C H A P T E R   5

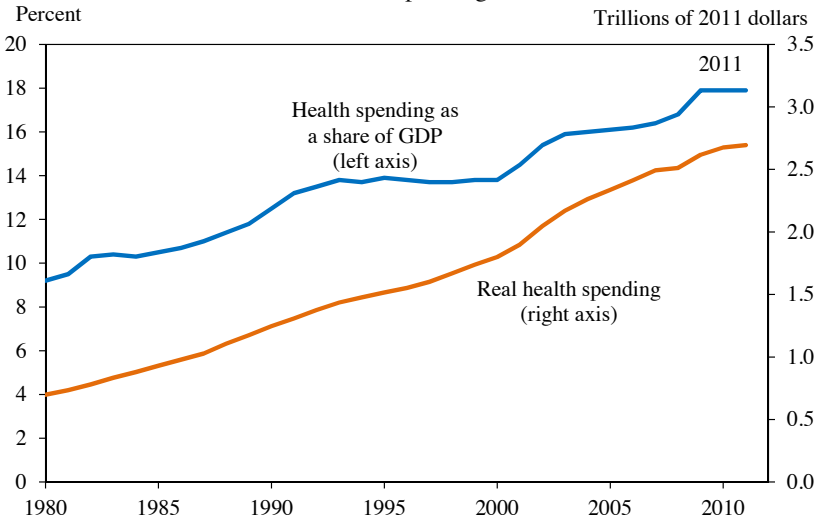# REDUCING COSTS AND IMPROVING THE QUALITY OF HEALTH CARE

In March 2010, the President signed into law the Affordable Care Act. Provisions of the Act have already helped millions of young adults obtain health insurance coverage and have made preventive services more affordable for most Americans. When fully implemented, the law will expand coverage to an estimated 27 million previously uninsured Americans and ensure the availability of affordable comprehensive coverage through traditional employer-sponsored insurance and new health insurance marketplaces or exchanges. There are signs that the Affordable Care Act has started to slow the growth of costs and improve the quality of care through pay-for-performance programs, strengthened primary care and care coordination, and pioneering Medicare payment reforms. These provisions, as well as others in the Affordable Care Act, will help to bend the cost curve downward while laying the foundation for moving the health care system toward higher quality and more efficient care.

HEALTH CARE SPENDING

Health care spending has increased dramatically over the past half century, both in absolute terms and as a share of gross domestic product (GDP) (Figure 5-1). Spending in the U.S. health care sector totaled $2.7 trillion in 2011, up by a factor of 3.9 from the $698.3 billion (in 2011 dollars) spent in 1980. Health care spending in 2011 accounted for 17.9 percent of GDP—almost twice its share in 1980.

Some of the increase in health care spending is attributable to demographic changes. Of the real increase in spending on prescription drugs, office-based visits, hospitalizations, and all other personal care from 1996 to 2010, for example, 11.5 percent can be accounted for by the changing

Figure 5-1
GDP and Health Spending, 1980–2011

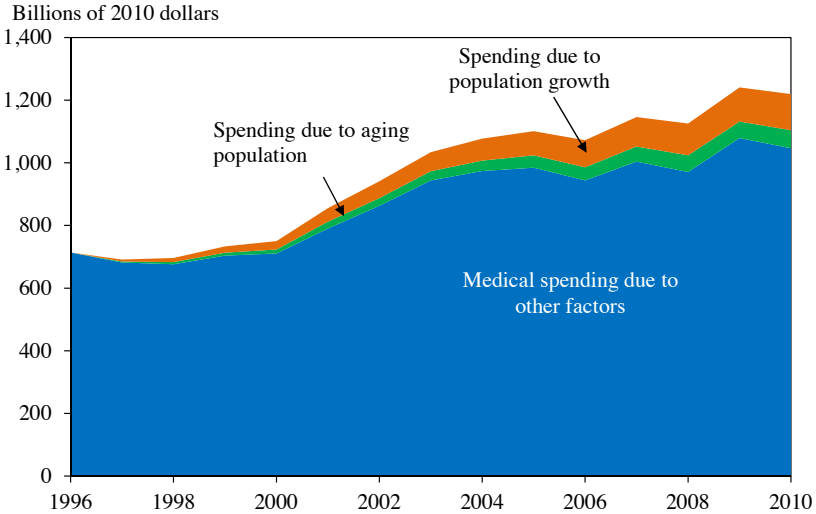Percent   Trillions of 2011 dollars

Source: Centers for Medicare and Medicaid Services, National Health Expenditure
Accounts; Bureau of Economic Analysis, National Income and Product Accounts; CEA
calculations.

age structure of the population and 22.8 percent can be accounted for by
increases in the size of the population (Figure 5-2).[1] The effects of popu-
lation aging will become a more important driver of higher spending in
coming years; by 2030, one in five Americans will be over age 65, com-
pared with only one in eight today, and per capita medical costs in a given
year are approximately three times greater for those 65 and over than for
younger individuals. The majority of the increase in health care spending,
historically, has come from increases in the amount spent per person over
and above any effects attributable purely to population aging and population
growth, reflecting increases in the use of medical services driven at least in
part by the development of new technologies and increases in unit costs that
exceed the overall rate of inflation.

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[1] Total annual spending on prescription drugs, office-based visits, hospitalizations and other
personal care between 1996 and 2010 was estimated using the Medical Expenditure Panel
Survey (MEPS). To estimate the effect of changes in the age distribution between 1996 and
2010 on spending, age-specific spending levels and total U.S. population were held constant
at 1996 levels, but the proportion of the population within each age group was allowed to
reflect the 2010 age distribution. To estimate the effect of population growth between 1996
and 2010 on spending, total spending increases were calculated holding age-specific spending
levels constant at 1996 levels, but allowing both the age distribution and total population to
reflect their 2010 values. Then, the estimated spending increases due to changes in the age
distribution were subtracted from this figure.

Figure 5-2
Contribution of Population Growth and Aging
to Health Care Spending, 1996–2010

Billions of 2010 dollars

Source: Department of Health and Human Services, Agency for Healthcare Research and
Quality, Medical Expenditure Panel Survey; CEA calculations.

Long-Term Spending Growth

Why has health care spending risen so much, even after taking into
account changes in the size and age mix of the population? A likely piece of
the story is that long-term growth in health care wages has not been accom-
panied by corresponding labor-saving technological progress. The theory of
"cost disease" as developed by Baumol and Bowen (1966) notes that labor-
saving technological progress has led to significant increases in labor pro-
ductivity and hence wage growth in some important parts of the economy
(such as the manufacturing sector). To compete for workers, labor-intensive
sectors such as health care, education, and the performing arts also must
raise their wages. According to the theory, productivity growth has been
slower in these sectors. The result, the argument concludes, is an increase in
the relative cost of output in these labor-intensive sectors, as higher costs are
passed on to consumers in the form of higher prices.

Consistent with this theory, Nordhaus (2006) found that labor-inten-
sive sectors generally experienced rising relative prices between 1948 and
2001. Nordhaus also found that shifts in labor from sectors that experienced
labor-saving technological progress to sectors that remained relatively labor-
intensive lowered overall productivity growth, as the share of labor-intensive
sectors in overall output rose over the second half of the 20th century.

The cost-disease diagnosis assumes that, in labor-intensive sectors, it is difficult to reduce the amount of labor required to produce a given set of outputs. The health care sector, however, has experienced substantial technological progress, as new pharmaceutical therapies, diagnostic and medical devices, and surgical procedures have been introduced, allowing many conditions to be treated more effectively than in the past.

While some of these innovations have been labor-saving (some pharmaceuticals, for example), most others are complementary to expensive specialist labor (such as imaging and advances in surgical procedures). Consequently, technological change in medicine has caused the cost per treatment to rise, even as improvements in clinical effectiveness have led to increases in medical productivity. Technological change in medicine has contributed to long-term increases in spending. A recent study found that a quarter to a half of the rise in health care spending since 1960 can be explained by technological change in the health care system (Smith, Newhouse, and Freeland 2009). And rather than satisfying a relatively fixed demand for health care at lower cost, the development of many of these new technologies has contributed to an increase in the demand for health care services.

For some researchers, the importance of technological change for health care spending points to increases in demand as an additional explanation to the cost disease theory for why health care spending has increased disproportionately with income. If health care is a "super-normal good"—a good associated with an elasticity of consumption with respect to income that is greater than one—then as incomes rise by a certain percentage, consumption of health care rises by a greater percentage. Hall and Jones (2007) argue that this can happen if, after achieving a certain level of consumption, individuals prefer to spend additional income on life-extending health care (which allows for consumption in the extended years of life) rather than on extra consumption now. Consequently, as incomes rise, people choose to spend ever more on health care over other goods.

The disproportionate effect of income on the demand for health care may also operate through larger institutional mechanisms. Consistent with this idea, Smith, Newhouse, and Freeland (2009) find that income growth affects health care spending growth primarily through the actions of governments and employers on behalf of large insurance pools, suggesting a key role for payment reform in affecting medical spending growth.

These factors are not only a U.S. phenomenon. Indeed, while the United States has higher levels of health care spending than other members of the Organisation for Economic Co-operation and Development (OECD), the annual real rate of growth in health care spending per capita in the
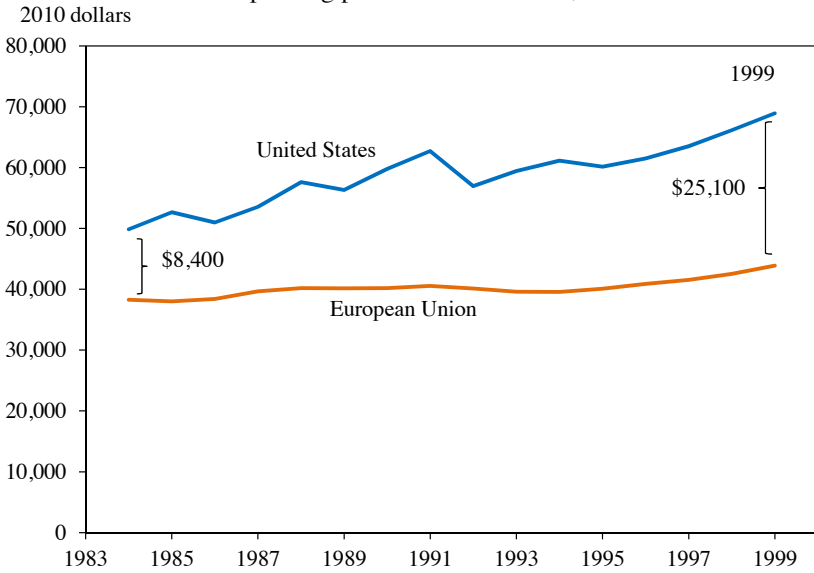
United States between 1960 and 2010 was not too different from elsewhere, averaging 4.13 percent compared with 3.62 percent in the other OECD countries, adjusted for purchasing power parity. In more recent years, health care spending has continued to grow at similar annual real rates—3.10 percent in the United States and 3.30 percent in the other OECD countries between 2000 and 2010, somewhat below the long-term rates of spending growth observed since 1960.

Medical Productivity

Productivity growth in health care largely has taken the form of improvements in the quality of care, with developments in new procedures and care practices contributing to increased survival, decreased morbidity, reduction in pain, and less onerous treatment administration in many cases.
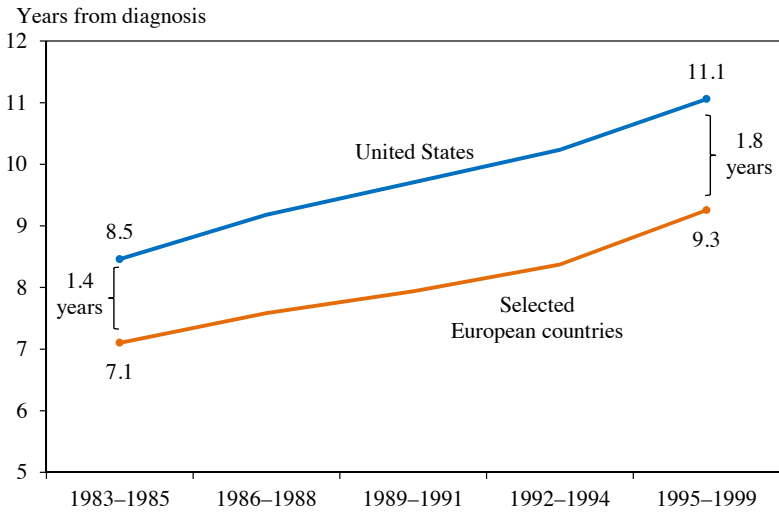
A full accounting of medical productivity growth should reflect changes not only in cost per service but also in health outcomes. However, medical productivity is often hard to measure because health outcomes are hard to measure. Recent studies comparing increases in life expectancy to increases in treatment costs over time suggest that productivity growth in the health care sector has been enormous. For example, Cutler and McClellan (2001) found that the value of increased survival rates and decreased morbidity rates as a result of improved treatment of heart attacks, low-birth-weight infants, and depression over the past few decades has far exceeded the increased spending on these conditions over the period. Using a similar methodology, Philipson et al. (2012) found that survival gains across all cancer patients in the United States between 1983 and 1999 cost on average only $8,670 per life-year gained. Estimates of the value of a statistical life-year, based on compensating wage differentials that measure the implied trade-off between wages and increased risk of fatality, are typically multiples higher (Viscusi and Aldy 2003). Therefore, even if some piece of the apparent gain in longevity results from earlier diagnosis, the introduction of these cancer therapies represents an enormous improvement in productivity. Faster growth in spending on cancer treatment in the United States than in Europe over this period is sometimes mistakenly taken to indicate the inefficiency of U.S. medical care, but it is also the case that the improvement in life expectancy for cancer patients was greater in the United States than in Europe. From 1983 to 1999, U.S. spending per cancer patient rose by $16,700 (in 2010 dollars) more than European spending per cancer patient (Figure 5-3), and U.S. cancer patient life expectancy rose by 0.4 years more than European cancer patient life expectancy (Figure 5-4), implying a cost per extra life year saved of approximately $42,000. Given the consensus

Figure 5-3
Cancer Spending per New Cancer Case, 1983–1999

2010 dollars

Source: Philipson et al. (2012), updated data provided by the authors.

Figure 5-4
Life Expectancy after Cancer Diagnosis, 1983–1999

Years from diagnosis

Note: European countries included are Finland, France, Germany, Iceland, Norway, Slovakia, Slovenia, Sweden, Scotland, and Wales.
Source: Philipson et al. (2012), updated data provided by the authors; Surveillance, Epidemiology and End Results (SEER); European Cancer Registry (EUROCARE).

in the literature that the value of additional life-years is much higher, the additional U.S. spending has been a good value.

Murphy and Topel (2006) directly estimate the aggregate monetary value of increases in longevity, finding that, if valued in the national accounts, increases in life expectancy since 1970 would have added $3.2 trillion a year to national wealth. While a different set of assumptions about the statistical value of a life year, the elasticity of intertemporal substitution, and the value individuals place on non-working hours lowers the aggregate valuation of the observed longevity increase, the order of magnitude of the estimated valuation nonetheless suggests an enormous return to the increase in health care spending over this period.

In general, estimating how much the productivity of health care has grown is a difficult task. Changes in health outcomes, morbidity rates, and patient convenience are hard to measure, hard to attribute to the use of specific technologies, and hard to value. Furthermore, limitations in available data mean that spending often cannot be disaggregated to the treatment of specific diseases or patients. Given these difficulties, it is widely agreed that aggregate measures of the output of the health care sector do a poor job of capturing the effects of productivity growth. Developing better methods to measure real output and productivity growth in health care is an important area of ongoing research (Data Watch 5-1).

Sources of Inefficiency in Health Care Spending

Although growth in overall medical productivity has been large, not all increases in medical spending are productive. Cutler and McClellan (2001) showed that improved treatment of heart attacks produced significant increases in patient longevity between 1984 and 1998. By contrast, Skinner, Staiger, and Fisher (2006) found little improvement in survival rates among heart attack patients between 1996 and 2002 despite significant growth in treatment costs. The latter study also found that the regions with the largest increases in spending also experienced the smallest gains in survival. Geographic variation in practice patterns and health outcomes implies that more than 20 percent of Medicare spending on heart attack treatment produces little health value (Skinner, Fisher, and Wennberg 2005). The case of heart attack treatment points to more general inefficiencies in the allocation of spending within the health care system.

Among the many possible sources of spending inefficiencies, several stand out as key sources of waste. First, the fragmentation of the delivery system contributes to a failure to provide patients with necessary care. That in turn can lead to complications and readmissions, particularly for the chronically ill for whom care coordination is most essential for health.

Data Watch 5-1: Toward Disease-Based Health Care Accounting

Existing national data on health expenditures generally are organized by the type of medical care that individuals purchase (such as doctor visits or drugs). For addressing questions related to the productivity of health care, however, data on health care spending by disease would be far more useful.

Switching to disease-based accounting poses a challenge because patients often suffer from more than one disease at once, making it difficult to allocate spending to specific diseases. Three conceptual approaches to allocating spending across disease have been suggested: tracking each encounter with the health care system; tracking disease "episodes"; or identifying all conditions a person has and using regression analysis to allocate spending to diseases. All three approaches have advantages and limitations, and a consensus has not yet developed on which one is preferable. Whichever approach is adopted, the universe of conditions will need to be categorized into a set of disease groups, at an appropriate level of detail, to which medical costs then can be assigned for analysis.

The Medical Expenditure Panel Survey (MEPS) is a nationally representative survey that provides information on most health spending, although it fails to capture spending on behalf of institutionalized patients and active duty military. The MEPS sample is too small, however, to represent rare conditions. Although not comprehensive in their coverage, data on health care claims provide another valuable—and potentially much more detailed—source of information on health care spending. In addition to data on spending, data on health outcomes that can be linked to the disease-based spending data also are needed.

Important progress has been made toward developing disease-based health care data. The Bureau of Economic Analysis is working on a health care satellite account that will provide disease-based measures of household medical expenditures. These estimates will be based on private insurance claims data, Federal data on Medicare and Medicaid spending, and data from MEPS on the uninsured. Simultaneously, the Bureau of Labor Statistics is developing disease-based price indexes that account for shifts in treatment patterns. These indexes will be useful to the Bureau of Economic Analysis for decomposing spending into changes in prices versus changes in quantities.

The Affordable Care Act has significantly increased funding for research on patient-centered outcomes, and data will be available to qualified entities to evaluate the performance of providers and suppliers with respect to quality, efficiency, effectiveness, and resource use. Under the President's Open Data initiative, the Department of Health

and Human Services has launched a Health Data Initiative to promote the availability of Medicare and Medicaid data, where appropriate, to researchers and entrepreneurs. Paralleling these initiatives, the Health Care Cost Institute, a nonprofit organization, has developed a claims database to be made available to researchers to foster a better understanding of what drives health care costs. These administrative data on claims hold the potential for further progress on understanding the drivers of health care spending increases and identifying high value medical care.

Second, lack of care coordination also contributes to duplicate care and overtreatment, a source of waste exacerbated by payment systems that compensate physicians based on the number of services provided (see Economic Applications Box 5-1). Overuse of expensive medical technologies is particularly costly, and some research suggests that a significant portion of coronary artery bypass graft surgery, angioplasty, hysterectomy, cataract surgery, and angiography is of questionable or low medical value (Goldman and McGlynn 2005).

Third, the failure of providers to adopt widely recognized best medical practices also contributes to waste. These failures include lack of adherence to established preventive care practices and patient safety systems, as well as widespread failure to adopt best treatment practices. In cases where the best medical practice is both clinically more effective and lower in cost—for example, the use of beta blockers in the treatment of acute myocardial infarction (Skinner and Staiger 2005, 2009)—failure to follow these practices results in worse clinical outcomes and higher readmissions and contributes to wasteful spending.

Finally, payment fraud also adds to system waste, not only through inappropriate payments but also through the administrative burden on honest providers who must adhere to the regulatory requirements of unavoidable but burdensome fraud detection systems.

Taken together, fragmentation of care, overtreatment, failures of care delivery, and payment fraud have been estimated to account for between 13 and 26 percent of national health expenditures in 2011 (Berwick and Hackbarth 2012). The magnitude of this waste offers an equally large opportunity for spending reductions and improvement in quality of care—an opportunity that underpins many of the provisions of the Affordable Care Act.

Economics Application Box 5-1: Matching in Health Care

Traditional economic analysis focuses on markets in which prices and quantities adjust so that in principle, supply equals demand. In some markets, however, prices do not exist and cannot be used to allocate resources. Gale and Shapley (1962) made early theoretical contributions to our understanding of how markets can be designed to allocate resources efficiently in the absence of prices. Taking the "marriage market" as an example, Gale and Shapley studied how, in the absence of prices, these markets can produce stable matches—matches where no alternative pairing would make both individuals in any match better off. These principles were extended by Roth, who applied them to the practical design of market institutions—for example, the market for medical students in residency programs (Roth 1984), and the assignment of students to public high schools in New York City and Boston (Abdulkadiroglu, Pathak, and Roth 2005). For these pioneering contributions, Shapley and Roth were awarded the 2012 Nobel Prize in Economic Sciences.

The market for live kidney transplants is yet another market where prices do not determine allocation. Paying for organs is a felony under the 1984 National Organ Transplant Act. Patients can receive a kidney from a compatible donor or are placed on a waiting list for a cadaveric kidney. Currently, nearly 95,000 patients in the United States are waiting for a kidney transplant. Dialysis for these patients costs approximately $60,000 a year, for a total of $30 billion a year, or 6.7 percent of total Medicare spending, the single most expensive component of Medicare. In 2011, there were about 11,000 transplants of deceased donor kidneys and only 5,770 transplants from living donors; in the same year, more than 4,700 patients died while waiting for a kidney transplant.

Many patients have willing potential donors. However, immuno-logical incompatibility greatly limits the number of transplants using live kidneys, which are preferred to cadaverous kidneys for their tissue quality and greater longevity. Patients receiving a live kidney transplant are estimated to live 10-15 years longer than they would on dialysis.

Increasing exchanges between incompatible patient-donor pairs would greatly expand the opportunity for dialysis patients to receive a living donor kidney, and increase the quality of matches. In paired kidney exchanges, a donated kidney from one (immunologically incom-patible) patient-donor pair is transplanted in the patient of a second patient-donor pair, and vice versa. The potential for improving the number of live kidney transplants is greater with "chains"—exchanges involving many donor-recipient pairs. The 2007 amendment to the National Organ Transplant Act clarified that kidney paired donations

(KPD) do not constitute "valuable consideration" (that is, financial compensation), thereby paving the way for the creation of KPD exchanges.

The economic principles of stable matches developed by Shapley and Roth can be applied to KPD exchanges. Whereas the concept of stability in the medical residency setting, for example, is based on the mutual preferences of medical students and residency programs, stability in a kidney exchange is primarily based on obtaining the best matches along immunological criteria. Using these principles, transplant centers have established KPD programs, as have nonprofit organizations such as the New England Program for Kidney Exchange, founded by Roth and colleagues. Congress also established a national KPD pilot program, operated under the Organ Procurement and Transplantation Network (OPTN) as a nonprofit under Federal contract.

In 2011, the separate pilot KPD programs, including OPTN, resulted in 430 transplants—a promising start to paired kidney exchanges, but nevertheless representing only a fraction of the potential number of possible transplants.

Computer models suggest that many more transplants could be achieved each year if there were a nationwide pool of all eligible donors and recipients. A larger pool of eligible donor-recipient pairs also could potentially increase the quality of matches. A living kidney transplant (and all subsequent care) saves money over dialysis after roughly two years. On average, Medicare would save $60,000 a year for every patient who receives a living kidney transplant rather than continuing to receive dialysis, all while increasing the life expectancy of a kidney recipient by 10–15 years, again relative to dialysis treatment.

Early Implementation of the Affordable Care Act

The Affordable Care Act includes a series of provisions that will transform the Nation's health care system. By expanding coverage, the health reform law stabilizes insurance markets and makes health insurance affordable. The Affordable Care Act also includes important provisions that are aimed at reducing inefficient spending, promoting competition, and improving the quality of medical care.

Economic Benefits of Insurance

Insurance provides important economic benefits to covered households. It covers unforeseen medical expenditures, allowing individuals to receive necessary medical treatment without suffering potentially crippling financial consequences.

The 2008 Medicaid expansion in Oregon provided a unique setting in which to study the effects of health insurance on health and financial security. Because access to the Oregon Medicaid coverage expansion was offered through a lottery, the benefits of insurance could be estimated without the usual statistical concerns that purchasers of insurance differ from non-purchasers in ways related to health and financial outcomes. Finkelstein et al. (2011) found that, after one year of Medicaid coverage, previously uninsured adults in Oregon were 10 percent less likely to report having depression and 25 percent more likely to report their health as good, very good, or excellent. They also experienced lower financial strain because of medical expenses, including lower out-of-pocket expenditures, lower debt on medical bills, and lower rates of refused medical treatment because of medical debt, than individuals who were not randomly assigned to Medicaid coverage.

The benefits of having insurance coverage are large. A recent study (CBO 2012a) estimated that the insurance value of Medicaid to enrollees in the lowest quintile of income earners is equivalent to 11 percent of their before-tax income, defined by the CBO as market income plus cash transfers. As a comparison, real average before-tax incomes in the lowest quintile rose 15 percent between 1995 and 2009, while real incomes in the highest quintile rose 24 percent. Hence, the value of Medicaid is roughly comparable to the additional income that would have kept average income in the lowest quintile growing at the same rate as average income in the highest quintile.

Expanding Affordable Health Insurance Coverage

The Affordable Care Act is projected to increase the number of insured individuals in the United States by 14 million in 2014 and by 27 million in 2022 (CBO 2012b). The requirement that health insurance plans offer dependent coverage to children up to age 26 went into effect in 2010. Sommers (2012) found that this provision resulted in more than 3 million uninsured young adults gaining health insurance between September of 2010 and December of 2011.

Looking ahead to 2022, the Congressional Budget Office (CBO 2012b) projects that the Affordable Care Act will lead to an additional 12 million people being insured through Medicaid and the Children's Health Insurance Program (CHIP), with the remainder of the estimated 27 million newly insured individuals covered through employer-based insurance, the Affordable Insurance exchanges, or the Small Business Health Options Program (SHOP) exchanges (Economics Application Box 5-2). The law likely will cause some firms that currently do not offer health benefits to begin doing so, and some workers who are currently uninsured will take up employer coverage that is already offered. At the same time, the new

Economics Applications Box 5-2: Economics of Adverse Selection and the Benefits of Broad Enrollment

In health insurance markets, adverse selection occurs when relatively unhealthy individuals are more likely than healthy individuals to purchase health insurance coverage at a given price. Insurers understand this tendency and attempt to set premiums to reflect average expected expenditures in a plan. The selection of relatively unhealthy enrollees into coverage raises average expected expenditures, resulting in higher premiums and more adverse selection into coverage.

Adverse selection explains why offered premiums in the individual and small group health insurance markets often are too high for most healthy people compared with the health costs they actuarially can be expected to incur, meaning that they either pay too much for coverage or choose to go uninsured rather than pay the high premiums. In some cases, insurance markets subject to extreme adverse selection may disappear completely (Cutler and Reber 1998).

Encouraging broad participation in health insurance coverage helps tremendously to solve the market failure associated with adverse selection. For example, adverse selection is virtually nonexistent in the large group employer sponsored insurance (ESI) market. Take-up rates in this market are very high, thanks both to the tax advantages associated with ESI and to the fact that employers typically pay a portion of premiums, which makes ESI a good deal for the vast majority of employees. While employer contributions are offset by lower wages in equilibrium (Gruber 1994; Baicker and Chandra 2005), employees who decline coverage rarely recoup the employer contribution on the margin. The large enrollment in many ESI plans means that a small number of high expenditure enrollees does not dramatically affect premiums for a large risk pool. This prevents adverse selection from taking root and reinforces broad enrollment through premium stabilization and affordability.

Similarly, the Affordable Care Act encourages broad enrollment through the widespread accessibility of health insurance exchanges, the individual responsibility requirement related to the purchase of health insurance, and the financial assistance offered to lower-income earners to purchase private plans on an insurance exchange. Other provisions of the Affordable Care Act raise consumer awareness and foster consumer choice through information campaigns, standardization, and consumer search tools, similar to those implemented in the successful rollouts of the Medicare Advantage and Medicare Part D prescription drug programs. As in ESI, broad enrollment in the exchanges is expected to foster premium stability and affordability and to reduce the incidence of cost-shifting from uncompensated care to the insured.

options created by the Affordable Care Act may make employer-sponsored insurance (ESI) coverage less attractive for some employers. The net effects on the prevalence of employer-sponsored coverage, however, are likely to be small.

Based on microsimulations of firms' optimizing behavior, analysts have estimated effects of the Affordable Care Act on the number of individuals with ESI coverage ranging from a 1.8 percent decline (CBO 2012b) to a 2.9 percent increase (Eibner et al. 2011). Other estimates fall with this narrow range (Buettgens, Garrett, and Holahan 2010; Lewin Group 2010; Foster 2010) and are consistent with the small positive effects of health reform on ESI coverage observed in Massachusetts, where similar statewide health insurance reforms were legislated in 2006 (Long, Stockley, and Yemane 2009).

Consumer Protection

The Affordable Care Act also establishes numerous consumer protections related to the purchase of private health insurance, some of which are already in effect. Starting in 2014, individual and group health plans will not be allowed to deny or limit coverage on the basis of an individual's health status. And within certain limits, premiums will be allowed to vary by age, geography, family size, and smoking status, but not by individual health status, gender, or other factors.

The Affordable Care Act also requires that double-digit increases in insurance premiums be reviewed by States or the Department of Health and Human Services, with insurance companies needing to provide justification for any such premium increases. Plans may be excluded from an insurance exchange based on premium increases that are not justified. Further, since the beginning of 2011, most insurers have been allowed to retain no more than 20 percent of consumers' premiums for profits, marketing, and other administrative costs. Overhead and administrative costs in excess of this limit are to be rebated to consumers (or in the case of employer-sponsored insurance, to employers, who must pass a share of these rebates to their employees as cash, improved benefits, or lower premiums, with the share depending on the proportion of the total health plan premium paid by the employees). As of August 2012, an estimated 12.8 million Americans had received rebates totaling $1.1 billion from insurers as a result of this 80/20 medical loss ratio rule.

Health Care Spending and Quality of Care

The Affordable Care Act includes a series of provisions designed to reduce spending while improving the quality of care in the health

care system. Reducing excessive payments to Medicare Advantage plans, strengthening antifraud efforts, and initiating reforms to Medicare provider payment systems, among other policies, are expected to extend the life of the Medicare Trust Fund by an additional eight years. These reforms complement numerous other provisions that improve health care quality while lowering costs.
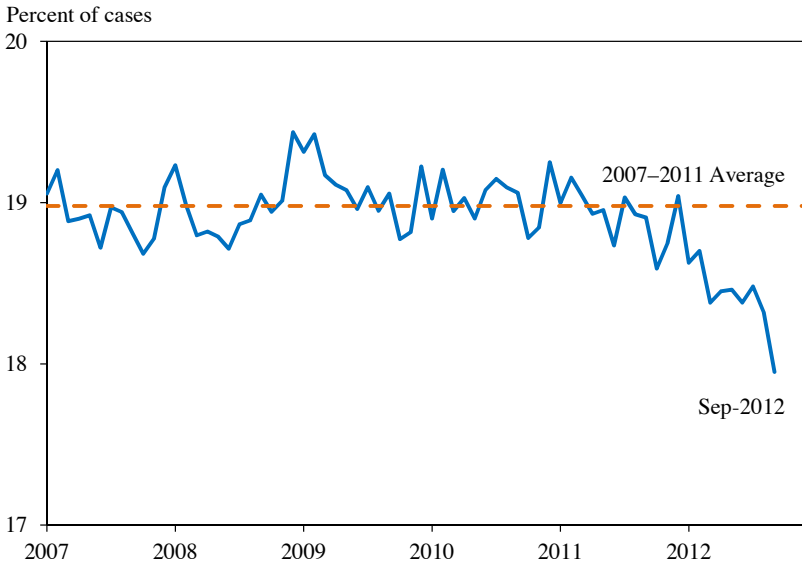
The Hospital Value-Based Purchasing Program went into effect in October 2012. The program rewards more than 3,500 hospitals for providing high-quality care and reduces payments for hospitals demonstrating poor performance. Similar pay-for-performance programs in Medicare Advantage and the end-stage renal disease prospective payment system encourage higher-quality care and more efficient care delivery. Additionally, pay-for-reporting initiatives in which providers are rewarded for reporting procedures and outcomes have been launched in virtually every Medicare payment category, and mark the first step toward value-based purchasing.

The Partnership for Patients program is a public-private partnership that aims to reduce hospital complications and improve care transitions in more than 3,700 hospitals and partnering community-based clinical organizations. By stopping millions of preventable injuries and complications in patient care, this nationwide initiative has set as its goal saving 60,000 lives and up to $35 billion in spending, including up to $10 billion in Medicare spending, over the three years following its launch. Data provided by the Centers for Medicare and Medicaid Services (CMS) show that since the Partnership for Patients program was introduced in 2011, the hospital readmission rate within Medicare has fallen to 17.8 percent, down from an average of about 19 percent that had prevailed from 2007 through 2010 (CMS 2013) (Figure 5-5). The data also show that the declines were larger in hospitals participating in Partnership for Patients.

The Affordable Care Act builds on the investments made in the Recovery Act to encourage the use of health information technology. By making it easier for physicians, hospitals, and other providers to assess patients' medical status and provide care, electronic medical records may help eliminate redundant and costly procedures. More than 186,000 health care professionals (about one-third of eligible providers) and 3,500 hospitals (about two-thirds of eligible hospitals) have already qualified for incentive payments for the meaningful use of electronic health records authorized by the Recovery Act.

The Affordable Care Act also launched extensive efforts to prevent and detect fraudulent payments under Medicare, Medicaid, and the Children's Health Insurance Program. An important goal of the Administration's efforts has been to prevent fraudulent payments before they are made rather

Figure 5-5
Acute Care Hospital Readmission Rates, 2007–2012

Source: Center for Medicare and Medicaid Services, Office of Enterprise Management.

than chasing them afterward, but there also are ongoing efforts to recover fraudulent payments if they occur. Antifraud efforts have recovered a record-high $14.9 billion over the last four years.

Medicare Payment Reform

Traditional fee-for-service Medicare reimburses physicians for each service provided, creating incentives for overutilization. Spending inefficiencies are exacerbated by fragmentation across providers, who historically have had few incentives to coordinate care. Likewise, the prospective payment system (PPS) for Part A hospital services, which is designed to control costs by paying hospitals a prospective amount per diagnostic-related group (DRG) episode, is not immune to waste. While the DRG-based PPS encourages more efficient care and reductions in length of stay compared with cost-based reimbursement (Sloan et al. 1988; Seshamani, et al. 2006), it also can encourage a reduction in necessary care, leading to negative short-term health effects and readmissions (Cutler 1995; Encinosa and Bernard 2005; Seshamani, et al. 2006). Further, the inpatient PPS also can be susceptible to "upcoding," whereby providers code patients as being sicker than they are to raise the risk-adjusted prospective payments (Cutler 1995; Carter et al. 2002; Dafny 2005).

To curb these inefficiencies, the Affordable Care Act has established initiatives that lay a foundation for reforming care delivery and physician payment. At their core, these initiatives are designed to foster greater coordination of care across providers, while simultaneously aligning financial incentives to encourage provider organizations to deliver higher-quality, more efficient medical care. Each initiative builds on a core of clinical and patient engagement quality measures to ensure that cost savings are derived from more efficient delivery of care and not reduced patient access or care quality.

One such initiative is the Medicare Shared Savings Program (MSSP). Under this program, providers deliver care through accountable care organizations (ACOs), contractual organizations of primary care physicians, nurses, and specialists responsible for providing care to at least 5,000 beneficiaries. The Federal Government shares any savings generated for those beneficiaries, relative to benchmarks, with ACOs that meet rigorous quality standards, giving the ACOs incentives to invest in delivery practices, infrastructure, and organizational changes that help deliver higher-quality care for lower costs. Currently, more than 4 million beneficiaries receive care from more than 250 ACOs participating in the MSSP and other CMS projects, with ACO participation and covered beneficiaries continuing to increase as the program expands.

The Affordable Care Act also created the Center for Medicare and Medicaid Innovation, which is charged with identifying, testing, and ultimately expanding new and effective systems of delivering and paying for care. The CMS Innovation Center is authorized to invest up to $10 billion in initiatives that have the potential to reduce program expenditures while preserving or enhancing quality of care furnished to individuals under Medicare, Medicaid, and the Children's Health Insurance Program. Initiatives within the CMS Innovation Center include shared savings models, as well as bundled payments to hospitals and post-acute-care providers.

The Innovation Center's Pioneer ACO program is a more aggressive version of the MSSP and is open to organizations that have had success with risk-based payment arrangements. Pioneer ACOs may keep a greater share of Medicare savings than ACOs in the MSSP but are also at greater risk for losses if spending benchmarks are not met. Successful Pioneer ACOs are also eligible to move to a population-based payment arrangement whereby they assume greater financial risks and rewards for a predetermined set of patients. This greater risk-reward profile further encourages investments in care coordination and best practice delivery reforms. Pioneer ACOs must also develop similar outcomes-based payment arrangements with other

payers, extending payment innovations to the commercial market and maximizing the impact of the program's incentives.

Currently, roughly 860,000 beneficiaries are enrolled in 32 Pioneer ACOs. The Pioneer program is just entering its second year, so it is too early for any comprehensive assessment, but Pioneer ACOs do seem to be making substantial investments in infrastructure and care processes. Infrastructure investments include health information technology adoption and improved data analytic capabilities, which enable providers to identify opportunities for improvements in care processes and the quality of care. For example, the potential savings associated with early identification and treatment of patients with high propensity for developing a chronic disease have led some Pioneer ACOs to make organizational changes that place greater focus on primary care and disease management. CMS is supporting Pioneer ACOs by providing privacy-protected patient information to promote care coordination, hosting collaborative learning networks, and offering other technical assistance.

Care coordination is also central to the Comprehensive Primary Care (CPC) initiative. Primary care is critical to promoting overall health and reducing medical spending. Yet because any one insurer accounts for only a fraction of a provider's business, insurers underinvest in primary care systems that would improve care coordination. Through the CPC initiative, Medicare partners with State and commercial insurers to promote community-wide investments in the delivery of coordinated primary care. Simultaneously, through direct financial payments or shared Medicare savings, the CPC initiative rewards high-quality providers who reduce health care costs through investments in care coordination. At the end of 2012, about 500 primary care practices were participating in the CPC initiative, representing 2,343 providers serving approximately 314,000 Medicare beneficiaries.

The CMS Innovation Center has introduced bundled payments as a model for hospital payment and delivery reform. A bundled payment is a fixed payment for a comprehensive set of hospital and/or post-acute services, including services associated with readmissions. Moving from individual payments for different services to a bundled payment for a set of services across providers and care settings encourages integration and coordination of care that will raise care quality and reduce readmissions. Variants on bundled payments are being demonstrated, differing in the scope of services included in the bundle, and whether payment is retrospective (based on shared Medicare savings) or prospective, which intensifies the financial risk and return to investing in changes to the efficiency and quality
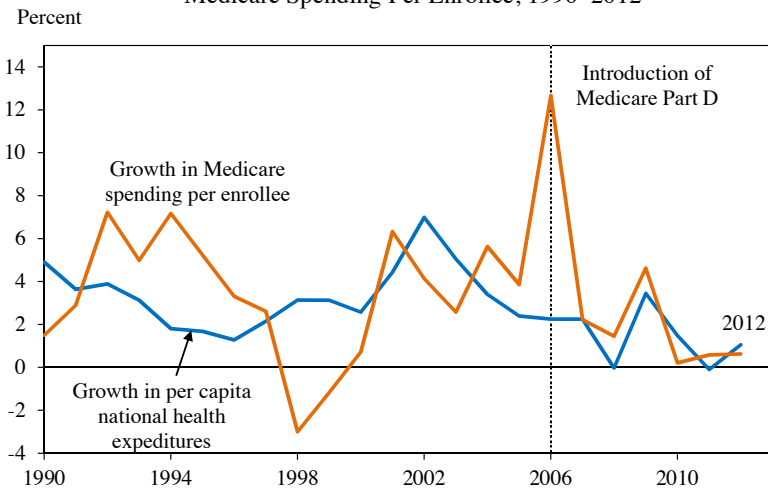
of care. Currently, 467 health care organizations across 46 states are engaged in the bundled payment initiative.

Is the Cost Curve Bending?

The real rate of health expenditure growth has declined or remained constant in every year between 2002 and 2011. For each of the three years 2009, 2010 and 2011, National Health Expenditure data show the real rate of annual growth in overall health spending was between 3.0 and 3.1 percent, the lowest rates since reporting began in 1960.

Additionally, the National Health Expenditure data show that growth in Medicare spending fell from an average of 8.6 percent a year between 2000 and 2005 to an average of 6.7 percent a year between 2006 and 2010. Notably, over a third—2.5 percentage points—of the 2006–2010 growth was attributable to increases in Medicare enrollment. With the exception of a spike in 2006, the year Medicare Part D was introduced, the growth rate of Medicare spending per enrollee—a measure of health care spending intensity—has been on a downward trend since 2001, with a particularly significant slowdown over the past three years (see Figure 5-6). Projections suggest the growth rate of Medicare spending per beneficiary will decline even further. While Medicare enrollment is expected to increase 3 percent a year over the next decade (CMS 2012), the rate of growth in spending per enrollee is

Figure 5-6
Real Annual Growth Rates of National Health Expenditures Per Capita and
Medicare Spending Per Enrollee, 1990–2012

Note: Estimates for 2012 are projected.
Source: Center for Medicare and Medical Services, National Health Expenditure Accounts; CEA calculations.

projected to be approximately the same as the rate of growth in GDP per capita, according to the CBO and Office of the Actuary at CMS (Kronick and Po 2013). Similarly, the rate of growth in spending per Medicaid enrollee is projected to be near the rate of growth in GDP per capita. In the commercial health insurance market, per enrollee spending growth also has declined in recent years, the proximate cause being a slowdown in the growth rate of per-enrollee use of medical services (HCCI 2012).
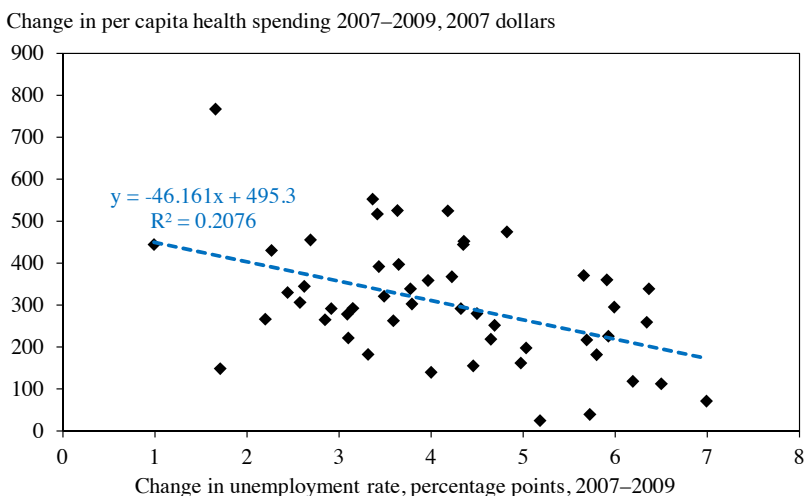
There are several potential causes of the recent declines in the growth rate of spending per enrollee. One factor is the recent recession, in which job losses have caused the loss of insurance coverage. However, the recession explains only a small fraction of the declines in spending growth rates since the start of the recession. The slowdown in the growth rate of per-capita health expenditures began before the recession took hold, and has continued through the economic recovery and into 2012.

As expected, changes in real per-capita total health care spending at the state level are negatively correlated with changes in unemployment in the state between 2007 and 2009 (Figure 5-7). If the relationship in Figure 5-7 holds at the national level, then the increase in the national unemployment rate between 2007 and 2011 of 4.3 percentage points was associated with a $199 decline in spending per-capita (in 2007 dollars), or 2.6 percent of per-capita health care spending in 2007. This accounts for only 18 percent of the slowdown in spending growth since the start of the recession in 2007 and an even smaller proportion of the slowdown in spending growth since 2002, when the growth rate in real per-capita total health care spending began to decline.[2]

Structural changes in the health care market offer another explanation for the decline in per-enrollee spending growth. One possibility is that hospitals and provider groups have increasingly sought to improve efficiency—through adopting more high value medical practices and performing fewer low value procedures—in response to evidence showing their potential for cost savings and quality improvements (Fisher and Skinner, 2010). At the same time, formulary changes that encourage substitution away from branded to generic drugs, and changes in insurance design that increase patient cost sharing for both services and pharmaceuticals, also may explain a portion of the declines in spending growth per enrollee over the past decade. For example, the sharp slowdown in the growth rate of medical

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[2] Between 2001 and 2006, real per-capital spending grew by 21.5 percent. Between 2006 and 2011, real per-capital spending grew by 7.1 percent, where the 14.4 percentage point difference in spending growth captures the slowdown in spending growth. The 2.6 percent decline in total health care spending between 2007 and 2011 attributable to the recession accounts for approximately (2.6/14.4)*100 = 18 percent of the slowdown in spending growth since the start of the recession.

Figure 5-7
Relationship Between Change in State Unemployment Rate and Change in
Real Per-Capita Personal Health Spending, 2007–2009

Change in per capita health spending 2007–2009, 2007 dollars

$y = -46.161x + 495.3$
$R^2 = 0.2076$

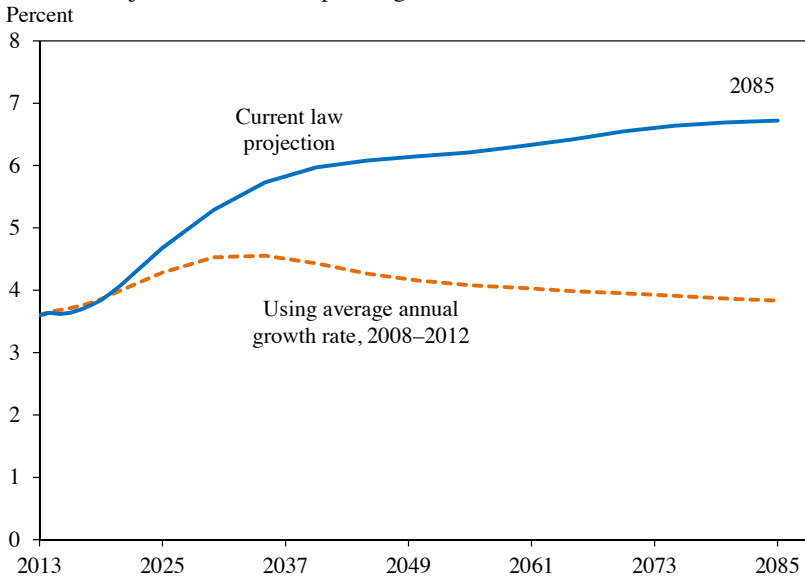Change in unemployment rate, percentage points, 2007–2009

Source: Centers for Medicare and Medicaid Services, National Health Expenditure
Accounts; Bureau of Labor Statistics, Current Population Survey; CEA calculations.

imaging since 2006 likely was due to a confluence of reforms including prior authorization, increased cost sharing and reduced reimbursements (Lee and Levy 2012). Notably, Lee and Levy found that a large fraction of the declines involved imaging identified as having unproven medical value. Similarly, payment reforms and regulations are thought to have contributed to long-run declines in Medicare spending growth rates (White 2008).

Early responses to the Affordable Care Act may have contributed to the decline in per enrollee spending since 2010 (Kronick and Po 2013). Relevant provisions of the law include provisions intended to foster coordinated care, improve primary care, reduce preventable health complications during hospitalizations, and promote the adoption of health information technology.

The decline in the hospital readmission rate, coinciding with the introduction of the Partnership for Patients program in 2011, also may point to early effects of the Affordable Care Act on spending. The Act's Medicare hospital readmissions reduction program, introduced in October 2012, should reinforce these effects. Likewise, infrastructure investments and care process changes, either funded directly by the Affordable Care Act or stimulated through the Affordable Care Act's payment reform, are other possible sources for the recent declines in spending growth.

Figure 5-8
Projected Medicare Spending as a Share of GDP, 2013–2085

Percent

Source: Medicare Trustees (2012); Social Security Trustees (2012); CEA calculations.

In addition, spending declines may reflect early changes in medical care delivery made in anticipation of impending Medicare payment reform. The Affordable Care Act moves providers towards savings-based payment models in Medicare that encourage improved coordination of care. Hospitals seeking new ways to reduce costs and increase bargaining power with suppliers and insurers may respond by consolidating their operations. Recent years have seen a continued consolidation and integration of physicians into provider networks.

The long-run growth rate of per-capita spending has significant implications for the budget. Medicare spending represented 3.7 percent of GDP in 2011 (Medicare Trustees 2012). Under current law, including cost control measures of the Affordable Care Act and the Sustainable Growth Rate-mandated physician payment cut, CMS projects that Medicare spending will rise to represent 6.7 percent of GDP in 75 years, with long-term nominal per-beneficiary spending growing at a rate on average equal to 4.3 percent per year (Medicare Trustees 2012). However, nominal growth rates of per-beneficiary Medicare spending have been declining since 2001, and over the past five years have averaged 3.6 percent. At least some of the recent decline in Medicare spending growth appears to be structural, implying that

the low spending growth rates from the past few years may persist.[3] If the per-beneficiary growth rate of Medicare spending were to remain 3.6 percent per year, then after 75 years Medicare spending would account for only 3.8 percent of GDP, little changed from its share today, and substantially less than what the Medicare Trustees estimate. (Figure 5-8). This should not be interpreted as a forecast but rather an indication of how sensitive long-term projections are to the assumed rate of growth of Medicare spending per beneficiary. In this hypothetical scenario where per-beneficiary Medicare spending grows at a rate equal to the one observed over the past five years, Medicare spending as a share of GDP would be much lower than what current long-term projections suggest.

The causes for the recent and projected declines in the growth rate of medical spending and utilization, and their relationship to the major quality-improving and cost-saving provisions of the Affordable Care Act, remain an important area for future research. Enacted provisions of the health reform law appear to be having positive effects on care coordination, hospital outcomes and spending. And payment reforms that better align payment with cost and provide incentives for efficiency such as shared savings and bundled payment programs hold potential to improve to care quality and reduce medical spending.

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[3] Regression analysis shows a flat and insignificant relationship between state-level 2007-09 changes in per-beneficiary Medicare spending and changes in unemployment, suggesting that little if any of the recent declines in per-beneficiary Medicare spending growth is related to regional cyclical factors.