that might lead to the rapid growth of health care spending.</para></listitem>

<listitem><para><inst> (b) </inst>Compare health care spending to housing expenditures and to food expenditures. How are the sectors similar? How do they differ?</para></listitem></orderedlist></question></general-problem>

<general-problem id="ch01ps02gen002" label="2" maxpoints="1"><inst> 2. </inst><question id="ch01ps02q002"><para>Identify five distinctive features of the health economy. Examine each one separately, and describe other commodities or sectors that share those features. Do any other commodities or sectors have all the features you listed?</para></question></general-problem>

<general-problem id="ch01ps02gen003" label="3" maxpoints="1"><inst> 3. </inst><question id="ch01ps02q003"><para>In <link linkend="ch01table01" preference="0" type="backward">Table <xref linkend="ch01table01" label="1-1"><inst>1-1</inst></xref></link>, calculate which countries had the largest and smallest percentage increases in GDP share from 1960 to 1980. Compare these to similar calculations for the period 1980 to 2015. Discuss your results.</para></question></general-problem>

<general-problem id="ch01ps02gen004" label="4" maxpoints="1"><inst> 4. </inst><question id="ch01ps02q004"><para>The United States, Canada, and the United Kingdom share the same language but have considerably different health care systems. Compare the health shares of GDP from 1960 to 2015. What factors may explain the considerable differences among the three countries?</para></question></general-problem>

<general-problem id="ch01ps02gen005" label="5" maxpoints="1"><inst> 5. </inst><question id="ch01ps02q005"><para><link linkend="ch01table05" preference="0" type="backward">Table <xref linkend="ch01table05" label="1-4"><inst>1-4</inst></xref></link> provides indexes of the prices of health care inputs. Calculate the growth rates between 1980 and 2014 of the prices of hospital and physician services. Compare them to the growth rate of the overall consumer price index (CPI). Discuss your findings.</para></question></general-problem>

<general-problem id="ch01ps02gen006" label="6" maxpoints="1"><inst> 6. </inst><question id="ch01ps02q006"><para>In <link linkend="ch01table06" preference="0" type="backward">Table <xref linkend="ch01table06" label="1-5"><inst>1-5</inst></xref></link>, examine the private health insurance, Medicare, and Medicaid components. Which category grew the most between 1970 and 2014? Between 2000 and 2013? What factors might have led to the differences in the growth rates?</para></question></general-problem>

<general-problem id="ch01ps02gen007" label="7" maxpoints="1"><inst> 7. </inst><question id="ch01ps02q007"><para>Several Web sites provide useful information on health care and health resources use. Use a Web browser to find sites of:</para>

<itemizedlist id="ch01it02" mark="bull" spacing="normal"><listitem><para><inst> • </inst>Centers for Medicare & Medicaid Services (CMS)</para></listitem>

<listitem><para><inst> • </inst>National Institutes of Health (NIH)</para></listitem>

<listitem><para><inst> • </inst>Organization for Economic Cooperation and Development (OECD)</para></listitem>

<listitem><para><inst> • </inst>The Kaiser Family Foundation (KFF)</para></listitem>

<listitem><para><inst> • </inst>For students outside the United States, find governmental sites from your own country.</para></listitem></itemizedlist>

<para>Compare and contrast the data available from these sites.</para></question></general-problem>

<general-problem id="ch01ps02gen008" label="8" maxpoints="1"><inst> 8. </inst><question id="ch01ps02q008"><para>The following chart shows health expenditures for the United States between 1960 and 2014. Using a spreadsheet program:</para>

<orderedlist numeration="loweralpha" spacing="normal" inheritnum="ignore" continuation="restarts"><listitem><para><inst> (a) </inst>Calculate health expenditures per person for each year.</para></listitem>

<listitem><para><inst> (b) </inst>Calculate percentage increases in health expenditures per person for each year.</para></listitem>

<listitem><para><inst> (c) </inst>Can you find particular events in given years that might explain either small or large changes in the health expenditures per person or in the percentage changes?

| Year | U.S. Population  (in Millions) | National Health Expenditures  ($ in Billions) |
| --- | --- | --- |
| 1960 | 186 | 27.2 |
| 1961 | 189 | 29.1 |
| 1962 | 192 | 31.8 |
| 1963 | 195 | 34.6 |
| 1964 | 197 | 38.4 |
| 1965 | 200 | 41.9 |
| 1966 | 202 | 46.1 |
| 1967 | 204 | 51.6 |
| 1968 | 206 | 58.4 |
| 1969 | 208 | 65.9 |
| 1970 | 210 | 74.6 |
| 1971 | 213 | 82.7 |
| 1972 | 215 | 92.7 |
| 1973 | 217 | 102.8 |
| 1974 | 218 | 116.5 |
| 1975 | 220 | 133.3 |
| 1976 | 222 | 152.7 |
| 1977 | 224 | 173.9 |
| 1978 | 226 | 195.3 |
| 1979 | 228 | 221.5 |
| 1980 | 230 | 255.3 |
| 1981 | 233 | 296.2 |
| 1982 | 235 | 334.0 |
| 1983 | 237 | 367.8 |
| 1984 | 239 | 405.0 |
| 1985 | 242 | 442.9 |
| 1986 | 244 | 474.7 |
| 1987 | 246 | 516.5 |
| 1988 | 248 | 579.3 |
| 1989 | 251 | 644.8 |
| 1990 | 254 | 721.4 |
| 1991 | 257 | 788.1 |
| 1992 | 260 | 854.1 |
| 1993 | 263 | 916.6 |
| 1994 | 266 | 967.2 |
| 1995 | 268 | 1,021.6 |
| 1996 | 271 | 1,074.4 |
| 1997 | 274 | 1,135.5 |
| 1998 | 277 | 1,202.0 |
| 1999 | 279 | 1,278.3 |
| 2000 | 282 | 1,369.7 |
| 2001 | 285 | 1,486.7 |
| 2002 | 287 | 1,629.2 |
| 2003 | 290 | 1,768.2 |
| 2004 | 293 | 1,896.5 |
| 2005 | 295 | 2,024.5 |
| 2006 | 298 | 2,157.0 |
| 2007 | 301 | 2,296.2 |
| 2008 | 304 | 2,402.6 |
| 2009 | 306 | 2,496.4 |
| 2010 | 309 | 2,595.7 |
| 2011 | 311 | 2,696.6 |
| 2012 | 314 | 2,799.0 |
| 2013 | 316 | 2,879.9 |
| 2014 | 318 | 3,031.3 |

*Source*: Centers for Medicare and Medicaid Services, NHE Summary Including Share of GDP, CY 1960-2014, <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>, accessed August 2016.

1. The 8.16 multiple is determined by dividing 9,523 (2014 spending) by 236.7 (2014 CPI) and dividing the result by the corresponding ratio for 1960. National health spending updates are available at the Centers for Medicare and Medicaid Services web site – [www.cms.hhs.gov](http://www.cms.hhs.gov) [↑](#footnote-ref-2)
2. U.S. Department of Health and Human Services,

   <https://aspe.hhs.gov/sites/default/files/pdf/187551/ACA2010-2016.pdf>, accessed August 2016. [↑](#footnote-ref-3)