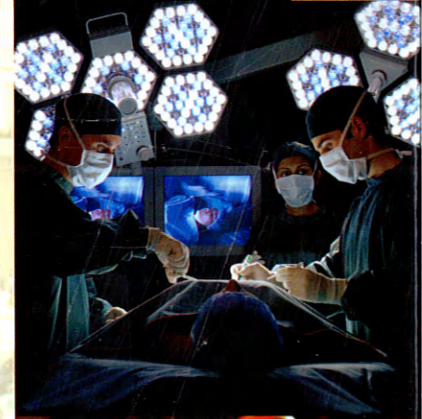
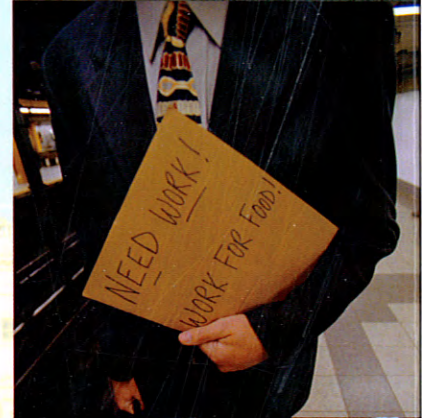


# Exhibit 7

THIRD EDITION

# PUBLIC FINANCE AND PUBLIC POLICY

JONATHAN GRUBER





# Health Insurance I: Health Economics and Private Health Insurance

# 15

15.1 An Overview of Health Care in the United States

15.2 How Generous Should Insurance Be to Patients?

15.3 How Generous Should Insurance Be to Medical Providers?

15.4 Conclusion

On March 30, 1981, only two months after entering office, President Ronald Reagan was shot by John Hinckley, a deranged fan of Jodie Foster who thought the actress would pay more attention to him if he killed the President. Reagan was rushed to George Washington Hospital, where he underwent three hours of surgery to remove a bullet that had entered his lung. Though the injury was potentially fatal, Reagan made a full recovery and went on to serve a full eight years in office.

One hundred years earlier, President James Garfield was not so lucky. He too was shot two months after entering office, on July 2, 1881, by Charles Guiteau, who thought God had ordered him to kill the President. Garfield was brought back to the White House, where for 80 days a dozen doctors attempted to find one bullet that, unbeknownst to them, had lodged itself near Garfield's spine. The doctors probed the President's wound with their unsterilized fingers and metal rods, succeeding only in widening the wound, infecting it, and puncturing his liver. Alexander Graham Bell ran a metal detector over Garfield's body and soon announced that he'd found the bullet. Surgeons went to work but still failed to locate it, not realizing that Bell had mistakenly detected one of the bedsprings underneath the President. The infection resulting from his poor medical care soon caused Garfield to have a heart attack, and when he eventually died, his coroner declared that Garfield would have survived if only his doctors had left him alone.<sup>1</sup>

Between President Garfield's death and President Reagan's election, the field of health care had clearly made great strides, so that doctors were now helping rather than harming people. This improvement in the quality of health care in the United States has been accompanied by an enormous increase in the share of the U.S. economy devoted to health care. In 1950, only 4% of U.S. GDP was accounted for by the health care sector. At that time, Americans spent less on health care than on cars, fuel, or clothing. By 2008, health care accounted for 16.6% of GDP, surpassing spending on housing and

<sup>1</sup>The story about President Garfield comes from [www.anecdote.com](http://www.anecdote.com).



food.<sup>2</sup> This growth is not expected to stop: health care is forecast to consume 38% of U.S. GDP by 2075, which would represent a greater share than the United States currently spends on cars, fuel, furniture, food, clothing, housing, utilities, and recreational activities combined.<sup>3</sup>

Is such high and rapidly growing health care spending a problem? After all, what is more important than our health? And, by some measures, we are buying wonderful things with our health care dollars. Consider the treatment of knee injuries in the 1950s and today. Fifty years ago, if you tore the meniscus (the cartilage under the kneecap), the only option was to have open surgery, during which the surgeon cut open your knee and removed the entire meniscus. You would spend days in the hospital, months recovering, and 15 years down the road you'd have an increased chance of developing arthritis in that knee. If you tear your meniscus today, you can often have only a small piece of it removed by arthroscopic surgery, which allows the surgeon to make tiny incisions in your knee and repair the damage in an average of 30 minutes. You go home that same day, can do light work within a few days, and be up and running (or whatever other sport you enjoy) within three to six weeks.

Similarly, in 1950, 6 out of every 1,000 Americans died from a heart attack. Since then, that number has fallen by half.<sup>4</sup> In 1950, 29 out of every 1,000 infants born died in their first year of life; today, that figure is less than 7 out of 1,000.<sup>5</sup>

Despite the huge benefits reaped from the U.S. health care system, all is not completely well. First, there are enormous disparities in medical outcomes. For example, in 2003 the white infant *mortality rate* in the United States, the share of infants who die in their first year, was 0.7%, which was in line with other developed nations like the United Kingdom and Australia. The 2003 black infant mortality rate, however, was 1.4%, which was somewhat higher than the infant mortality rate in Barbados (1.1%) and twice as high as the rate in Malaysia (0.7%).<sup>6</sup>

Second, the United States is the only major industrialized nation that does not endeavor to provide universal access to health care for its citizens. Forty-six million persons, almost one-sixth of the U.S. population, are without health insurance, and this number has grown fairly steadily for the past 20 years despite a strong economy for much of that period.

Despite the perceived "private" nature of the U.S. health care system, governments account for almost half of all health spending in the United States. Health care spending is now nearly a quarter of the federal government budget and more than a fifth of state and local government budgets.<sup>7</sup>

Furthermore, growth in health spending is projected to account for most of the long-run fiscal problems faced by the U.S. government because of the aging

<sup>2</sup> Historical health spending statistic comes from Cutler (2004, p. 4); 2004 spending from Centers for Medicare and Medicaid Services (2006c); comparisons to spending on other goods come from the Bureau of Economic Analysis's National Income and Product Accounts, Table 1.1.5 and Table 2.3.3.

<sup>3</sup> Chernew et al. (2003).

<sup>4</sup> See the technical appendix to Chapters 3 and 4 of Cutler (2004), located at [http://post.economics.harvard.edu/faculty/dcutler/book/technical\\_appendix.pdf](http://post.economics.harvard.edu/faculty/dcutler/book/technical_appendix.pdf).

<sup>5</sup> Data from the Centers for Disease Control at [http://www.cdc.gov/nchs/fastats/pdf/mortality/nvsr52\\_03t31.pdf](http://www.cdc.gov/nchs/fastats/pdf/mortality/nvsr52_03t31.pdf).

<sup>6</sup> U.S. statistics come from Centers for Disease Control and Prevention (2006a). International statistics come from United Nations Development Programme (2005).

<sup>7</sup> See Figure 1-7.

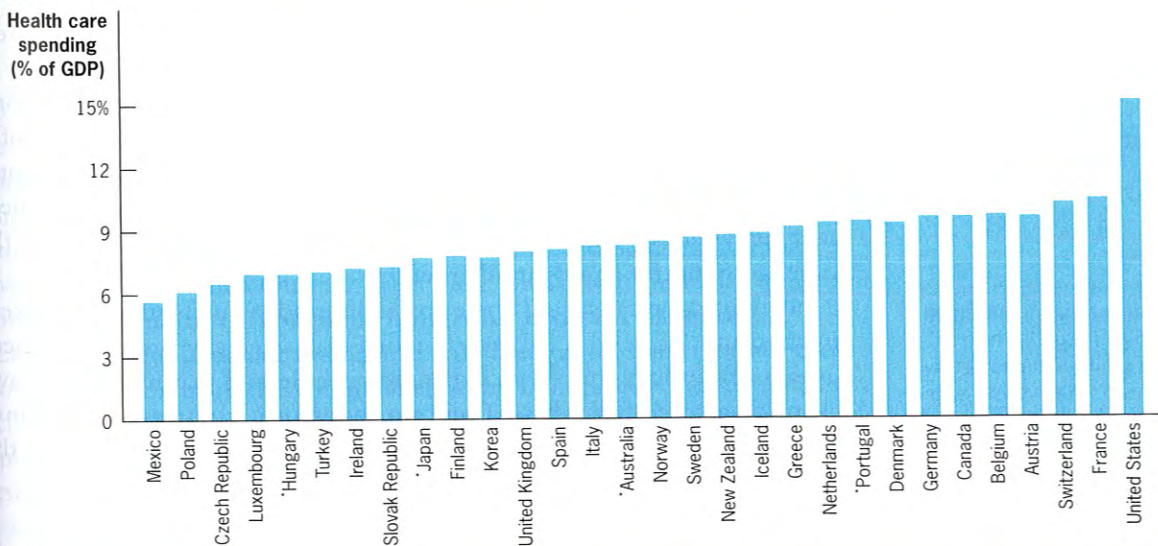
of the U.S. population and the rapid rise in medical care costs. Thus, there are clear public finance issues raised by this large and growing health economy.

In the next two chapters, we discuss many issues relative to health care and its importance to the economy and to government policy. In this chapter, we discuss the nature of health care and the set of general health insurance issues relevant to government involvement in the delivery of health insurance. This chapter provides the basis for understanding the health economy and allows us to contemplate reforms in the government role in the delivery of health care. In the next chapter, we examine the two largest public-sector interventions in health insurance markets, the Medicaid and Medicare programs, and the implications of past evidence for future directions in health care reform.

## 15.1 An Overview of Health Care in the United States

In 2008, the United States spent \$2.24 trillion on health care, or 16.6% of GDP.<sup>8</sup> As noted earlier, this represents a dramatic increase from 50 years ago. This amount is also much higher than the amount spent in other industrialized nations. As Figure 15-1 shows, in 2007 the United States devoted nearly twice as large a share of our economy to health care as did Japan or the United Kingdom.

■ FIGURE 15-1



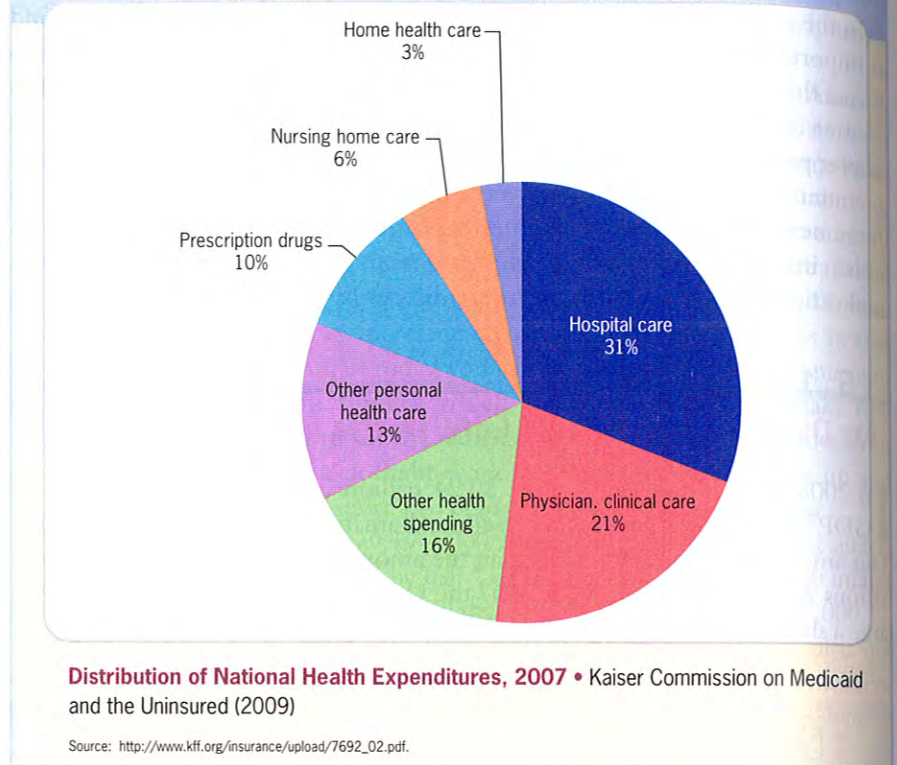
**Health Care Spending in OECD Nations in 2007** • Health care spending is much higher in the United States than in the typical industrialized nation.

Source: OECD Health Data 2009, "Total Expenditures on Health, % of GDP."  
 \*Japan, Hungary, Australia, Portugal all based on 2006 figures.

<sup>8</sup> Centers for Medicare and Medicaid Services (2009a).



■ FIGURE 15-2



Health spending in the United States amounts to \$7,225 on average for each man, woman, and child.<sup>9</sup>

Where do our health dollars go? Figure 15-2 shows the distribution of health spending across the major categories of expenditures. Over 30% of the typical health dollar is spent on hospital care, and about a fifth is spent on physician care. Prescription drug spending accounts for a tenth of health spending, while spending on nursing homes and care for the elderly in their homes accounts for almost another tenth.

Individuals typically fund these expenditures by purchasing insurance. As discussed in Chapter 12, risk-averse individuals generally prefer insurance as a means of financing uncertain expenditures, at least if that insurance is available on an actuarially fair basis. There are several major sources of health insurance in the United States; the distribution of the population across these sources in 2004 is illustrated in Table 15-1.

### How Health Insurance Works: The Basics

Health insurance parallels the general structure of insurance discussed in Chapter 12. Individuals, or firms on their behalf, pay monthly premiums to insurance companies. In return, the insurance companies pay the providers of medical

<sup>9</sup> Information on medical spending comes from the Centers for Medicare and Medicaid Services (2009a), while information on the U.S. population comes from U.S. Bureau of the Census (2009c).

goods and services for most of the cost of goods and services used by the individual (the individual's medical claims). Under most health insurance plans, however, the patient also pays the provider for part of the costs of medical goods and services and the insurance company pays the remainder. There are three types of patient payments:

- ▶ *Deductibles:* Individuals face the full cost of their care, but only up to some limit; for example, a \$100 deductible would mean that you pay the first \$100 of your medical costs for the year, and the insurance company pays some or all of the costs thereafter.
- ▶ *Copayment:* Individuals make some fixed payment when they get a medical good or service; for example, a \$10 copayment for a doctor's office visit or a new prescription.
- ▶ *Coinsurance:* The patient pays a percentage of each medical bill (the coinsurance rate, e.g., 20%), rather than a flat dollar amount (as with a copayment).

■ TABLE 15-1

Americans' Source of Health Insurance Coverage, 2007

|                  | People (millions) | Percentage of population |
|------------------|-------------------|--------------------------|
| Total population | 301.5             | 100.0%                   |
| <i>Private</i>   | 201.0             | 66.7%                    |
| Employment-based | 176.3             | 58.5%                    |
| Direct purchase  | 26.8              | 8.9%                     |
| <i>Public</i>    | 87.4              | 29.0%                    |
| Medicare         | 43.0              | 14.3%                    |
| Medicaid         | 42.6              | 14.1%                    |
| TRICARE/CHAMPVA  | 11.6              | 3.8%                     |
| <i>Uninsured</i> | 46.3              | 15.4%                    |

Source: U.S. Census Bureau. *Income, Poverty, and Health Insurance Coverage in the United States: 2007*. U.S. Government Printing Office, Washington, DC, 2008.

Note: Estimates by type of coverage are not mutually exclusive; people can be covered by more than one type of health insurance during the year.

More than two-thirds of insured Americans have private health insurance, largely through employers, while the remaining have public health insurance. Roughly one-sixth of Americans are uninsured.

## Private Insurance

The most important source of health insurance in the United States is private insurance; in 2008, 66.7% of the population (78.8% of those with some kind of health insurance), or 201 million persons, had private health insurance. Within that group, the predominant source of private insurance is employer-provided health insurance. Only 13.3% of those with private insurance purchase insurance on their own, through the **nongroup insurance market**.

Employers offer insurance to qualified employees in the firm, typically those who work full-time and have completed some minimal service requirement (such as six months of employment at the firm); employers also typically charge employees some share of the employers' premium payments for insurance. As a result of these employee premiums, some employees choose not to take up the insurance even if it is offered. In 2008, the typical employer-sponsored insurance plan cost \$4,704 for singles and \$12,680 for families; employees typically paid 16% of the costs of single coverage and 27% of the costs of family coverage.<sup>10</sup>

### nongroup insurance market

The market through which individuals or families buy insurance directly rather than through a group, such as the workplace.

<sup>10</sup> Kaiser Family Foundation, 2009.



There are two reasons why employers are the predominant source of insurance.

**risk pool** The group of individuals who enroll in an insurance plan.

**Why Employers Provide Private Insurance, Part I: Risk Pooling** The first reason that employers provide most private insurance is the nature of insurance risk pools. An insurance **risk pool** is the group of individuals who enroll in an insurance plan. When insurers sell an insurance plan to a group, they don't care about the medical experiences of any one member of the group. What matters to the insurer is the total premium collected from, and medical claims paid out on behalf of, that insurance pool as a whole. Recall our example from Chapter 12: actuarially fair pricing simply requires that the insurance company collect enough in premiums from the entire group to cover its costs for that group.

As a result, the goal of all insurers is to create *large insurance pools with a predictable distribution of medical risk*. So long as the insurer can accurately predict the claims that it will pay out for that insurance pool, it can charge a premium to cover its claims costs (along with administrative costs and profits). If it can't make that prediction accurately, there is a risk that the premiums will not cover the pool's medical costs.

Two features increase the predictability of medical risk distributions for insurance risk pools. The first is the absence of adverse selection. Insurers predict medical risk based on the observable characteristics (such as age and sex) of the individuals in the risk pool, and such predictions will only be valid if those individuals have the average medical risk of their age and sex group. If individuals are forming a pool based on their (unobserved to the insurer) health status as well, then the insurer can't predict the expected costs of that pool very well. The second factor that increases predictability is group size. The statistical *law of large numbers* (introduced in Chapter 3) states that as the size of the pool grows, the odds that the insurer will be unable to predict the average health outcome of the pool falls.

Employees of firms, particularly large firms, constitute a risk pool that has a good chance of meeting these two conditions. Workers generally do not take their health status into account when choosing which firm to work for, so there is no reason to believe that there will be adverse selection in this risk pool. That is, there is no reason to suspect that particularly sick or healthy individuals band together to work in a firm (particularly a large firm), so that on average within a firm, workers of a given age and sex will have the expected medical expenditures for that age and sex. In addition, most employees work in firms that are sufficiently large that the law of large numbers can be employed in predicting medical risks.



"Kids, your mother and I have spent so much money on health insurance this year that instead of vacation we're all going to go in for elective surgery."



For these reasons, firms provide an attractive risk-pooling mechanism for insurers. Individuals, on the other hand, do not. Large groups of individuals could be formed to deal with the second concern, group size, but the first concern, adverse selection, always remains: the individuals who band together to come to the insurer looking for coverage might be doing so simply because they are sick. Because of adverse selection, insurers would much rather sell insurance to large employer groups than to small groups or individuals.

The preference for large groups by insurers is reinforced by another aspect of insurance provision, administrative costs. Many of the costs of administering insurance are *fixed* at a certain level no matter the size of the pool (e.g., the costs of selling the insurance product). As a result, the larger the pool, the more widely per capita administrative costs can be spread. For individuals or small groups, these fixed administrative costs can amount to a large share of the premium, but the costs are a very small share of the premium for large firms.

These issues are reflected in the pattern of private insurance coverage in the United States. Large employers in the United States almost universally offer health insurance to their employees; 98% of firms with more than 200 employees offer health insurance. Among smaller firms, however, health insurance offering rates are much lower; only 47% of firms with fewer than 10 employees provide insurance, and only 72% of firms with 10–24 employees provide insurance.<sup>11</sup> This difference is partly because the insurer cannot appeal to the law of large numbers for these smaller pools: one cancer or AIDS patient in a small firm could cause medical claims costs to exceed the insurance company's projection and thus exceed premiums collected. As a result, insurers are more reluctant to insure small firms, since they can't predict with certainty the insurance costs that their premiums must cover. The difference is also due to the higher (fixed) administrative costs per worker at small firms. As discussed in Chapter 12, the demand for insurance will fall if administrative costs cause insurance premiums to rise above their actuarially fair level.

**Why Employers Provide Private Insurance, Part II: The Tax Subsidy** The second reason why employers are the predominant providers of health insurance is the **tax subsidy to employer-provided health insurance**. Under current U.S. tax law, employee compensation in the form of wages is subject to taxation, but employee compensation in the form of health insurance expenditures is not. If your employer pays you \$1 in wages, you keep only  $\$1 \times (1 - \tau)$  of those wages, where  $\tau$  is your tax rate; if you have a 33% tax rate, you only keep \$0.67 of each \$1 you earn. If your employer pays you in health insurance, on the other hand, you keep the full \$1 of health insurance. This tax subsidy is *only available* for employer-provided health insurance. Thus, there is a large subsidy to purchasing health insurance through your employer rather than on your own.

For example, suppose that Jim and Peter are both working for the same employer (see Table 15-2). The labor market is perfectly competitive, so their wage is equal to their marginal product, which is \$30,000 per year for each

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**tax subsidy to employer-provided health insurance**

Workers are taxed on their wage compensation but not on compensation in the form of health insurance, leading to a subsidy to health insurance provided through employers.

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<sup>11</sup> Kaiser Family Foundation (2009), Exhibit 2.4.



■ TABLE 15-2

## Illustrating the Tax Subsidy to Employer-Provided Insurance

|       | Marginal Product, Wage | Employer Health Insurance Spending | Pre-Tax Wage | After-Tax Wage | Personal Health Insurance Spending | After-Tax, After-Health Insurance Income |
|-------|------------------------|------------------------------------|--------------|----------------|------------------------------------|--|
| Jim   | \$30,000               | 0                                  | \$30,000     | \$20,000       | \$4,000                            | \$16,000                                 |
| Peter | \$30,000               | \$5,000                            | \$25,000     | \$16,666       | 0                                  | \$16,666                                 |

Jim and Peter both have the same marginal product of labor, but Peter chooses to take insurance through his employer, accepting a \$5,000 reduction in wages as a result, while Jim purchases it on his own for \$4,000. Even though Jim's insurance is cheaper, Peter ends up with \$666 more income after taxes than Jim due to the subsidy to employer-provided insurance.

employee. Assume that both employees face a flat tax rate of 33%, so that, without insurance, their after-tax income is  $\$30,000 \times (1 - 0.33) = \$20,000$ . The employer now offers both employees the opportunity to have health insurance at a cost of \$5,000, but the employer will reduce their wages by \$5,000 if they take this insurance, so that their total compensation is still equal to their marginal product.

Jim can purchase insurance on his own for \$4,000, so he turns down the employer. He has an after-tax income of \$20,000, out of which he pays \$4,000 for insurance, so that he ends up with \$16,000 in after-tax, after-insurance income. Peter takes the health insurance. His earnings fall to \$25,000, which is  $\$25,000 \times (1 - 0.33) = \$16,666$  after tax. But Peter now has a higher after-tax, after-insurance income than does Jim, even though his insurance is much more expensive (\$5,000 rather than \$4,000). This is because Peter has benefited from the tax advantage to employer-provided health insurance, lowering the taxes he has to pay by \$1,666 (33% of \$5,000), which more than offsets the \$1,000 higher cost of the employer-provided insurance.

**Quick Hint** The subsidy to employer-provided health insurance is generally not well understood. This is not a subsidy to *employers* but rather a subsidy to *employees* for insurance purchased in the employment setting. From the employer's perspective, whether she pays you in wages or health insurance is irrelevant; either way, a dollar of employer spending has the same effect on the firm's bottom line (since any type of employee compensation is deductible from corporate taxation). From the worker's perspective, however, there is a large difference: by being paid in health insurance rather than wages, the worker reduces her tax payments. If the government wanted to end the tax subsidy, it would not do so by increasing the corporate tax paid by the firm; it would instead include employer spending on health insurance as part of an employee's taxable income.

**The Other Alternative: Nongroup Insurance** Of the approximately 70 million individuals who are not covered by employer insurance (or public insurance



sources described later in this chapter), only around 37% (27.1 million) turn to the nongroup health insurance market. This relatively small percentage is explained partly by the problems we highlighted with the small group market (potential for adverse selection and high administrative costs per enrollee), which are even greater when the insured is a single individual or family. As a result, the nongroup insurance market is not a well-functioning market. Furthermore, nongroup insurance is not always available; those in the worst health are often unable to obtain coverage (or obtain it only at an incredibly high price). Often, nongroup policies will have “preexisting conditions exclusions,” which state that the health insurance will refuse to pay for the expenditures associated with any illness that the purchaser has when he or she buys the insurance (e.g., recurrences of cancer would not be covered for those with past episodes of cancer).

## Medicare

The second major source of health insurance is the **Medicare** program, which provides health insurance for all people over age 65 and disabled persons under age 65. Medicare is financed by a payroll tax of 1.45% each on employees and employers.

Every citizen who has worked for ten years in Medicare-covered employment (and their spouse) is eligible for Medicare at age 65. (Unlike Social Security, individuals cannot access Medicare coverage before the age of 65.) In 2009, about 37 million elderly persons were eligible for Medicare. After a two-year waiting period, Medicare insurance is also available to those receiving disability insurance. Disabled persons under age 65 add another 7.3 million people to the Medicare program.<sup>12</sup>

## Medicaid

The other major public health insurance program in the United States is the **Medicaid** program, which provides health care for the poor. The federal and state governments share the financing of this program, which is paid for out of general tax revenues.

Medicaid benefits are targeted at several groups:

- ▶ Those who qualify for cash welfare programs, mostly single mothers and their children
- ▶ Most low-income children in the United States (typically below 200% of the Federal poverty level)
- ▶ Most low-income pregnant women (typically below 200% of the poverty level, for the expenses associated with their pregnancies only)
- ▶ The low-income elderly and disabled (for non-Medicare health costs and long-term care costs for facilities such as nursing homes)

Medicaid is best known for its coverage of the young poor population, particularly mothers and children, who make up nearly 70% of program recipients.

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**Medicare** A federal program that provides health insurance to all people over age 65 and disabled persons under age 65.

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**Medicaid** A federal and state program that provides health care for the poor.

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<sup>12</sup> Social Security Administration (2009), Tables 8.B4 and 8.B5.

However, over two-thirds of the costs of the program are accounted for by disabled and elderly program recipients. Expenses for this group include those for long-term care, either from providers visiting their homes or from institutions such as nursing homes, which account for 20% of total Medicaid spending.<sup>13</sup>

### TRICARE/CHAMPVA

Another large source of insurance in the United States is health insurance for those currently or formerly in the military and their dependents. TRICARE is a program administered by the Department of Defense for military retirees and the families of active-duty, retired, or deceased service members. CHAMPVA, the Civilian Health and Medical Program for the Department of Veterans Affairs, is a health care benefits program for disabled dependents of veterans and certain survivors of veterans. Together, these two programs provide health coverage for about 11 million Americans.

### The Uninsured

Finally, there are the 46.3 million in the United States without any insurance coverage at all. Who are they?<sup>14</sup>

- ▶ The uninsured have lower-than-average incomes: one-half of the uninsured are in families with incomes below \$30,000 per year. Not all the uninsured are poor, however: 15% of the uninsured are in families with incomes above \$75,000.
- ▶ In 2007, nearly two-thirds of the uninsured came from families where one or more members were full-term workers, but were either not offered health insurance by their employer, or were offered insurance by their employer but did not enroll in that insurance to cover themselves or their family members.
- ▶ Almost one-fifth of the uninsured are children.

**Why Are Individuals Uninsured?** Why are so many individuals without health insurance coverage? One reason is that even risk-averse individuals may be unwilling to purchase insurance if it is not available at an actuarially fair price. Private insurance in the United States has administrative costs that average roughly 12% of premiums paid. In the expected utility model developed in Chapter 12, such a deviation from actuarial fairness can cause individuals with a low level of risk aversion to forgo insurance.

A second reason is adverse selection in the health insurance market. Health insurers operate with less than full information about those seeking insurance. This lack of information raises the cost of insurance in two ways. First, some share of the administrative costs of private insurance is made up of the costs devoted to screening potential applicants to identify the costliest cases. The second way that adverse selection raises the cost of insurance is through the

<sup>13</sup> Social Security Administration (2009), Table 8.E1 and 8.E2.

<sup>14</sup> EBRI (2008).



standard lemons-pricing effect discussed in Chapter 12: Prices will be higher to reflect the (presumably sickest) subset of individuals who choose to insure. Moreover, insurers may be simply unwilling to insure the worst risks because of fears of adverse selection.

A third reason is that individuals may be rationally forgoing insurance because the odds of illness are low, and if they become ill, they can receive care for free from medical providers. Under federal law, any hospital that accepts reimbursement from Medicare must treat individuals who arrive in an emergency condition, regardless of their ability to pay. Hospitals can try to collect the costs of such care from uninsured patients, but they often remain unpaid, becoming **uncompensated care** costs to the hospital and providing a form of “implicit insurance” for the patient.

A fourth reason is that individuals may be uninsured because they simply can't afford the high costs of health insurance. Individuals not offered insurance by their employer, or for whom the employer pays only a small share of the costs, may simply not have the available funds to pay the remaining costs.

A fifth reason is that individuals are making mistakes and not appropriately valuing insurance coverage. This situation could arise because young and healthy individuals do not fully appreciate the health risks they face. Or it could be because individuals face the type of self-control problems discussed in Chapter 6, overvaluing the short-run costs of insurance relative to long-run medical risk.

**Why Care About the Uninsured?** What does it matter if there are people without health insurance? There are several possible answers to this question. First, there are physical externalities associated with communicable diseases; uninsured people are less likely to receive vaccinations and care for communicable diseases. (Recall the measles example in Chapter 1.) Second, there is a significant financial externality imposed by the uninsured on the insured through uncompensated care. When the uninsured get served by medical providers and don't pay their bills, those costs are passed on to other users of the medical system through high medical prices, a practice called *cost-shifting*. The latest estimates suggest that the amount of uncompensated care delivered in the United States is \$56 billion each year.<sup>15</sup> This is a classic negative financial externality because the uninsured are raising medical costs for others without bearing the full costs themselves.

The third reason we might care whether individuals are uninsured is that care is not delivered appropriately to the uninsured, thus jeopardizing their health and further raising the costs of uncompensated care that are paid by those who are insured. A classic example is the uninsured's use of the emergency room (which is designed for acute medical emergencies) for primary care, such as treatment of the common cold. There is enormous anecdotal evidence of such inefficient use of medical services; for example, a recent survey of individuals in a Los Angeles emergency room revealed that 38% of those surveyed would trade their current emergency room visit for a doctor's office visit within three days!<sup>16</sup> This misuse of services is a problem because the

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**uncompensated care** The costs of delivering health care for which providers are not reimbursed.

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<sup>15</sup> Hadley, Jack, John Holahan, Theresa Coughlin and Dawn Miller (2008). Covering the Uninsured in 2008: Current Costs, Sources of Payment and Incremental Costs, *Health Affairs Web Exclusive*.

<sup>16</sup> Hadley et al., 2008.



## EMPIRICAL EVIDENCE

## HEALTH INSURANCE AND MOBILITY

Is job lock an important problem in reality? A large literature has investigated this question and concluded that it is. Initially, this literature compared the mobility rate of those who have and do not have health insurance, and showed that those who have health insurance are less likely to leave their jobs than those who do not, suggesting job lock. However, these groups do not form sensible treatments and controls, since they are likely to be dissimilar in at least two ways. First, those who choose to enter jobs that offer health insurance may be quite different from those who do not; for example, they may be in worse health. If worse health is associated with less job mobility, then this may be the reason for the observed correlation of health insurance and mobility. (Those with insurance are less likely to leave jobs because they are most ill, not because of insurance coverage.) Second, jobs that provide health insurance are typically “better jobs” along many dimensions, such as higher wages and other benefits (such as pension plans or vacation). Individuals may be reluctant to leave these jobs not because they fear losing health insurance coverage but because these jobs are too good to leave! As a result of this lack of comparability between treatment groups (those with health insurance) and control groups (those without), these estimates are biased.

A more sophisticated literature in the 1990s surmounted this problem in two different ways.<sup>17</sup> First, studies used a difference-in-difference strategy that compared a treatment group of those who valued health insurance particularly highly with a control group of those who did not. These studies asked, for example: Does having health insurance lower the mobility rate among those who don’t have any other source of insurance coverage (treatments), relative to those who do have coverage from their spouses or some other source (controls)? If job lock is an important problem, it should be found most prominently among those who don’t

have coverage from a spouse; other reasons for the correlation of insurance with mobility (bias that does not represent true health insurance effects) are captured by the control group of those who don’t have spousal coverage.

Second, studies examined the impact of state laws that allowed workers to continue to purchase their employer-provided health insurance for some period of time after leaving their jobs. These laws mitigated the problem of job lock to some extent because workers could be sure to have coverage for a period of time even if they left a job with health insurance for one without health insurance. These laws were passed in some U.S. states in the 1970s and 1980s, so that a quasi-experimental analysis was possible: individuals in states passing laws were the treatment group (since job lock should be loosened) and those in states without laws were the control group, and any difference in mobility was due to a loosening of job lock through these laws. Federal legislation in 1986 (part of the Consolidated Omnibus Reconciliation Act, or COBRA) then made continuation coverage available nationally (which is why it is often known as COBRA coverage). The passage of COBRA provided another opportunity for quasi-experimental analysis in which those workers in states that did not already have laws were the treatment group, and those in states that already had laws (and were thus unaffected by the federal law) were the control group.

The results from these studies support the notion that job lock is quantitatively important. Madrian’s (1994) estimates, for example, suggest that it reduces mobility across jobs among those with health insurance by as much as 25%. Subsequent studies in this same vein have found that a lack of health insurance coverage for retirees reduces the odds that someone will retire before age 65 from his or her job, since older persons do not want to risk being uninsured before they become entitled to Medicare at age 65.

emergency room is a very expensive place to treat a minor illness; the efficiency of the medical system would be improved by sending these individuals to physicians’ offices instead.

Fourth, there are paternalism and equity motivations for caring about the uninsured. In particular, individuals may irrationally underinsure themselves because they do not appreciate the risks they face, and governments may view

<sup>17</sup> For a review of this literature, see Gruber and Madrian (2004).



such irrational underinsurance as justifying intervention in insurance markets. In addition, many feel that health care is a basic right, like food or shelter, and since the uninsured are generally poorer than average, they may be a group to whom we want to redistribute health care resources.

The final reason for caring about the uninsured is that *becoming uninsured* is a concern for millions of individuals who currently have insurance. Many individuals are afraid to search for or move to jobs where they may be more productive because they are afraid of losing their health insurance coverage. This reluctance to change can lead to a mismatch between workers and jobs that can lower overall U.S. productivity. This is often referred to as **job lock**, the unwillingness to change to a better job for fear of losing health insurance.

To illustrate this problem, suppose that Brigitte has utility over only two goods, health insurance and consumption, so that her utility function is of the form  $U = U(C, HI)$ , where  $C$  is consumption, and  $HI$  is a variable equal to 1 if she is covered by health insurance and to 0 otherwise. Suppose that she works in a well-functioning labor market so that the wage that she is paid is equal to her marginal product, net of the cost of providing health insurance, and that she consumes her net income.

Suppose that Brigitte is currently on job 1 (an accountant), but has an offer to move to job 2 (a start-up software firm), where she has a higher marginal product ( $MP_1 < MP_2$ ). This move would be an efficiency improvement from society's perspective. Suppose, however, that job 1 is at a large firm where health insurance is relatively cheap and is therefore provided at a cost  $P$ , while job 2 is at a small firm where health insurance is very expensive and is therefore not provided. Brigitte enrolls in health insurance in job 1, so that she earns a wage  $MP_1 - P$ . Consumption is equal to net compensation, so Brigitte has utility  $U(MP_1 - P, 1)$  if she stays on job 1, and utility  $U(MP_2, 0)$  if she moves to job 2. On job 1 she has a lower marginal product, from which is subtracted the cost of health insurance, but she gets health insurance; on job 2, she has a higher marginal product and doesn't have to pay the costs of health insurance, but she doesn't get insurance.

In this case, if Brigitte values health insurance at above its cost (if there is a lot of weight on the second term in her utility function relative to the first), she might stay at her old job, even though  $MP_2 > MP_1$ , because of her disutility of losing insurance. *Health insurance availability may inhibit productivity-increasing job switches.*<sup>18</sup> In fact, as we review in the Empirical Evidence box, it appears that job lock is an important phenomenon in the United States: workers with health insurance are about 25% less likely to change jobs because of that insurance.

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**job lock** The unwillingness to move to a better job for fear of losing health insurance.

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<sup>18</sup> This conclusion assumes that (a) firms can't offer health insurance only to some workers, or (b) firms can't set worker-specific wages to address their valuation of health insurance. If firms could do these two things, then firm 2 could lure Brigitte away from firm 1 by offering health insurance just to her, and reducing wages accordingly. But assumption (a) is legally justified; firms cannot restrict eligibility for health insurance based on characteristics other than hours of work or tenure with the firm. Assumption (b) is trickier; we'll discuss this point in Chapter 18.



## 15.2

## How Generous Should Insurance Be to Patients?

In considering government intervention in health insurance markets, the first question is: How generous should health insurance be? As with other insurance discussed in Chapters 12–14, the optimal generosity of health insurance will be determined by trading off the consumption-smoothing benefits and moral hazard costs of insurance. Yet generosity is measured in a very different way with health insurance than with the other programs we have studied. For Social Security or unemployment insurance, generosity reflects the share of pre-event wages replaced, or perhaps the duration of benefits. In the context of health insurance, generosity reflects the share of medical spending that will be reimbursed by the health insurer.

The generosity of health insurance is therefore measured along two dimensions. The first is generosity to *patients*: what share of the bill for medical services should be paid by the insurer, and what share by the patient, through deductibles, copayments, and coinsurance? The most generous health insurance plan is one that provides **first-dollar coverage**, reimbursing providers fully with no cost to the patients themselves. Plans can be less generous to consumers either by refusing to reimburse some services, so that patients pay the full cost, or by raising the amount that patients need to pay when they get the service. So the question we discuss in this section is: What share of a patient's medical spending should be reimbursed by the insurer, and what share should be paid by the patients themselves?

The second dimension of insurance generosity is generosity to *providers*: How should insurers reimburse providers for the services they deliver? Should insurers just pay the amount billed by the provider for medical services, or should the insurer limit in some way how much the provider will be reimbursed? In the next section, we discuss this alternative dimension of generosity.

### Consumption-Smoothing Benefits of Health Insurance for Patients

Applying what we learned in Chapter 12, the benefits of health insurance to individuals are clear. Risk-averse individuals will value health insurance as a means of smoothing their consumption with respect to the cost of medical events. Not all types of medical events are created equal, however. Some are minor and predictable, such as a quick physician visit for a checkup. Others are more extensive and unpredictable, such as hospitalization for a heart attack. The key insight of expected utility theory is that insurance is much more valuable for the latter types of medical events, and that there is relatively little consumption-smoothing benefit from covering the former type of (minor) events. Thus, first-dollar coverage does not provide much more consumption smoothing than does health insurance that makes patients pay the minor costs of medical care and has insurance pay only the higher costs of major medical events (what is often called “catastrophic care”).

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**first-dollar coverage** Insurance plans that cover all medical spending, with little or no patient payment.

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