McKinsey Center for U.S. Health System Reform

Accounting for the cost of U.S. health care

Pre-reform trends and the impact of the recession

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Preface

“Accounting for the cost of U.S. health care” was produced by McKinsey & Company’s Center for U.S. Health System Reform. It examines healthcare expenditures in the United States from 2006 through 2009 in order to cast light on important trends in the level and rate of change in spending, as well as coverage shifts during this period. The ultimate intent of the report is to arm public, private, and social sector leaders with fact-based insights to guide informed decision making.

This is the third in a series of reports focused on healthcare spending in the United States. The previous reports compared healthcare expenditures in the U.S. to those in other economically developed countries. They demonstrated that the United States spends hundreds of billions more than would be expected – even accounting for differences in wealth and the propensity of richer countries to spend more of their income on health care. The analysis in these reports was based on a McKinsey-developed measure, “Estimated Spending According to Wealth” (ESAW). This is derived from a regression analysis of income and spending data from other countries in the Organization for Economic Cooperation and Development (OECD), and allows us to estimate how much a given country would be expected to spend on health care based on per capita gross domestic product.

The analysis in this report draws upon a number of data sources. These include healthcare spending data from the OECD as well as the National Health Expenditure Accounts and other data sets produced by the Centers for Medicare and Medicaid Services. In addition, the report makes use of analysis provided by the Lewin Group, a division of OptumInsight (formerly Ingenix). OptumInsight is a wholly owned subsidiary of UnitedHealth Group.

This research effort was led by David Knott, director of the McKinsey Center for U.S. Health System Reform, and Ed Levine, a principal in the Silicon Valley Office. The research and writing of the report was led by a team which included Beth Bafford and Jesse Bradford, both consultants in McKinsey’s Washington D.C. office; Ceci Connolly, a senior advisor in the Center for U.S. Health System Reform; and fellows Beth Parish and Nikhil Sahni. Rodney Zemmel, a director in the New York Office and leader of the Healthcare Systems and Services Practice in the Americas, provided key guidance throughout this project.

The report benefited enormously from the contributions of McKinsey’s global network of industry experts. The authors are grateful to Vishal Agrawal, Lynn Dorsey-Bleil, Bowen Garrett, Nicolaus Henke, Eric Jensen, Rik Kirkland, Paul Mango, Lenny Mendonca, Vivian Riefberg, Shubham Singhal, Saum Sutaria, and B.J. Tevelow. We are particularly indebted to Diana Farrell and Bob Kocher for their work on the preceding reports in this series and their continued input and guidance. In addition, we thank the members of McKinsey’s knowledge community who provided essential research and insight: Don Amsel, Elisabeth Eliason, Jennifer Ferrara, Rebecca Hurley, and Kathy Knauss.

A distinguished panel of academic and industry experts provided valuable perspectives and advice on the report. These include David Cutler, Otto Eckstein Professor of Applied Economics in the Department of Economics and the Kennedy School of Government at Harvard University; Paul Ginsburg, president of the Center for Studying Health System Change; Mark Pauly, Bendheim
Professor in the Department of Health Care Systems at the Wharton School of the University of Pennsylvania; Arnold Milstein, professor of Medicine and director of the Clinical Excellence Research Center at Stanford University; and Gail Wilensky, senior fellow at Project HOPE.

We would also like to thank Chris Gorman for her support throughout the project; Humphry Rolleston, Damaris O’Hanlon and Anne Smith for their contributions to communications; Elliot Cravitz and Mary Reddy for development of the related web page; and Susan Kellam for her editorial oversight.

This report draws on McKinsey’s in-depth analytical work and understanding of healthcare systems around the world. The findings and conclusions come from our research and analysis, and are informed by intensive client work with the world’s leading companies, foundations and governments. Extensive interviews with academics, executives, and government officials provided additional input. This is an independent report and has not been commissioned or sponsored in any way by any business, government, or other institution.
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$2.5 trillion
Total spending on health care in the United States in 2009

$200 billion
Reduced spending between 2006-2009 versus what would have been spent had growth continued at the pace experienced over the preceding 3 years

$572 billion
Spending on health care in 2009 above expected, based on healthcare expenditures in other developed countries and differences in per capita GDP
Executive Summary

Spending on health care in the United States is facing unprecedented public scrutiny. Cast into the spotlight by the intense debate that surrounded the passage of the Affordable Care Act (ACA), the cost of health care has since become a focal point of related debates over government spending, entitlement reform and ways to reduce the federal deficit. It is easy to see why. The United States spends more on health care, both per capita and as a share of gross domestic product, than any other country in the world. In 2009, spending on health care reached a record high $2.5 trillion, or 17.6 percent of U.S. GDP.

While record spending on health care is dominating headlines, the healthcare industry finds itself in a state of flux. Stakeholders across the healthcare economy are in peak preparation for implementation of the Affordable Care Act, while simultaneously dealing with the ongoing effects of the worst recession since the Great Depression.

This report is intended to shed light on the underlying dynamics and trends shaping the healthcare industry in this period of rapid change and uncertainty. The third in our series of papers examining healthcare spending in the United States, this analysis examines trends in healthcare spending, both overall and by category of care. It also compares healthcare expenditures in the U.S. to those in other economically developed countries, accounting for differences in wealth.

We focus on the period between 2006 and 2009 – the last year for which we have comprehensive international spending data – with an early look at U.S. spending levels in 2010. Focusing on this 3-year window allows us to examine the impact of the “Great Recession”, which ran from December 2007 to June 2009, as well as the forces shaping the healthcare landscape leading into implementation of the ACA starting in early 2010.

Findings

Our analysis reveals two critical findings. First, the U.S. has actually experienced consistent declines in the rate of spending growth for 8 consecutive years. Despite the recent attention given to healthcare spending, year-on-year growth fell from 9.5 percent in 2002 to 4.0 percent in 2009. This trend continued into 2010, with a further decline to 3.9 percent, the lowest level of spending growth in 50 years. This extends what was already the longest stretch of continuous deceleration since 1960. The recession appears to have contributed to this slowdown, marking the first time in five decades that an economic downturn has had an immediate and measurable effect on healthcare spending growth.

Notwithstanding this recent slowdown in growth, the U.S. still spends more on health care than other developed countries, even after adjusting for wealth. Our second critical finding is that healthcare spending continues to exceed expected levels by roughly the same margin that it did in 2006. As in previous reports, we have calculated expected levels of spending using a measure that we call Estimated Spending According to Wealth (ESAW). This allows us to model how much a given country would be expected to spend on health care based on per capita GDP. According to data compiled by the Organization for Economic Co-operation and Development (OECD), the United States spent two-and-one-half times more per capita on health care in 2009 than other developed nations. Even accounting for the fact that healthcare spending rises with income, we found that 23 percent of total U.S. spending was above expected levels in 2009, compared to 22 percent of spending 3 years earlier.  

While these two findings may appear to contradict one another, they simply reflect the difference between the spending trend (the rate of change over time), and the spending level (the absolute amount spent at a given point in time). We have seen a consistent decline in trend for 8 consecutive years, with annual per capita spending growth in the U.S. lower than the OECD average growth rate between 2006 and 2009. Since the American economy also grew more slowly, however, the gap between the level of spending and what would be expected based on spending patterns in other countries and differences in per capita GDP actually grew. We estimate that U.S. spending on health care in 2009 exceeded expected levels by $572 billion.

**The slowdown in spending growth**

2009 was a year of extremes for the American health economy. Marked by the highest level of healthcare spending in history – both in real terms and as a share of GDP – it also experienced historically low levels in the rate of growth. Year-on-year spending growth reached record lows in

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2 This represents a revision to the findings reported in our 2008 report based on adjustments to the data included in the analysis. Additional detail on this change and the ESAW methodology is provided in Appendix I.
2009, and again in 2010, and actually declined on a real, per capita basis in 2008. As a result of this deceleration, the U.S. spent nearly $200 billion less on health care between 2006 and 2009 than it would have had spending continued to grow at the rate experienced over the previous 3 years.

The historic slowdown in spending growth was caused by the convergence of a number of factors, including changes in benefit design, structural shifts within specific segments of the health economy, and a recession from which the U.S. economy has been slow to recover. Changes in coverage patterns and the decline in the share of the population with private insurance during the recession have also played an important role. Between 2007 and 2009, the number of people with employer-sponsored or private individual insurance fell by nearly 10 million. In 2009, the share of Americans with private insurance slipped to 64.5 percent—the lowest in 20 years of census records—while the share receiving public assistance and the percent uninsured both reached record highs.

The “Great Recession” of 2008-2009 clearly accelerated the loss of private coverage. Importantly, it appears to have dampened spending growth in other ways, as well. Unlike previous recessions, which have had a delayed and sometimes unclear effect on the health economy, the recession of 2008-2009 has had a clear and immediate impact on healthcare spending. While it is difficult to measure this impact precisely, our research shows that spending slowed on health care beyond what could be plausibly explained by pre-existing trends. We also demonstrate that the slowdown in spending during the recession cannot be explained simply by the loss of healthcare coverage. The available evidence suggests that decreased wages, diminished wealth, tightening credit and increased economic uncertainty have led to reduced consumption among the insured, as well.

Spending growth slowed in all major sectors of the health economy between 2006 and 2009, but it did so more in some segments than in others. The slowdown was most pronounced in three areas that have historically been among the fastest growing: inpatient care, pharmaceuticals, and healthcare administration and insurance.

Spending on inpatient care grew at just 3 percent per year between 2006 and 2009—almost half the growth rate experienced between 2003-2006. In 2009, spending grew by just 1.3 percent. Most of this growth was attributable to increased costs per admission, as total admissions remained nearly flat.

Spending on prescription drugs slowed from 7.9 percent annually between 2003 and 2006 to 4.4 percent between 2006 and 2009. This was due to a stabilization of enrollment in Medicare Part D prescription drug programs, as well as robust growth in the generic share of the market. In 2009, generics accounted for 68 percent of all retail prescriptions—up from 55 percent in 2006. This growth in the generic share of the market is due to a number of factors, but the most important has been that new pharmaceutical launches have not kept pace with other branded products losing patent protection.

Finally, spending on health administration and insurance grew at an average annual rate of just 1.6 percent between 2006 and 2009, down from an annual growth rate of 7.4 percent over the preceding 3 years. Spending on health administration and insurance actually decreased by 0.6 percent between 2008 and 2009. This slowdown was driven by a dramatic decline in operational and administrative spending among private health insurers. Growth in administrative spending on private insurance declined almost every year since 2002, from a high of 24 percent between 2001 and 2002, to a low of -8 percent between 2008 and 2009.

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3 Adjusting for inflation using the consumer price index.
4 U.S. Census Bureau (http://www.census.gov/hhes/www/hlthins/data/historical/HIB_tables.html)
5 NACDS 2011-2012 Chain Pharmacy Industry Profile.
6 This includes administrative spending on private insurance and workers’ compensation. It does not include administration expenses for privately administered government programs such as managed Medicaid, Medicare Part D or Medicare Advantage plans. The trends described here do not change significantly with the exclusion of administrative spending on workers’ compensation.
The deceleration in spending growth was less remarkable in other spending categories (Exhibit 2). Spending on outpatient care, for example, grew at a steady annual rate of 6.2 percent between 2006 and 2009, down slightly from an annual rate of 7.2 percent in the preceding 3 years. Outpatient care is also the most important driver of growth, representing 50 percent of all increased spending between 2006 and 2009. Sustained growth in outpatient care, and its apparent insulation from the forces restricting spending growth in other parts of the system, are due in large part to a continued shift in activity away from inpatient settings. While this shift has reduced spending on inpatient care, our analysis suggests that these “savings” are at least partially offset by increased utilization of procedures performed on an outpatient basis. Drawing on data provided by the Lewin Group, we show that the procedures which experienced the greatest shift to outpatient settings between 2006 and 2009 also increased in frequency faster than other hospital procedures.7

**Exhibit 2**

**Breakdown of healthcare spending in 2009**

<table>
<thead>
<tr>
<th>Total healthcare spending by category, 2009</th>
<th>Yearly growth since 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% = $2,486 billion</td>
<td>Percent CAGR 2006-2009</td>
</tr>
<tr>
<td>Inpatient care</td>
<td>498</td>
</tr>
<tr>
<td>Outpatient care</td>
<td>1,019</td>
</tr>
<tr>
<td>Long-term and home care</td>
<td>245</td>
</tr>
<tr>
<td>Pharmaceuticals (retail)</td>
<td>250</td>
</tr>
<tr>
<td>Health administration and insurance</td>
<td>163</td>
</tr>
<tr>
<td>Durables ($35 b)</td>
<td>233</td>
</tr>
<tr>
<td>Non-durables ($43 b)</td>
<td>498</td>
</tr>
<tr>
<td>Investment in health</td>
<td>1,019</td>
</tr>
<tr>
<td><strong>Total healthcare spending</strong></td>
<td><strong>$2,486 billion</strong></td>
</tr>
</tbody>
</table>

1 Compound annual growth rate

SOURCE: Centers for Medicare & Medicaid Services; McKinsey analysis

Though the United States continues to spend less than expected on long-term and home care relative to other OECD countries, spending grew faster in this segment than any other, with an average annual growth rate of 6.6 percent per year between 2006 and 2009. This growth appears to have been driven by increased intensity of treatment and spending per patient, rather than by the number of patients receiving care or the aging of the population.

**Implications for future trends in healthcare spending**

Together, these trends paint a complex and dynamic picture of the American health system as it moves into implementation of the ACA. They also suggest a critically important question: Does the decline in spending growth observed since 2002 portend a longer-term moderation of the spending trend, or does it simply represent a cyclical slowdown that will give way again to more rapid growth? While we cannot answer this question definitively, we see four broad factors that are likely to shape the trajectory of healthcare spending in the next several years.

7 Based on analysis of OptumInsight claims data provided by the Lewin Group; see Appendix I for additional details.
The first three of these factors represent sources of uncertainty that will have important implications for healthcare spending in the near-term: the state of the economy, the impact of the ACA, and the consequences of ongoing industry consolidation. This report explains some of the ways in which the recession has contributed to a slowdown in spending growth. Whether, and how soon, the dampening effect of the recession gives way to increased coverage and healthcare consumption will depend upon the pace and scale of economic recovery. Similarly, the ACA, with its new regulations and shifting incentive structures, could carry far-reaching implications for every player in the industry and, therefore, for healthcare spending. At present, however, there is little consensus on what the net impact of the new law will be. Finally, a consistent, long-term trend has been observed toward increased consolidation in multiple sectors of the health economy, especially within the pharmaceutical, health plan, and hospital industries. This consolidation could prove to have important implications for the competitive dynamics and behaviors shaping spending trends in a number of markets.

In addition to these three considerations, we also believe that the relatively recent trend towards “paying for value” across the industry has the potential to influence the slope of the healthcare cost curve over a longer time horizon. For several years, the industry has been gradually shifting from volume-based reimbursement to a “healthcare value” model that rewards innovation, efficiency, and high-quality outcomes. This is the intent behind experiments such as patient-centered medical homes, accountable care organizations and episode-based payments. If implemented on a large scale across the industry, the value movement has the potential to create enduring impact on spending trends over the long term. At this point however, the majority of care in the United States is still reimbursed through a fragmented fee-for-service system, raising questions about whether and how quickly these new value-based approaches will take hold. In addition, many of the most innovative approaches are still in their infancy. While individual cases have shown significant impact, their broad applicability remains a subject of intense debate.

The shift toward paying for value has also been accompanied by the emergence of healthcare “consumers” – patients and their families – as an increasingly important factor in purchasing decisions. There is reason to believe that value-conscious consumers, armed with greater choices in how and where they purchase health care, will demonstrate a willingness to alter spending and consumption patterns and place a greater emphasis on what they are getting for their healthcare dollar. Consumers will not determine all healthcare spending decisions, of course, but perhaps they can shape enough of them to have influence on the system as a whole – particularly with the emergence of a larger individual insurance market, changes in benefit design that place more financial responsibility with patients, greater access to information on cost, quality, and service, as well as a wider selection of care sites.

While the value movement in health care is still in its early stages in the U.S., the combination of a reimbursement system that pays for value over volume, and a population of consumers that makes value-based buying decisions could drive improved performance within the system. We therefore believe the status of this trend and its prevalence across the industry merit close examination by leaders within the field, policymakers, and regulators.

At the end of 2009, as today, the ACA was being debated against an uncertain political and economic backdrop. The analysis of the 2006-2009 period in this report sets an important baseline on U.S. healthcare spending and establishes parameters to watch as the system enters a new phase in its evolution.

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8 A growing body of research shows that increasing consumer choice does not always drive down costs, but, under the right circumstances, can increase competition and reduce spending on healthcare products and services. See Gail Wilensky, “Consumer-Driven Health Plans: Early Evidence and Potential Impact on Hospitals,” Health Affairs 25, no. 1 (Jan 2006): 174-185.


Overall growth

Even as the economy stalled, U.S. spending on health care hit a record high 17.6 percent of GDP in 2009. This continues decades of uninterrupted growth. Since 1960, U.S. health spending has grown faster than GDP in all but 8 years. As a result, national health expenditures have grown nearly five times as much as the economy as a whole, on a real, per capita basis through this period (Exhibit 3).

Exhibit 3

Adjusting for inflation and population growth, spending on health care has grown nearly 5 times as much as GDP since 1960

Cumulative, real, per capita growth in national health expenditures vs. GDP

Percent growth since 1960

At $2.5 trillion in 2009, the U.S. price tag on health care rose 16 percent above 2006 spending. However, an examination of factors driving spending growth between 2006 and 2009 reveals some important changes since the last report in this series, covering the 2003-2006 period.

Our analysis of health spending between 2006 and 2009 shows that, although total expenditures grew, the pace of growth slowed significantly. Spending rose at 4.9 percent annually during the 3-year period, which represents a notable decrease from the average 7.7 percent annual growth the United States experienced in the first 6 years of the decade.

The slowdown in health spending was particularly acute as the economy sunk into recession. Between 2008 and 2009, total health expenditures grew by just 4 percent – the lowest rate of increase recorded since 1960. Even more remarkable, healthcare spending per capita, adjusted for inflation, actually
decreased between 2007 and 2008 – another first in nearly 50 years.\textsuperscript{10} This trend appears to have continued in 2010, with spending growth estimated at just 3.9 percent.\textsuperscript{11}

Spending slowed across the board between 2006 and 2009, but growth varied significantly between different segments of the health economy. The deceleration was most pronounced in three areas that have historically been among the fastest growing: inpatient care, pharmaceuticals, and health administration and insurance.

The slowdown in spending growth was less remarkable in other segments of the health economy. Growth in spending on outpatient care, for example, slowed slightly from the yearly rate seen between 2003 and 2006, but remained substantial at 6.2 percent per year. Outpatient care is the single-largest category of spending, and accounted for half of all the growth in U.S. healthcare expenditures between 2006 and 2009. Long-term and home care, historically one of the smaller segments of the health economy, was the second-largest component of growth and the fastest-growing (Exhibit 4).

Exhibit 4
Every spending category grew faster than GDP between 2006-2009 except for health administration and insurance

These changes in spending growth across different categories of care were accompanied by significant changes in the sources of health insurance and funding. The acceleration in the shift from private to public spending was the most notable. Spending by private sources – including private insurance as well as out-of-pocket spending, private charities and other sources – grew at less than half the rate of spending by public programs. While Medicare spending slowed from the rate seen earlier in the decade, the government program for the elderly and disabled still remained the fastest-growing payer category, with expenditures rising at an average annual rate of 7.6 percent. Spending by Medicaid, the state Children’s Health Insurance Program (CHIP) and other government programs grew less rapidly than Medicare, but still increased at 6.8 percent per year – up from an average yearly growth of 5 percent between 2003 and 2006.

\textsuperscript{10} Adjusting for inflation using the consumer price index. The GDP implicit price deflator is used at other points to adjust for inflation in direct comparisons of economic growth and health care spending.

Overall, the United States spent nearly $200 billion less on health care between 2006 and 2009 than it would have if spending growth had continued at the pace experienced over the previous 3 years. While health spending still grew faster than the economy, this represents a substantial slowdown.

**Healthcare spending in international perspective**

McKinsey’s previous reports demonstrated that the United States spends considerably more on health care than would be expected based on expenditures in other developed countries, even accounting for differences in income. This was shown using a measure that we call Estimated Spending According to Wealth (ESAW), derived from a regression analysis of per capita income and spending data from comparable OECD member countries. ESAW can be interpreted as the amount that the U.S. might be expected to spend on health care based on spending levels in other countries and the fact that wealthier societies tend to devote a greater share of GDP to medical care.

We estimate that U.S. healthcare spending exceeded ESAW by $572 billion in 2009, or about 23 percent of total expenditures. The picture remained largely unchanged since 2006, despite the fact that healthcare spending grew faster on average in other developed countries in the intervening years. Between 2006 and 2009, spending grew at an average yearly rate of 8.7 percent in our sample of OECD countries, compared to a relatively modest annual rate of 4.0 percent per capita in the United States. Since per capita GDP also grew faster in other OECD countries during this period, however, the share of U.S. healthcare spending above the expected level (ESAW) remained effectively unchanged (Exhibit 5).

**Exhibit 5**

In 2009, 23% of total U.S. spending on health care exceeded expected levels – a change of less than 1% from 2006

<table>
<thead>
<tr>
<th>Per capita healthcare spending: 2006, 2009¹</th>
<th>2009 ESAW</th>
<th>2006 ESAW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent at PPP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006 R²=0.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009 R²=0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. 2006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. 2009</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In 2009, 23% of total U.S. healthcare spending was above ESAW

- This amounts to $1,866 above the expected level for every American

- In 2006, 22.1% of U.S. spending exceeded ESAW

Many of the trends noted in our last report, covering 2003-2006, continued through the 2006-2009 period: U.S. spending exceeded expected levels in every major category except long-term and home care, and most of the surplus spending was still concentrated in outpatient care (Exhibit 6).

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¹ Incomplete data for Netherlands in 2006

² Due to changes in the data and methodology, spending above ESAW as a share of total spending in 2006 has been revised down since the 2008 report

SOURCE: OECD; McKinsey analysis

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This analysis is based on all of the OECD countries for which we had complete 2009 spending data, with the exception of Norway. The countries included are: Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, the Netherlands, New Zealand, Poland, the Slovak Republic, Slovenia, South Korea, Spain, Sweden and Switzerland.

This represents a revision to the findings reported in our 2008 report based on updates and other adjustments to the data included in the analysis. Additional detail is provided in Appendix I.
While long-term and home care was one of the fastest-growing segments of the U.S. health economy, spending remained less than half of ESAW. Some of this gap can be explained by demographic differences. Another consideration is that, unlike in many other countries, private insurance in the United States typically does not cover long-term care.

Exhibit 6
Healthcare spending in 2009 exceeded ESAW in almost every major category

<table>
<thead>
<tr>
<th>Total U.S. spending on health care by category of care 2009</th>
<th>Spending above or below ESAW 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD billions</td>
<td>USD billions</td>
</tr>
<tr>
<td>Total</td>
<td>$2,486 USD</td>
</tr>
<tr>
<td>Spending aboveESAW</td>
<td>522 USD</td>
</tr>
<tr>
<td>Spending belowESAW</td>
<td>-572 USD</td>
</tr>
</tbody>
</table>

Outpatient care includes all of the costs associated with same-day hospital care, care provided in physicians’ offices and freestanding medical facilities (such as ambulatory medical centers and diagnostic imaging centers), ambulance services, and dental care.

Inpatient care includes all care provided in a hospital setting with at least 1 night spent in the hospital (excluding observations). Costs include services of resident physicians, hospital-based nursing home and home health care, room and board, inpatient pharmacy, and all other costs billed to patients for the care they receive during their stay.

Long-term and home care includes spending on three general types of care: home health, which includes care provided in the home by home health agencies; nursing care, which includes care provided by nursing care facilities and continuing care retirement communities; and care provided in freestanding facilities for the intellectually disabled as well as mental health and substance abuse facilities. This category does not include care provided in homes for the elderly.

Drugs and non-durables include spending on prescription drugs delivered through standard retail channels, such as pharmacies, supermarkets and by mail order. This category does not include specialty drugs and others administered in a clinical setting. Non-durables include non-prescription drugs and other medical sundries, such as bandages, needles, thermometers, etc.

Health administration and insurance includes the administrative costs associated with the provision of insurance by both private and public programs (including Medicaid, Medicare, CHIP, the Department of Defense and the Department of Veterans’ Affairs). This includes private payer profits, taxes and selling, as well as general and administrative (SG&A) expenses.

SOURCE: OECD; Centers for Medicare & Medicaid Services; McKinsey analysis

The U.S. has a slightly younger population than most comparable OECD countries. Since long-term and home care is utilized more extensively by the elderly, this could help explain why the U.S. spends less in this category.
Higher physician salaries compared to other OECD countries also help explain some of the spending gap. The United States would have spent $120 billion less in 2008 if U.S. physicians were compensated in the same proportion to the national average worker as their counterparts in other developed countries.\(^{15}\) In 2008, the typical U.S. generalist earned about 5 times more than the average U.S. worker; specialists earned 10 times more. In other developed countries, meanwhile, generalists earned about double the income of the average worker, and specialists earned just 2.7 times the mean.\(^{16}\)

**Who pays for health care?**

Government spending on health care increased faster than private expenditures between 2006 and 2009, but at a slower rate of growth than seen in the previous 3-year period. In 1960, 5 years prior to the enactment of the Medicare and Medicaid programs, public dollars accounted for 22 percent of total health costs. By 2009, public programs accounted for nearly half (47 percent) of national health expenditures.\(^{17}\) We anticipate that this trend will intensify after 2014 due to provisions in the Affordable Care Act that expand the population eligible for Medicaid by about 16 million and provide government subsidies for private insurance to millions of Americans.\(^{18}\)

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\(^{15}\) This includes Denmark, Finland, Hungary, the Netherlands, and the United Kingdom.

\(^{16}\) Calculated using OECD data. This comparison does not account for potential differences in physician quality, productivity, or hours worked, or for the fact that U.S. physicians tend to shoulder a greater share of the cost of obtaining a medical education and establishing a practices than doctors in many other developed countries. Greater income inequality in the United States also plays a role. Physicians are in the upper end of the income distribution in most developed countries. Since top-earners in the United States are paid more relative to the mean than their counterparts in other developed countries, the same can be expected to be true of physicians. The difference in relative compensation levels between American physicians and those in other countries is consequently less striking when compared to the incomes of other top-earners instead of to the national mean; see D. Cutler and D. P. Ly, “The (Paper) Work of Medicine: Understanding International Medical Costs,” Journal of Economic Perspectives 25, no. 2 (Spring 2011): 3-25.

\(^{17}\) Public spending includes expenditures from Medicare, Medicaid, CHIP, VA, DOD, and other federal and state programs. It does not include spending on private insurance for government employees. Estimates for the share of total healthcare expenditures paid by private vs. public sources vary depending upon the types of expenditures included and with adjustments for different kinds of cross-subsidies. This estimate is based off of total health expenditures less spending on equipment to maintain consistency with the totals used for comparison with the OECD data. It does not include contributions to private insurance plans for government employees. In its 2009 analysis of spending by sponsor, the Centers for Medicare and Medicaid Services estimate public expenditures as 44 percent of total spending. Some argue that this accounting masks cost-shifting to private payers to compensate for low government reimbursement rates. Others point out that it also excludes the effects of tax subsidies for private insurance. One study estimated that if these tax subsidies were accounted for, public spending would have amounted to 58 percent of total expenditures in 2004 (see P. Ketsche, et al., “Lower-income families pay a higher share of income toward national healthcare spending than higher-income families do,” Health Affairs 30, no. 9 [Sept 2011]: 1637-46).

\(^{18}\) Based on analysis of the Affordable Care Act conducted by the Congressional Budget Office and the Joint Committee on Taxation, March 20, 2010 (http://www.cbo.gov/doc.cfm?index=11379). Five percent of income will be disregarded when determining eligibility for Medicaid. The subsidies for private insurance will presumably not be reflected in the public share of spending as reported in the NHE accounts as they will captured in private insurance spending (and administration). Even so, they will represent a substantial increase in overall government expenditures on health care.
Yet even as part of a longer trend, the gap between public- and private-spending growth rates expanded between 2006 and 2009 (Exhibit 7). This expansion was driven largely by a shift away from private coverage during the recession. Between 2007 and 2009, the number of people with employer-sponsored or private individual insurance fell by nearly 10 million. In 2009, the share of Americans with private insurance slipped to 64.5 percent – the lowest level in 20 years of census records – while the share receiving some form of public insurance hit a record high. The number of Americans without any insurance hit nearly 49 million in 2009 - the first year in recent history to see a net decline in the total number of insured.

This shift in coverage explains some, but not all, of the more rapid growth in public spending. As would be expected during an economic downturn, Medicaid enrollment increased substantially. However, the growth in beneficiaries was not the only reason spending increased. Annual growth in Medicaid and CHIP was driven in near equal measure by increased enrollment and higher cost per beneficiary. Increased spending per member, meanwhile, was the primary factor in Medicare’s spending growth. Enrollment in Medicare grew at 2.5 percent each year while spending on each enrollee grew at twice that rate. Some of the additional spending can be attributed to Medicare Part D, but we estimate that spending growth would have continued at 4.7 percent annually even without the drug benefit program. Medicare spending growth dipped in 2010, partly due to an across the board reduction of 3.4 percent in payments to private plans.

20 Enrollment in Medicaid and CHIP increased at an average annual growth rate of 3.7 percent between 2006-2009, while spend per enrollee increased at 3.1 percent each year. Centers for Medicare and Medicaid Services, “2010 Medicaid Managed Care Enrollment Report”; Kaiser Family Foundation, “CHIP Enrollment: December 2009 Data Snapshot.”
21 Based on spending and enrollment data from the Centers for Medicare and Medicaid Services.
While spending per beneficiary also rose on the private side (commercial insurance), aggregate growth was largely offset by decreased coverage of the population. Growth in out-of-pocket spending – defined as cash payments for medical goods and services, including co-pays and deductibles but excluding insurance premiums – also slowed substantially to an annual rate of 3.2 percent. This slowdown continued a long-term trend in decreasing out-of-pocket spending as a share of total healthcare expenditures.

Estimates of consumers’ out-of-pocket healthcare costs vary widely. Though generally understood to refer only to point-of-care cash payments on medical goods and services, the term sometimes includes private insurance payments as well (for example, the portion of monthly premiums paid for by employees). Further, various data sources report different figures for the share of healthcare spending that is paid for out-of-pocket. According to the National Health Expenditure Accounts, out-of-pocket spending has decreased from 48 percent of all healthcare expenditures in 1960 to 12 percent in 2009.

The decline in what Americans pay out-of-pocket for health products and services may be surprising given well documented increases in cost-sharing. Indeed, cost-sharing in the form of co-pays, deductibles and coinsurance has increased steadily for the nearly two-thirds of the population who are privately insured. It is also true that out-of-pocket spending represents a significant burden for many families. The average Medicare beneficiary, for example, pays more than twice as much each year in out-of-pocket expenses as the average person with employer-based coverage.

While out-of-pocket spending is important, it is not the only contributor to a family’s medical costs. Household spending on insurance – which includes contributions to employer-sponsored insurance, individual insurance premiums and payments to Medicare – amounted to 16 percent of all healthcare expenditures in 2009. Together with out-of-pocket spending, this brought the total household share of health spending to 28 percent. Many economists argue that the actual share of spending paid by households is even greater when one accounts for the fact that workers pay for a substantial portion of the employer contribution to their insurance through reduced wages.

Household insurance payments are also growing faster than out-of-pocket spending. This has been due to increases in premium prices as opposed to growth in the employee share of payments. As a whole, private insurance payments have grown at about the same rate as national healthcare spending on a real, per capita basis – and consequently much faster than GDP – while out-of-pocket spending has generally tracked with growth in personal income (Exhibit 8).

23 The MEPS data, for example, reports out-of-pocket spending as 16.2 percent of total personal healthcare spending in 2007. This is considerably higher than the 12.7 percent reported by NHE for the same year. The difference is actually less significant than it first appears, however, as the MEPS data only covers personal healthcare expenditures, which are considerably lower than the total expenditures reported by the NHE accounts. The NHE accounts also report personal healthcare expenditures. In 2007, out-of-pocket spending was estimated to be 15.2 percent of this smaller total, much closer to the share reported by MEPS. It is important to note that since the NHE data are considerably more comprehensive, estimated average per capita out-of-pocket spending based on NHE figures was about 60 percent larger in 2007 than the average reported by the MEPS data. For these reasons, we believe that the data sources are actually reasonably close in their estimates of out-of-pocket spending as a share of total spending, and have chosen to use the NHE estimates as the most comprehensive and consistent over time.
Exhibit 8

Household insurance payments have grown with total health expenditures while out-of-pocket spending has tracked with personal income

Cumulative, real, per capita growth in household health expenditures relative to total health care spending and personal income

Percent growth since 1999

SOURCE: Centers for Medicare & Medicaid Services; Bureau of Economic Analysis; McKinsey analysis
2. What drove the slowdown in spending growth?

Healthcare spending in the United States remains at an all-time high, even after accounting for inflation and population growth. But the rate of growth is the slowest that it has been in 50 years.

So what drove this slowdown in growth? One possible explanation is that the deceleration simply represents the continuation of a longer-term slowdown that has been underway for the better part of the decade. Yearly growth in healthcare spending has been decreasing consistently from a decade high of 9.5 percent between 2001 and 2002. Given this longer-term trend, it is possible that what appears as a more pronounced downturn when viewed between three-year periods may, in fact, represent a gradual shift over a longer time horizon.

What, then, drove the longer-term slowdown? One common explanation is that the deceleration that began in 2002 represents a moderation of the rapid growth in spending that followed the backlash against managed care in the late 1990s. In other words, the frenetic spending growth that accompanied the relaxation of managed care restrictions slowed as payment models stabilized around looser forms of managed care.24

Another explanation points to changes in benefit design intended to promote more rational purchasing behavior by consumers and physicians. These changes have significantly increased cost sharing in the form of higher co-pays, coinsurance and deductibles. The average HMO copayment increased 10.4 percentage points between 2006 and 2009. Insurance premiums also increased during this period, with the average premium for a family of four increasing 16.5 percentage points.25 The aggregate effect of increased premiums and cost-sharing on healthcare consumption is difficult to isolate, but may have contributed to the general slowdown in spending growth.

Developments specific to particular segments of the health economy may also have contributed to the slowdown. Growth in spending on outpatient care and long-term and home care has fluctuated over the decade, but has not shown a clear pattern of decline. The broader deceleration in spending growth has been led by a slowdown in inpatient care, pharmaceuticals and health insurance and administration. With the exception of a spike in spending due to Medicare Part D, spending growth in each of these areas has been slowing fairly consistently since 2003 for a variety of reasons.26

24 Bradley Strunk and Paul Ginsburg have explained the deceleration in spending growth in 2003 in these very terms: “This slowdown is likely another reflection of the completion of the transition to looser forms of managed care. For example, if fewer authorization requirements to get access to specialists led to increased use of specialty services in 2001 and 2002, the stability of this model would lead us to expect a smaller increase in usage” (“Tracking Health Care Costs: Trends Turn Downward in 2003,” Health Affairs web exclusive, June 9, 2004).


26 The overall slowdown in spending must, clearly, be reflected in a slowdown within some or all of the specific cost categories. The point here is that developments within specific segments, independent of broader forces affecting spending in others, might also have driven the observed deceleration. For example, increased generic utilization might reduce spending growth in pharmaceuticals irrespective of developments affecting other cost categories.
Trends within each segment of the health economy are examined in greater detail in the following chapter. Before analyzing individual categories of care, however, it is helpful to first delve further into what might have caused the across-the-board slowdown in healthcare spending growth.

We developed three spending projections to determine how much of the recent slowdown can be explained by preceding trends. The projections were started in 2008 to better isolate the effect of the recession, which began in December 2007. The first projection was derived from a time-series regression analysis of historical healthcare expenditures and per capita GDP from 1960 through 2007. The second was derived from the average growth rate in health costs between 1993 and 2007, covering the full spending growth cycle associated in the economic literature with the rise and subsequent backlash against managed care. The third and most aggressive projection extended the average annual deceleration in growth between 2002 and 2007 through the recession.

None of these efforts to extrapolate from preceding trends can account for the slowdown in spending growth in 2008 and 2009. Even under the most aggressive assumptions, they do not account for more than three-quarters of the gap between actual spending levels and the baseline set by growth between 2003 and 2006 (Exhibit 9).

Exhibit 9

Even under the most aggressive assumptions, projections based on historical data do not account for the slowdown in 2008-2009

This raises the question of what accounted for the remaining gap. The obvious explanation would be that the sharp deceleration in spending growth in 2008 and 2009 was the result of the recession. In most sectors of the economy it would hardly be news to suggest that the recession had reduced spending. Medical spending, however, has historically not been very sensitive in the short term to economic fluctuations. Healthcare spending models like those used by the Centers for Medicare and Medicaid Services (CMS) to forecast National Health Expenditures identify a relationship between spending and economic growth, but assume a lag of up to several years for different spending categories. The recession of 2008-2009 appears to be the exception, with growth in medical spending dipping rapidly in 2008 after leveling off briefly between 2005 and 2007 (Exhibit 10).

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28 Anne Martin et al., “Recession Contributes to Slowest Annual Rate of Increase in Health Spending in Five Decades,” Health Affairs 30 no. 1 (Jan 2011): 11-22.
What was different about this recession? One explanation might be found in the massive loss of employment and the resulting loss of private health insurance. As previously noted, the number of Americans with private coverage dropped by nearly 10 million between 2007 and 2009. To the extent that people who lost private insurance consumed health care differently as a result, this might explain some of the reduced growth in spending. Even assuming that everyone who lost insurance consumed medical products and services at the same level as the average uninsured person, however, this loss in coverage would still explain only a portion of the remaining gap.\(^{29}\)

Again, under the most aggressive assumptions, the loss of healthcare coverage still does not account for the full deceleration. This suggests that a substantial portion of the slowdown was attributable to changing consumption patterns among the insured. This appears to have continued since the end of the recession in 2009. A recent paper from the Kaiser Family Foundation, for example, reports a 17 percent decline in physician visits between 2009 and 2011.\(^{30}\)

The recession of 2008-2009 was unusually deep, and was characterized by an exceptionally sluggish recovery, both in terms of GDP growth and employment levels. The combination of increased unemployment and declining average wages, along with higher insurance premiums, co-pays and deductibles, has left many consumers with less to spend on health care and greater sensitivity to

\(^{29}\) This is an aggressive assumption because many people who lose employment are able to retain their health benefits through COBRA. The American Recovery and Reinvestment Act (ARRA) of 2009 provided COBRA premium reductions for eligible individuals through the end of May 2010.

the cost of medical products and services. Healthcare spending, including the employee portion of insurance premiums and all out-of-pocket spending – remained fairly consistent as a share of wages between 2000 and 2007. As wages have gone down and premiums have gone up during the recession, however, the average share of wages spent on health care has risen slightly. This appears to have been driven primarily by private spending on insurance premiums, as out-of-pocket spending has remained flat as a share of wages. According to some measures, average real consumer spending on health care – excluding premiums – actually declined in 2008 and 2009, even as the cost of care increased.\footnote{As previously noted, different sources report different average levels of out-of-pocket spending on health care. The Consumer Expenditure Survey, conducted by the U.S. Bureau of Labor Statistics, suggests that average household spending on medical goods and services other than insurance premiums has been declining slightly in real terms, and dipped below 2003 levels in 2008. Evidence of rising costs is provided at different points throughout the report, and includes increasing medical inflation, increased copays and deductibles, and increased average unit costs.}

In addition, the recession led to a substantial loss of wealth. A survey by the Federal Reserve found that the average American family lost 18 percent of its net worth between 2007 and 2009.\footnote{J. Bricker, et al., “Surveying the aftermath of the storm: changes in family finances from 2007-2009,” Finance and Economics Discussion Series, Divisions of Research and Statistics and Monetary Affairs (Washington D.C.: Federal Reserve Board March 2011).} The same study found that nearly two-thirds of American families (62.5 percent) experienced a decline in wealth in this period. While wealth is not as well understood as income relative to healthcare spending, a recent Harvard Business School survey found that people who lost more than 10 percent of their wealth during an economic crisis were substantially more likely to curtail routine medical care.\footnote{A. Lusardi, D. Schneider and P. Tufano, “The economic crisis and medical care usage,” Harvard Business School, NBER, Working Paper, January 2010.}

Loss of access to credit was also a factor during the recession, since higher cost sharing has made borrowing more important to healthcare consumption. The tightening of credit markets, and the need for many households to reduce debt, may have contributed to the slowdown in spending growth.

The fact that growth in healthcare spending appears to have immediately slowed with the onset of the recession suggests an important shift in consumer sensitivity, as this was not the case in previous recessions. Whether this is a positive development in terms of reducing low-value spending remains to be seen.
3. Trends in U.S. healthcare spending

For a thorough examination of U.S. healthcare spending, we break the whole into its dynamic segments, each of which responds to different market forces and grows on a different trajectory. This section updates many of the findings described in our previous two reports, and shows how spending trends have evolved in the period between 2006 and 2009.

Outpatient care

Outpatient care is the largest contributor to increased U.S. health spending, and has accounted for nearly half of total growth since 2006. The factors driving the general slowdown in spending growth appear not to have impacted outpatient care as severely as other segments. The difference is due partly to the continued shift from inpatient to outpatient care. That shift has reduced the effective “price paid” for those services. However, these savings appear to have been offset by a greater use of outpatient care, due to both added convenience for provider and patient as well as the financial incentives embedded in fee-for-service reimbursement for these services.

Outpatient care includes all of the activities associated with same-day (“observation” or “outpatient”) hospital care, dental care, laboratory services, and care provided in physicians’ offices and freestanding medical centers (such as ambulatory surgery centers and diagnostic imaging centers). Spending on this segment grew at an annual rate of 6.2 percent in the 2006-2009 period, down 1 percentage point from the prior 3-year average. Still, total spending on outpatient care surpassed $1 trillion in 2009, representing 41 percent of total health costs in the nation.

Growth in spending varied across different sources of payment. Out-of-pocket spending grew at 3.2 percent annually between 2006 and 2009, while spending from private insurance slowed to 4.9 percent. The government has been the fastest-growing payer, with Medicare’s outpatient spending growing at 8.5 percent annually and Medicaid’s at 9.4 percent (See Appendix II for additional detail).

While the United States spends vastly more on outpatient care than on other health products and services – and more than expected when compared to other OECD countries – this spending cannot simply be considered excess. Broadly speaking, the United States has led the rest of the developed world in shifting treatment from inpatient to outpatient settings – whether in a hospital setting, physician offices or other freestanding care facilities.34

In the current system, patients expected to require 24 hours or longer in the hospital are generally billed as inpatient admissions. All other cases requiring hospital care are billed as outpatients. In theory, moving care from more expensive inpatient settings to outpatient settings should save money. We estimate that the shift from keeping patients in the hospital to delivering the same care on an outpatient basis produced about $100 billion in savings in 2009.

34 Among OECD countries, only Canada delivered a greater proportion of care in an outpatient setting in 2009.
But those savings have been partially offset by increased volume. One cause of this increased activity can be found in the financial incentives embedded in fee-for-service reimbursements, which often make it attractive for providers to perform outpatient procedures. Another factor is that the same innovations which make it possible to perform a given procedure on an outpatient basis tend to lower the barriers to performing the procedure. Surgeries and procedures tend to be performed more often as they become safer and more convenient, and the increase in volume frequently offsets the reduction in cost per case. The introduction of laparoscopic cholecystectomy surgery in the early 1990s offers a well documented example of this dynamic. Overall costs for this noninvasive surgical procedure grew with its popularity, despite the savings from reduced hospital stays.\textsuperscript{35}

An analysis of claims data by the Lewin Group provides additional evidence of this phenomenon, showing that procedures are performed more frequently when they are conducted in outpatient settings.\textsuperscript{36} Take the insertion of cardiac permanent pacemakers, which, until recently, were often performed on an inpatient basis. Between 2006 and 2009, the share of implantations performed on an outpatient basis in the hospital increased by 12.4 percentage points. Over this same period, the frequency with which the operation was performed increased by 5.6 percent per year, per thousand patients.\textsuperscript{37}

A similar pattern is evident across most of the five procedures that shifted most significantly to outpatient hospital settings over this time. On average, the frequency with which these procedures were performed increased by 3.7 percent per year – compared to an annual growth of just 0.5 percent for all hospital procedures. Since many of these procedures were relatively “mature,” we do not believe that the increased frequency with which they were performed over this time period can be explained as a result of natural uptake, as one might expect to see with new procedures or products.

\textbf{Exhibit 11}

The procedures shifting most heavily to non-hospital settings were also performed more frequently

<table>
<thead>
<tr>
<th>Absolute change in the share of common procedures performed in non-hospital settings</th>
<th>Change in frequency of procedures performed per 1,000 members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage points, 2006 to 2009</td>
<td>Percent CAGR\textsuperscript{1} 2006-2009</td>
</tr>
<tr>
<td>Hysteroscopy, Biopsy, Ablation &amp; Treatment</td>
<td>6.3</td>
</tr>
<tr>
<td>Prostate</td>
<td>5.6</td>
</tr>
<tr>
<td>Lower GI Endoscopy, Biopsy &amp; Treatment</td>
<td>5.6</td>
</tr>
<tr>
<td>Cataract</td>
<td>5.4</td>
</tr>
<tr>
<td>Upper GI Endoscopy, Biopsy &amp; Treatment</td>
<td>5.3</td>
</tr>
<tr>
<td>Endoscopy &amp; Biopsy - Respiratory</td>
<td>4.7</td>
</tr>
<tr>
<td>Remove or Biopsy - Breast Lesion</td>
<td>3.9</td>
</tr>
<tr>
<td>Hernia</td>
<td>3.7</td>
</tr>
<tr>
<td>Arthroscopy/Surgery - Shoulder</td>
<td>3.7</td>
</tr>
<tr>
<td>Arthroscopy/Surgery - Knee</td>
<td>3.4</td>
</tr>
<tr>
<td>Tonsils &amp; Adenoids</td>
<td>3.1</td>
</tr>
<tr>
<td>Cholecystectomy</td>
<td>1.2</td>
</tr>
<tr>
<td>Intraorbital injection</td>
<td>1.0</td>
</tr>
</tbody>
</table>

\textsuperscript{1} Compound annual growth rate

\textsuperscript{35} A. P. Legorreta et al., “Increased cholecystectomy rate after the introduction of laparoscopic cholecystectomy,” Journal of the American Medical Association 270, no. 12 (September 22, 1993): 1429-32.

\textsuperscript{36} Based on analysis of OptumInsight claims data provided by the Lewin Group; see Appendix I for additional details.

\textsuperscript{37} Given the amount of undiagnosed arrhythmia, this volume growth likely represents a positive development for patients, assuming an adherence to guidelines.
This phenomenon is even more pronounced among procedures that have undergone a significant shift from a hospital to a non-hospital setting (Exhibit 11). For example, between 2006 and 2009, the share of prostate procedures performed outside the hospital increased by 5.6 percentage points. Over this same period, the frequency with which these procedures were performed increased by 3.2 percent each year. On average, the frequency of the 13 procedures that the Lewin Group observed making the most significant shift outside the hospital in this period increased by 6.3 percent annually.

Overall, the growth in surgical procedures between 2006 and 2009 was strongest outside the hospital environment. The frequency of procedures performed in the hospital remained relatively flat during the 3-year period, while procedures performed in physicians’ offices grew annually at 2.4 percent, and those performed at Ambulatory Surgical Centers grew at an annual rate of 7.3 percent (Exhibit 12).  

Technological and therapeutic advances explain some of the movement to outpatient care, but the economics of hospitals and outpatient facilities also play an important role. It is typically more profitable to provide care outside the hospital, and outpatient facilities frequently focus on the highest margin activities. Hospitals also typically earn high margins on outpatient care delivered to those with commercial insurance, though at reduced revenue per encounter. As discussed in McKinsey’s previous healthcare spending reports, financial incentives are currently aligned to encourage outpatient provision of services, whether by hospitals, freestanding providers, or by physicians themselves.

The growth in outpatient care also reflects increasing pressure to limit costly inpatient admissions. A noteworthy example of this pressure is offered by recently established post-discharge auditing processes. The Centers for Medicare and Medicaid Services have contracted with private auditors to investigate instances where Medicare may have paid inpatient rates for cases which could have been managed appropriately on an outpatient basis. Pilots are planned for “pre-audit” reviews where excess inpatient assignment is suspected. These measures will likely accelerate the shift from inpatient to outpatient care, where scrutiny of treatment and billing practices generally remains far less intense.

### Exhibit 12

**Most of the observed growth in surgical procedures has occurred outside the hospital**

<table>
<thead>
<tr>
<th>Frequency of surgical procedures per thousand patients</th>
<th>CAGR(^2) (2006-2009) Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per thousand members</td>
<td></td>
</tr>
<tr>
<td>Hospital inpatient</td>
<td><img src="#" alt="77" /> <img src="#" alt="76" /> (0.4)</td>
</tr>
<tr>
<td>Ambulatory surgical center (ASC)</td>
<td><img src="#" alt="55" /> <img src="#" alt="69" /> 7.3</td>
</tr>
<tr>
<td>Other(^1)</td>
<td><img src="#" alt="70" /> <img src="#" alt="79" /> 3.9</td>
</tr>
<tr>
<td>Hospital outpatient</td>
<td><img src="#" alt="143" /> <img src="#" alt="147" /> 0.9</td>
</tr>
<tr>
<td>Office</td>
<td><img src="#" alt="773" /> <img src="#" alt="831" /> 2.4</td>
</tr>
<tr>
<td>Total</td>
<td><img src="#" alt="1,119" /> <img src="#" alt="1,202" /> 2.4</td>
</tr>
</tbody>
</table>

\(^1\) Includes emergency room, assisted living facilities, pharmacy and unknown
\(^2\) Compound annual growth rate

**SOURCE:** Lewin Group analysis of data from OptumInsight (formerly Ingenix); McKinsey analysis

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38 Based on analysis of OptumInsight claims data provided by the Lewin Group; see Appendix I for additional details.

39 Hospitals are compensated for treating inpatient Medicare beneficiaries on the basis of a fixed case rate for a given diagnosis code (“DRG”). As a result, hospitals find admissions with short lengths of stay, but for which they receive the full DRG payments, to be particularly attractive. The purpose of the audits is to ensure that patients are only admitted to inpatient care when medically appropriate.
While some of the shift to outpatient care has likely improved the quality and convenience of care, it has also been driven by economic considerations with more ambiguous implications for patient well-being. Ultimately it is difficult to determine from aggregate spending data alone how much of the shift is medically appropriate and how much represents utilization growth without clear benefit to the patient.

Spending on inpatient care has slowed considerably as more patients receive care in outpatient settings (Exhibit 13). In 2009, the United States spent just under $500 billion on inpatient care – roughly 20 percent of total U.S. healthcare spending.

Exhibit 13

Growth in outpatient care remained level between 2006-2009 even as the slowdown in inpatient care gained momentum

The annual growth rate of spending on inpatient services was 3 percent in the 2006-2009 period, about half the yearly growth of the prior 3 years. Although the slowdown was evident across all payment categories, it was most pronounced in private insurance, which grew at just 2 percent per year (see Appendix II for additional detail).

Most of the spending growth in the inpatient segment can be attributed to increased cost per admission – not an increase in patients. In 2009, only 707 nights were spent in the hospital for every 1,000 people – nearly one-third fewer than the OECD average (Exhibit 14). With utilization effectively flat and modest increases in average patient acuity, approximately three-quarters of spending growth between 2006 and 2009 was attributable to increased price and/or intensity of care. Despite lower hospital admissions, however, the United States still led the OECD in spending on hospitalization, per capita.

40 Inpatient costs include the services of resident physicians, room and board, inpatient pharmacy, nursing services and all incidental costs billed to patients.
Compared to other developed countries, U.S. inpatient costs exceeded expected spending by approximately $47 billion in 2009. This estimate likely overstates the gap due to two factors: the way graduate medical education is paid for in the United States, and the economics of academic health systems that perform basic and clinical research alongside treatment. We estimate that the premium spent for education and research amounted to approximately $11 billion in 2009 – nearly one-quarter of the total spending above expected for inpatient care. While other countries also invest in education and research, the costs associated with these activities are generally not tied to hospital finances in the way they are in the United States.

Despite continued increases in price and/or treatment intensity, hospital profitability declined between 2006 and 2009. While prices have increased, reimbursements have not kept pace with costs and a rise in bad debt. There are several reasons for this. Hospitals struggle with a high fixed cost base, yet continue to invest in expensive capital projects. In addition, labor and supply costs have risen faster at the unit level than overall inflation. In contrast to many other industries, labor productivity growth has stalled in hospitals, reflecting a broader problem in the healthcare industry. In 2009, the average number of full-time equivalent workers (FTEs) per 100 adjusted admissions was only 1.2 percent lower than in 1989. According to one recent report, labor productivity in American health care – measured against such outputs as tests, treatments and patient visits – has actually declined by 0.6 percent each year since 1990.42

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41. To reimburse hospitals for the costs of providing graduate medical education, Medicare adds special reimbursements and supplements for these hospitals (direct and indirect graduate medical education funding) that effectively increases the Medicare healthcare expenditures to these training hospitals. Furthermore, for academic health systems performing research activities, the total costs of performing research (including allocations for faculty salary and associated overhead) often exceed the research funding (including “indirect cost recoveries” by some funding sources meant to compensate for overhead expenses). These deficits must be made up by subsidies from somewhere else within the academic health system enterprise, often from the clinical activities of the health system. As such, at least part of the academic health system pricing for services includes a premium to offset this internal cross-subsidization.

Although U.S. spending on long-term and home care has grown faster since 2006 than in any other segment of the health economy, the United States has historically spent less on these services than our international counterparts. This segment – which includes spending on nursing care, home health services, and other specialized freestanding centers (such as those for rehabilitation or substance abuse treatment) – grew annually at 6.6 percent in the 2006-2009 period, reaching $245 billion in 2009. Despite this rapid growth, the United States still spends less than half of what would be expected. Why do other developed countries spend more in this segment? Part of the gap is attributable to the fact that the U.S. population is slightly younger than the OECD average, and consequently makes less use of long-term and home care. We estimate that this accounts for about $50 billion, or 19 percent, of the gap. The more important factor, however, is the way in which long-term and home care is reimbursed. Unlike many other OECD countries that include long-term care in basic health coverage, private insurance in the United States does not typically cover this care. Medicare only covers long-term care for limited periods, generally for rehabilitation following hospitalization. This likely reduces consumption, as most Americans must pay for long-term and home care out-of-pocket unless they qualify for Medicaid.

Without significant private insurance coverage, public spending drove most of the growth in this segment. Medicare, Medicaid, and other government programs accounted for 65 percent of total spending and three-quarters of the $43 billion in growth between 2006 and 2009 (see Appendix II for additional detail). Greater utilization and intensity of treatment were the primary causes of this spending growth, not aging or increased patient volume. This is evident in both nursing care and home care.

Nursing care, which includes skilled nursing facilities and continuing care retirement communities, accounted for more than half of all spending on this segment and grew at an average annual rate of 5.4 percent between 2006 and 2009. Medicare spending fueled much of this growth, with average increases of 10 percent each year over this period. This rapid growth in spending was driven entirely by increased cost per beneficiary, as the total number of beneficiaries actually declined slightly. Increased spending per beneficiary, in turn, appears to have been driven by growth in the number and intensity of rehabilitation days.

By breaking Medicare-covered days down by resource utilization group, it becomes evident that virtually all of the growth in the 2006-2009 period was for treatment classified as “ultra high” rehabilitation (Exhibit 15). Care for this group, distinguished from other types of rehabilitation by the frequency and duration of therapy, grew at 28 percent each year between 2006 and 2009. It is possible that some of

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43 Medicare compensates skilled nursing facilities (SNFs) using a prospective payment system (PPS). In this system, base rates are adjusted to reflect geographic differences in labor costs as well as differences in case mix. Case mix is accounted for using a set of resource utilization groups (RUGs) which are weighted to reflect differences in the intensity of nursing and therapy required for different kinds of treatment. Beneficiaries are assigned to RUGs based on a mix of factors, including the presence of certain conditions, their ability to perform basic activities, and both the kinds of services and the number of minutes of therapy they are expected to require. Ultra-high rehabilitation is distinguished from other kinds on the basis of the number of therapies and the total minutes of therapy required.

44 Centers for Medicare and Medicaid Services.
this growth was due to increased patient acuity and the shifting of patients out of inpatient rehabilitation facilities to skilled nursing facilities.\textsuperscript{45} The fact that this was the utilization group with the highest reimbursement rate, however, also raises the possibility that some care providers may have shown preference to these rehabilitation services.\textsuperscript{46}

\textbf{Exhibit 15}

\textbf{Growth in Medicare covered days for skilled nursing facilities has been concentrated in utilization groups with the highest reimbursement rates}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
\textbf{Medicare covered days by RUG classification} & \textbf{CAGR\textsuperscript{2} 2006-2009} & \textbf{Reimbursement rate 2009\textsuperscript{1} (USD)} \\
\hline
\textbf{Millions of days} & \textbf{Percent} & \textbf{Reimbursement rate 2009\textsuperscript{1} (USD)} \\
\hline
Rehabilitation – ultra high & 28 & 529 \\
All other & - (7) & 346 \\
\hline
\end{tabular}
\end{table}

\textsuperscript{1} Median for RUG category; urban; case-mix adjusted; weighted average rate for 2009
\textsuperscript{2} Compound annual growth rate

\textsuperscript{Source: Centers for Medicare & Medicaid Services; McKinsey analysis}

A similar pattern was evident in home care. Although this segment accounted for just 28 percent of long-term and home care in 2009, home care was the fastest-growing portion of the sub-sector, with annual growth of 9.1 percent. This was fueled by public spending, with Medicare and Medicaid expenditures growing at more than 12 percent per year. As in nursing care, spending was driven not by the growth in beneficiaries but rather by the amount spent per beneficiary. The Medicare population receiving these services grew annually at only 2.7 percent between 2006 and 2009 and the Medicaid population actually shrank. At the same time, home health visits grew by more than 15 percentage points over this period, with the greatest growth coming from beneficiaries receiving more than 100 visits. It is possible that this increased activity was driven by changes in the composition and needs of the population receiving home care. Given the push to deliver care in lower cost settings, it may be that services previously provided in clinical settings are increasingly being provided in the home. However, the available evidence suggests that increased treatment severity or complexity was not the only cause of increased activity, as the growth in episodes of care was greatest among people for whom treatment was not preceded by hospitalization or a post-acute stay.\textsuperscript{47}

While recent growth in spending on long-term and home care has been strong, it is unclear whether it will persist. The segment is already as large as the retail prescription drug market, and is growing considerably faster. Furthermore, the growth has been fueled almost entirely by increased treatment intensity. As the baby-boom generation ages, the population making use of long-term and home care can be expected to grow as well, creating an increase in demand over the coming decades.

\textsuperscript{45} Due to a change in IRF regulations, the share of Medicare beneficiaries discharged from the hospital following a major joint replacement and released to SNFs increased by 4 percentage points between 2004 and 2009, while the share released to IRFs decreased. Medpac, Report to the Congress: Medicare Payment Policy, March 2011.

\textsuperscript{46} In its March 2011 report to Congress, Medpac reviews a number of potential explanations for the growth in the number and intensity of rehabilitation days and concludes that “It is unlikely that these increases reflect a change in patient care needs.”

\textsuperscript{47} Centers for Medicare and Medicaid Services.
Even so, predicting what future spending in this segment will look like is complicated by the market’s dependence on public funding. With the government paying nearly two-thirds of the costs for long-term and home care, spending will be heavily dependent on regulatory and reimbursement policies. This can change rapidly, with repercussions for the entire industry, as illustrated earlier this year when CMS announced that it would impose rate cuts of 11 percent on skilled nursing facilities in fiscal year 2012.\footnote{CMS announced this rate cut in July 2011 to address unexpected growth in nursing home payments. This growth was attributed to changes in reimbursement policies which had allowed nursing facilities to assign beneficiaries to the most expensive categories.}

These kinds of changes to reimbursement policies may well constrain spending growth in the near term.

Pharmaceuticals

At the start of the 21st century, spending on pharmaceuticals was a powerful force behind growth in healthcare costs. Prescription drugs were the single fastest growing segment of the health economy between 2003 and 2006. In the following 3 years, however, spending growth on pharmaceuticals slowed from 7.9 percent annually to just 4.4 percent each year.\footnote{This includes prescription drugs sold through standard retail channels, including mail order.}

Much of this change can be attributed to the initial launch, and subsequent leveling off, of the Medicare Part D prescription drug program. Medicare spending on pharmaceuticals skyrocketed between 2003 and 2006, as millions of retirees signed up for the drug benefit. As enrollment slowed, so too did the growth in spending. From 2006 to 2009, Medicare remained the fastest-growing source of payment, but average annual growth slowed to 11.5 percent (see Appendix II for additional detail).

The new prescription drug program explains much of the recent deceleration in growth, but does not explain the longer-term trend. Were it not for the boost from Medicare Part D, spending growth would have slowed fairly steadily from the start of the decade. The longer-term trend is explained largely by increased generic utilization. In 2009, generics accounted for 68 percent of all retail prescriptions, up nearly 13 percentage points from 3 years prior.\footnote{NACDS 2011-2012 Chain Pharmacy Industry Profile.}

Exhibit 16

**The pharmaceutical industry is facing an unprecedented wave of patent expirations over the next 5 years**

<table>
<thead>
<tr>
<th>Total prior-year U.S. sales of all drugs expiring in a given year</th>
<th>USD billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-2009 average: $10.6 billion</td>
<td>2003-2009 average: $10.6 billion</td>
</tr>
<tr>
<td>2010-2016 average: $21.7 billion</td>
<td>2010-2016 average: $21.7 billion</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>
Increased generic utilization has been driven by a number of factors – most notably the expiration of a number of high-value patents (Exhibit 16). Every year, on average, between 2006 and 2009, patents expired for drugs generating annual U.S. sales of about $10.6 billion. Once off patent, these drugs have experienced increasingly rapid generic substitution. In its 2010 Use of Medicines Report, IMS noted that brands that went off patent in 2010 lost 80 percent of their sales volume to generics within 6 months compared to a loss of 55 percent in the same amount of time for drugs that went off patent in 2006. Increased generic adoption has also been driven by Medicare part D plans, changes in benefit design that encourage generic use, increased awareness of lower-cost alternatives, and increasingly effective commercial strategies by generic manufacturers.

The shift toward increased generic utilization also reflects a slowdown in the rate at which significant new drugs are being developed and brought to market. Between 2005 and 2009, the FDA approved an average of 18 significant new molecular entities (NME) each year. There have been more approvals in 2011, with 21 in the first three quarters, alone, but this is still down significantly from an average of 31 new approvals each year between 1995 and 2005. This slowdown in NME approvals has been offset somewhat by a steady rate of approvals for new biological products.

Growth in the generic share of the retail drug market masked a substantial increase in the average cost per brand-name prescription. Ascertaining the true market price for branded drugs is complicated by manufacturer rebates, which vary widely and are not made public. Even so, we can determine that the average net price for a prescription grew about 2.3 percent each year between 2006 and 2009. Since the generic share of prescriptions increased substantially over this same period – driving the average cost of a prescription down – most of this growth can be attributed to price increases for branded drugs and a shift in the mix of prescribed medicines in favor of higher-cost products.

This trend is particularly important outside the retail pharmaceutical market due to a shift toward specialty products and biologics administered in clinical settings (and consequently reflected in outpatient and inpatient spending). While orally administered retail pharmaceuticals have been growing at record low levels – with consumption actually dropping slightly in 2010 on a per capita basis – growth in more expensive specialty products has been considerably stronger.

From an international perspective it is notable that much of the growth in pharmaceuticals was driven by sales outside the United States, especially in emerging markets. While the United States remains by far the largest market for prescription drugs in the world, it accounts for a declining share of global sales. In 2009, the United States accounted for 47 percent of the global market, down 8 percentage points from 2003.

While the United States continues to spend more on prescription drugs than would be expected based on spending levels in other developed countries, concern over cost is partially tempered by a competing concern that a shallow research pipeline may signal a slowdown in the pace of innovation. Slowing innovation may result in greater spending elsewhere, as patients not treated by new drugs or medical devices will be treated in other, often costlier ways, or face limited options. This can result in a lower quality or length of life for those with hard-to-treat conditions.

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51 This trend is expected to accelerate in the coming years. The pharmaceutical industry is anticipating a loss of market exclusivity on an unprecedented scale between 2011 and 2016, with products going off patent each year generating a combined average of $21.7 billion in annual U.S. sales. (Calculations based on data provided by Evaluate Pharma.)

52 Approvals for new biological products vary significantly from year to year, but averaged 9.6 per year between 2000 and 2009. The FDA reports 15 NME approvals in 2010 and 21 in the first three quarters of 2011 (PAREXEL Bio/Pharmaceutical R&D Statistical Sourcebook, 2010-2011: Food and Drug Administration Drug and Biologic Approval Reports).

About 7 percent of total U.S. healthcare spending goes toward health administration and insurance. This includes the administrative expenses for Medicare, Medicaid, CHIP, the Department of Veterans Affairs and the Department of Defense, as well as profits, taxes, and operational and administrative costs for private insurers. In 2009, spending in this segment reached $163 billion, two-and-half times above expected levels, but grew at a rate that was much slower than the pace recorded at the start of the decade.

As documented in our previous reports on healthcare spending, U.S. administrative costs are considerably greater than in other developed countries because of the unique nature of our multi-payer insurance system. In 2009 nearly 65 percent of Americans received their coverage from a myriad of competing private insurers. The arrangement is further complicated by a multi-state regulatory regime that requires insurers to comply with a mix of federal and local regulations. Consequently, the largest national insurers cannot offer the same health plans uniformly across the country. By contrast, the health insurance markets in most developed countries tend to be much less fragmented but offer less choice. While there are advantages to the U.S. model – such as increased competitive pressure to innovate and a greater emphasis on care and disease management – the fragmentation of the market also creates redundancies that increase spending.

Spending in this sector slowed dramatically from the pace seen earlier in the decade (Exhibit 17). Between 2006 and 2009, spending on health administration and insurance grew annually at just 1.6 percent, down from annual growth rates of 7.4 percent between 2003 and 2006 and 15.7 percent in the three preceding years as the industry recovered from negative profits. Spending on health administration and insurance actually decreased by 0.6 percent between 2008 and 2009.

This slowdown was driven by a dramatic decline in operational and administrative spending among private health insurers. Growth in administrative spending on private insurance declined almost every year since 2002 – from a high of 24 percent between 2001 and 2002, to a low of -8 percent between 2008 and 2009.

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54 This only includes the privately insured; it does not include people whose Medicaid or Medicare benefits are administered by private insurers.

55 This includes administrative spending on private insurance and workers’ compensation. It does not include administration expenses for privately administered government programs such as managed Medicaid, Medicare Part D or Medicare Advantage plans. The trends described here do not change significantly with the exclusion of administrative spending on workers’ compensation.
This is a volatile spending category, with significant year-to-year variation, and there are several potential explanations for the slowdown. The most important, however, is the shrinking of the privately insured population. As might be expected, the contraction of the private insurance market has resulted in lower administrative costs. Early estimates suggest that spending on private health administration and insurance grew substantially again in 2010 due to lower than expected utilization.

While administrative spending on private insurance fell, administrative costs in the public programs rose at an average annual growth rate of 9 percent between 2006 and 2009. Administrative costs for Medicaid grew annually by about 6.4 percent as enrollment increased. At the same time however, administrative costs for Medicare rose by 13.2 percent each year as enrollment grew at a modest annual rate of 2.5 percent. Medicare’s administrative costs per beneficiary tripled from $211 in 2003 to $666 in 2009. This was driven by the rapid shift toward privately administered Medicare benefits, primarily the Part D drug plan and the Medicare Advantage program. Between 2006 and 2009, administrative spending on privately managed Medicare benefits increased by 17.8 percent annually, while other Medicare administration expenditures grew by 1.4 percent each year. Importantly, this growth in spending on privately administered benefits does not necessarily reflect greater costs to the system overall. While administrative spending has clearly increased, this may not have increased total expenditures if these programs have helped reduce other types of medical spending.


57 This includes taxes and profits as well as administration and operating expenses incurred by private insurers managing Medicare Part D and Medicare Advantage Programs. These calculations are based on Medicare spending data reported in the NHE for “Government Administration and the Net Cost of Private Health Insurance.”
4. Key considerations leading into 2012 and beyond

2009 was a pivotal year in American health care. A year of extremes, it was marked by the highest level of spending on health care in history – both in real terms and as a share of GDP. It also saw the lowest rate of spending growth in 50 years and extended the longest stretch of continuous deceleration in spending since 1960. These developments arose from a host of factors, including changes in the way care is delivered, a decline in private spending, health benefit designs that put more financial responsibility on consumers, and a recession from which the country has struggled to recover.

While this report focused on healthcare spending trends during the 2006-2009 period, preliminary data indicate that many of the patterns have continued. Spending declined through 2010, falling to 3.9 percent from 4.0 percent the year before. The share of the population with private insurance continued to drop, while the share covered by public programs and the percent uninsured continued to rise. We have also seen sustained reductions in utilization, with growth in hospital admissions and physician visits down through 2010.\footnote{Based on numerous sources, including annual reports of publicly traded companies, analyst reports and published reports examining claims data; e.g., Gary Claxton and Larry Levitt, “The Economy and Medical Care,” The Henry J. Kaiser Family Foundation Health Reform Source, (http://healthreform.kff.org/notes-on-health-insurance-and-reform/2011/november/the-economy-and-medical-care.aspx).}

These trends raise an important question: Does the recent slowdown in spending growth reflect fundamental changes in the underlying system that portend a period of extended moderation, or is it simply a temporary dip that will give way again to more rapid growth? It may be several years before we know the answer to this question. In the meantime, however, we believe four factors will be particularly important in shaping the trajectory of future of U.S. healthcare spending.

The first three factors represent sources of uncertainty with important implications for healthcare spending in the near-term. These include the state of the economy, the impact of the Affordable Care Act, and the consequences of ongoing industry consolidation. This report has identified several ways in which the economic downturn has dampened spending growth. The loss of healthcare coverage, decreased wages, diminished wealth, tightening credit and increased economic uncertainty have all contributed to reduced healthcare consumption and slower growth in spending. These trends could be reversed by a strong economic recovery. With job growth, employer-sponsored insurance could rise and the number of uninsured may fall, as they have in previous recoveries.\footnote{J. Holihan and A. B. Garrett, “Rising Unemployment, Medicaid and the Uninsured,” Kaiser Commission on Medicaid and the Uninsured, January 2009.}

The uncertainty over the economy is compounded by the implementation of the ACA, which has immediate and far-reaching consequences. The structural forces behind the spending trends described in this report are still present, but are complicated by the new regulations and shifting incentives within the law. We face many unknowns related to the ACA, including the level of participation of individuals and employers in the state insurance exchanges, the robustness of these exchanges, the ability of the government to successfully act upon other cost-cutting measures, and the legal fate of the individual mandate.
Finally, the trajectory of healthcare spending will depend in part upon the pace and impact of ongoing consolidation across the healthcare system. A clear trend has been observed towards increased consolidation across multiple industries, including pharmaceuticals, health insurance and healthcare providers. The consequences that this will have for capacity, pricing, and operating efficiency by market, and its implications for spending, remain unclear.

In addition to these three more general considerations, we believe that the emerging shift toward value – both in payment models and in the decision-making of individual consumers – also has the potential to shape the direction of the spending trend over the long-term. The extent to which this shift continues and expands will provide one indication of how “transformed” the system has become.

For several years, the industry has been gradually shifting from volume-based reimbursement toward a “healthcare value” model designed to optimize the return on dollars spent as measured by health outcomes for acute conditions and/or health status of the population. This shift is most directly observed in delivery system models that pay for value through bonuses or some form of risk-sharing. These include early experiments with accountable care organizations, patient-centered medical homes and episode-based payments. Still in the developmental stage, each of these shares the goal of improved quality and performance, but employs different techniques for getting there. While there have been some early successes, the ability of these innovative models to optimize healthcare spend and their applicability across enough of the country to “make a difference” remains a hotly debated topic. In addition, the majority of care in the United States is reimbursed through a fragmented fee-for-service system. It remains to be seen how effectively and quickly industry stakeholders will navigate the “messy transition” of incentives, behaviors, and business models.

This shift in payment models has been accompanied by the emergence of consumers as a major participant in the healthcare value equation. Value-conscious consumers are increasingly entering the marketplace with a greater financial stake in healthcare purchases and with far greater choices in when, how and where they shop for services and products. Though the impact has been relatively limited thus far, the influence of consumers is likely to increase in coming years with the emergence of a larger individual insurance market, changes in financial incentives and penalties, a wider range of sites of care, as well as greater transparency regarding the performance of competing healthcare providers and alternative treatments. The impact that this will have remains uncertain. While increased consumer control over purchasing decisions could accelerate the shift towards health care value, this will depend upon the proper alignment of financial incentives to ensure that patients do not postpone necessary care for purely financial reasons – creating short-term savings with costly long-term consequences. It will also depend on access to the information required to make informed decisions, and, of course, the patient disease burden.

The next several years promise to be a dynamic period in the evolution of health care in the United States. The analysis in this report of the 2006-2009 period provides an important baseline on U.S. healthcare spending, and arms public, private and social sector leaders with the fact-base required to make informed judgments in the uncertain months and years ahead.
Appendix 1: Technical notes

Calculation of estimated spending according to wealth

This report evaluates U.S. spending on health care in the context of spending levels in other developed countries and the relative wealth of the U.S., as measured by GDP per capita.

The methods and data employed were consistent with the approach taken in the two previous reports in this series. Data published by the OECD were again compiled and analyzed for quality to ensure consistency across countries. The analysis included every OECD country for which complete healthcare spending data were available for 2009, with the exception of Norway (a statistical outlier due to its relatively small size and high per capita GDP). The resulting list consisted of sixteen countries: Austria, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Netherlands, Poland, Slovak Republic, Slovenia, South Korea, Spain, and Sweden. Additionally, four countries had complete data in every category except investment: Belgium, Iceland, New Zealand and Switzerland. These four were included with the above 16 in all the individual category regressions.

To assess potential discrepancies between the United States and other OECD countries in per capita spending in each of the cost categories analyzed, we ran regression analyses correlating each nation’s spending against its per capita GDP and adjusted both of these metrics by dollars at purchasing power parity. We see that per capita GDP is a strong predictor of per capita healthcare spending and that, as a superior good, health care is consumed in greater proportions as GDP rises.

This information was used to estimate expected spending in the United States – both in aggregate and by different segments of the health economy – according to per capita GDP. This provides a baseline – Estimated Spending According to Wealth (ESAW) – against which actual spending levels can be compared.

Changes in the methodology since our 2003-2006 report

While the general methodology has not changed, the calculation of ESAW in 2006 has been revised since the publication of the last report in this series. In 2008, we reported that the U.S. spent $643 billion above ESAW in 2006 – approximately 31 percent of total national health expenditures that year. In this report, we have revised the figure to $478 billion (22 percent of total spending) in 2006. This adjustment reflects three changes in the analysis: 1) retrospective adjustments to the OECD healthcare spending data; 2) the inclusion of additional countries in the ESAW calculation due to greater data availability; 3) and the inclusion of an additional OECD spending category in the analysis of long-term and home care. The added OECD spending category is not a major one for many countries, and sits outside total healthcare spending codes. However, this category includes social spending which fits within our definition of long-term and home care. Further, due to differences in the way that healthcare spending is accounted for in different countries, it is also quite substantial for a small number of the countries included which otherwise appear to spend disproportionately little on long-term care.
Analysis from the Lewin Group

In addition to a number of publicly available and purchased data sets, this report has also drawn on analysis by The Lewin Group. The Lewin Group is a division of OptumInsight (formerly Ingenix), a part of Optum. OptumInsight is a provider of health information, technology and consulting services, and is a wholly owned subsidiary of UnitedHealth Group. The Lewin Group performed an analysis of the OptumInsight proprietary claims database and provided the following information:

- Utilization of surgical procedures, per thousand members, by type of service, location or setting, 2006-2009
- Utilization of surgical procedures, per thousand members, by specialty, 2006-2009
- Utilization of surgical procedures per thousand members that have undergone a significant shift from hospital inpatient to hospital outpatient settings between 2006-2009
- Utilization of surgical procedures, per thousand members, that have undergone a significant shift from hospital to non-hospital settings between 2006-2009
- Office visits, per thousand members, by physician type (primary care, medical specialty, surgical specialty), 2006-2009.

This analysis was conducted using data from a special-purpose, multi-payer dataset constructed from de-identified, HIPAA-compliant transaction-level claims for the years 2006-2009 from private commercial insurance (PCI) plans and self-funded employer group health plans (EGHPs). The PCI data source consists of transaction-level claims data for more than 14 million covered lives annually from all 50 states and DC. EGHP data represent a similar nationally diverse sample drawn from more than 9 million lives annually. Aggregated PCI and EGHP data from 2006-2009 include more than 23 million lives with continuous enrollment for more than 36 months.

The distribution of ages in the dataset is concentrated between birth to age 64 (0-64) and is skewed toward ages 0-54 relative to the national PCI and EGHP population. The dataset includes nontrivial records for individuals over age 65 up to age 80 years. Sex, ethnicity, and racial distributions closely resemble the national PCI/EGHP population (2008): the variance is approximately 0.5 percent by sex and 0.5 percent for Hispanic members, 1 percent for Asian, 2 percent for Caucasian and approximately 4.5 percent for African Americans.

Significant analysis was required to identify those procedures which exhibited the most substantial movement to hospital outpatient and non-hospital outpatient settings. In order to develop procedure-level data, The Lewin Group first had to reclassify and group claim information into episodes of care, defined by type of surgery, date of service and unique patient identifier. Episodes were classified on the basis of the defining or major component of the care episode. For example, episodes that represent care received during removal of the gall bladder were defined by claims for the cholecystectomy procedure (i.e., CPT codes within the range of 47562-47620) and claims related to anesthesia or pathology services that were secondary or incidental to the surgery itself were grouped with primary procedure claims into a single cholecystectomy episode. The care setting was then determined for each episode (i.e., inpatient vs. outpatient, etc.) based on the place of service for the primary CPT code. The annual frequencies of each type of episode within each setting were tabulated for the years 2006-2009, and the results compared across years to identify specific procedures that had moved from inpatient to outpatient within a hospital or from a hospital to a non-hospital setting. Specific procedures were then identified on the basis of which had exhibited the greatest change – either in percent share or absolute share – depending on the volume of procedures.
Changes to data

The U.S. 2009 GDP numbers were revised slightly on July 31, 2011 (http://www.bea.gov/national/an1.htm#2009ComprehensiveRevision). Since this update has not been processed in the OECD dataset, we kept the earlier reported numbers.
Appendix II: Backup exhibits

Appendix exhibit A1

The number of Americans receiving support from public programs has increased 22% since 2003 while the number with private insurance has declined

Growth in the number of people insured through public and private programs
Percent growth in total covered lives since 2003

SOURCE: Centers for Medicare & Medicaid Services; US Census Bureau; McKinsey analysis
Appendix exhibit A2

Nearly a quarter of spending above ESAW can be attributed to research and training premiums

Research and training premium vs. spending above ESAW

<table>
<thead>
<tr>
<th>Source</th>
<th>Research and training premium</th>
<th>Spending above ESAW (2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicare - DGME</td>
<td>11.1</td>
<td>47.0</td>
</tr>
<tr>
<td>Medicare - IME</td>
<td>6.5</td>
<td></td>
</tr>
</tbody>
</table>

24% of total gap vs. ESAW

Key components of research and training premium

<table>
<thead>
<tr>
<th>Component</th>
<th>USD billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implied cross-subsidization for net loss on research after indirect cost recoveries</td>
<td>11.1</td>
</tr>
<tr>
<td>Medicare - DGME</td>
<td>1.6</td>
</tr>
<tr>
<td>Medicare - IME</td>
<td>3.0</td>
</tr>
<tr>
<td>Medicare - IME</td>
<td>6.5</td>
</tr>
</tbody>
</table>

SOURCE: US Department of Health and Human Services; Centers for Medicare & Medicaid Services; McKinsey analysis

Appendix exhibit A3

Summary of spending growth 2003-2009: Outpatient care

Breakdown of health care spend in 2009

<table>
<thead>
<tr>
<th>Source</th>
<th>Percent share (100% = $2,486 billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatient care</td>
<td>41%</td>
</tr>
<tr>
<td>Medicare</td>
<td>8.8%</td>
</tr>
<tr>
<td>Medicaid, other federal / state</td>
<td>7.9%</td>
</tr>
<tr>
<td>Private</td>
<td>8.8%</td>
</tr>
</tbody>
</table>

Growth in spending, 2003-09

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth (USD billions)</th>
<th>+6.2% p.a.</th>
<th>+7.2% p.a.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>689</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>744</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>800</td>
<td></td>
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<td>2006</td>
<td>850</td>
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<td></td>
</tr>
<tr>
<td>2007</td>
<td>903</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>959</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>1,019</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Breakdown of spending growth by source

<table>
<thead>
<tr>
<th>Source</th>
<th>Percent CAGR 1</th>
<th>2003-06</th>
<th>2006-09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of pocket</td>
<td></td>
<td>6.1</td>
<td>3.2</td>
</tr>
<tr>
<td>Private</td>
<td></td>
<td>7.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Medicaid, other federal / state</td>
<td></td>
<td>7.9</td>
<td>9.4</td>
</tr>
<tr>
<td>Medicare</td>
<td></td>
<td>8.8</td>
<td>8.5</td>
</tr>
</tbody>
</table>

SOURCE: OECD; Centers for Medicare & Medicaid Services; McKinsey analysis

1 Compound annual growth rate
Appendix exhibit A4

Summary of spending growth 2003-2009: Inpatient care

Breakdown of health care spend in 2009
Percent share (100% = $2,486 billion)

<table>
<thead>
<tr>
<th>Source</th>
<th>2003-06</th>
<th>2006-09</th>
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<tbody>
<tr>
<td>Out of pocket</td>
<td>6.0</td>
<td>3.9</td>
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<td>Private</td>
<td>6.7</td>
<td>2.0</td>
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<td>Medicaid, other federal/state</td>
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<tr>
<td>Medicare</td>
<td>5.5</td>
<td>3.2</td>
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</tbody>
</table>

Breakdown of spending growth by source
Percent CAGR

SOURCE: OECD; Centers for Medicare & Medicaid Services; McKinsey analysis

Appendix exhibit A5

Summary of spending growth 2003-2009: Long-term and home care

Breakdown of health care spend in 2009
Percent share (100% = $2,486 billion)

<table>
<thead>
<tr>
<th>Source</th>
<th>2003-06</th>
<th>2006-09</th>
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<tbody>
<tr>
<td>Out of pocket</td>
<td>4.2</td>
<td>4.5</td>
</tr>
<tr>
<td>Private</td>
<td>1.6</td>
<td>3.2</td>
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<tr>
<td>Medicaid, other federal/state</td>
<td>5.5</td>
<td>5.9</td>
</tr>
<tr>
<td>Medicare</td>
<td>14.7</td>
<td>11.2</td>
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</table>

Breakdown of spending growth by source
Percent CAGR

SOURCE: OECD; Centers for Medicare & Medicaid Services; McKinsey analysis
### Appendix exhibit A6
Summary of spending growth 2003-2009: Pharmaceuticals

#### Breakdown of health care spend in 2009
Percent share (100% = $2,486 billion)

#### Growth in spending, 2003-09
USD billions

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth % p.a.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td></td>
</tr>
<tr>
<td>2004</td>
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<td></td>
</tr>
<tr>
<td>2008</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
</tr>
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#### Breakdown of spending growth by source
Percent CAGR

<table>
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<tr>
<th>Source</th>
<th>2003-06</th>
<th>2006-09</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Private</td>
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<td>3.1</td>
</tr>
<tr>
<td>Medicaid, other federal / state</td>
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</tr>
<tr>
<td>Medicare</td>
<td>151.8</td>
<td>11.5</td>
</tr>
</tbody>
</table>

1 Compound annual growth rate

SOURCE: OECD; Centers for Medicare & Medicaid Services; McKinsey analysis

### Appendix exhibit A7
Summary of spending growth 2003-2009: Health administration and insurance

#### Breakdown of health care spend in 2009
Percent share (100% = $2,486 billion)

#### Growth in spending, 2003-09
USD billions

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth % p.a.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
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<tr>
<td>2004</td>
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<td>2007</td>
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<tr>
<td>2008</td>
<td></td>
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<tr>
<td>2009</td>
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</tr>
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</table>

#### Breakdown of spending growth by source
Percent CAGR

<table>
<thead>
<tr>
<th>Source</th>
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<th>2006-09</th>
</tr>
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<tbody>
<tr>
<td>Out of pocket</td>
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<td>--</td>
</tr>
<tr>
<td>Private</td>
<td>4.0</td>
<td>-2.3</td>
</tr>
<tr>
<td>Medicaid, other federal / state</td>
<td>7.5</td>
<td>5.5</td>
</tr>
<tr>
<td>Medicare</td>
<td>35.1</td>
<td>13.2</td>
</tr>
</tbody>
</table>

SOURCE: OECD; Centers for Medicare & Medicaid Services; McKinsey analysis
McKinsey Center for U.S. Health System Reform

Accounting for the cost of U.S. health care:
Pre-reform trends and the impact of the recession