Chapter 3

Global Perspectives of Economics and Health Care

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A girl born in Chile in 1910 could expect to live only to age 33. Since then, her life expectancy has more than doubled to its current level of 78 years. . . . Her life is not only much longer, it is much healthier as well.

—Jamison, 2006

Introduction

Across the world there is tremendous variation in the way health care is provided and funded and most importantly in healthcare outcomes. Yet concern about the financing of health care has become a matter of great concern in every economy. In developed countries, rapid growth in medical innovations and technology and the cost of caring for an aging population have combined to make soaring healthcare costs a primary concern. Developing countries plagued with a struggling economy find themselves hard-pressed to find sources of funding for providing even basic medical care for a growing population.

Economics is the study of how to allocate scarce resources across unlimited wants and needs. It is no wonder then that in a world faced with the problem of ever-growing demands on its healthcare resources amid tightening budgets, the field of health economics has grown exponentially more important in academic and policy settings. Health economists are often interested in analyzing whether healthcare resources are utilized efficiently and whether the proper incentives and healthcare systems exist or can be created to ensure efficiency. The current system for the provision of health care in countries such as the United States is rather complex, often with the patient receiving care from providers who are paid by a third party such as a private or public health insurance organization. However, there are currently more than 45 million people in the United States without insurance coverage. Providing unpaid medical care for these uninsured segments of the population results in cost shifting that makes health insurance more expensive. Since the early 1970s, the emergence of managed care organizations in the United States (often centered around health insurance companies) with its emphasis on cost effectiveness, return
on investments, and aligning incentives properly, highlighted the importance of utilizing economic principles in health care.

In this chapter, we compare and contrast five countries, Canada, India, Japan, Ukraine, and the United States. The choice of these particular countries for analysis was driven by the stark differences in their systems for providing health care and in their economic strength. Of these five countries, Canada, Japan, and the United States are highly industrialized countries with high per capita gross domestic product (GDP) and high levels of expenditure on health care. Yet there are significant differences between them in the levels of public and private expenditures on health care, the type of health systems they use, and, by some measures, the levels of health of their population. India has a rapidly growing economy with the second largest population in the world faced with problems of inequality. Ukraine is a newly independent former Soviet republic recovering from an economic recession and has an archaic healthcare system.

In the first section, we briefly describe the history and structure of the healthcare systems in each country, pointing out some of the critical problems in each. In the second section, we conduct a comparative analysis. In the third section, we develop the economic concept of productivity, explain the various techniques for applying it in healthcare settings, and analyze the productivity of healthcare resources in each country. In the final section, we discuss some of the key issues in the development of an ideal healthcare system.

Profiles of Five Healthcare Systems

The five countries under analysis here show a wide range of structures from predominantly private systems in Japan to the central universal program in Canada, from a health insurance based system in the United States to a Ukrainian system with no health insurance. In this section, we begin with a profile of each country’s healthcare system and then briefly conducting a comparatives study.

Profile of the Canadian Healthcare System

Canada is the second largest country in land area in the world and has a relatively small population of slightly over 30 million. Prior to 1971, the Canadian healthcare system was very similar to the United States. It was predominantly based on employer-provided health insurance with a smaller role played by various government programs. Both hospitals and physicians operated privately with physician's fees determined by the market and hospitals paid on a negotiated fee-for-service basis. During this period a little over 7% of the GDP was spent on health care.

In 1971, Canada adopted a system of universal health insurance (Canadian Medicare System) provided by the government and funded by value-added taxes and income tax. All basic services were covered and patient copayments were nominal. Physicians were paid on the basis of a fee schedule determined by the government, and hospitals were allocated a
budget by the provincial government with the overall budget set nationally. Although health insurance was provided to all by the government, the provision of health care remained largely in private hands. However, the private health providers in Canada are heavily regulated with price controls on most activities, services, and products. Hospitals also are restricted from raising funds on their own for capital investments and instead have to obtain funds from the provincial government. Although there are significant differences in overall spending on health care between Canada and the United States, Canadian health expenditures have not grown as rapidly as those in the United States, mostly as a result of the government regulation of prices and the government setting the budget allocation for health care.

In the early 1990s, Canada went through an economic recession that resulted in significant cost-cutting measures. This significantly affected healthcare expenditures as such expenditures were the largest single item in the provincial government budgets. As a result, between 1992 and 1997, health expenditure as a percentage of GDP declined significantly. Since then it has continued to increase and was 9.3% in 1999. Over 70% of total health expenditure is public. Hospitals occupy an important role in the Canadian Health system and hospital costs represented 31.4% of total health expenditure in 1999. Payment to physicians accounts for about 14%, with over 80% of this payment being of the fee for service variety. Much of the increase in healthcare costs can be attributed to pharmaceutical costs; such costs account for 15% of total health expenditure and have almost tripled since the late 1970s. The average per capita expenditure on drugs was $353 in 1998. In 2003, there were 2.1 physicians per 1000 people and 9.95 nurses per 1000 people. Waiting times for medical care are often extremely high.

Canadians have enjoyed significant improvements in life expectancy over the last four decades. Canadian life expectancy is among the highest in the countries belonging to the Organization for Economic Cooperation and Development (OECD, 2001): 75.8 years for men and 81.4 years for women in 1997. The interesting aspect of Canadian life expectancy patterns recently has been the narrowing of the gap between men and women. According to Or (2000) per capita GDP and tobacco, alcohol, and fat consumption are all strongly correlated with premature mortality. Over the last three decades, there has been a 39% reduction in male smoking rates, and alcohol consumption has declined. However, obesity, especially among women, remains a problem with one out of seven Canadians classified as being obese. The reduction in male smoking and the higher rates of female obesity may be responsible for the narrowing gap in life expectancy across gender.

Canada has often been cited by some as an example of the type of system the United States should adopt to provide universal coverage, though it has at least as many non-supporters.

Profile of the Indian Healthcare System

With a population of over a billion, India is the second largest country in the world (second only to China). It is a country of haves and have-nots with significant proportions...
of the population living in poverty while some segments are extremely well off. The economy grew very rapidly during the 1990s. Growth rates during some years were in the double digits, and the economy has continued on the fast track in this century. Like China, India has benefited greatly from participating in the global economy and is fast approaching an economic superpower.

India obtained its independence in 1947 from Great Britain and has for much of its postindependent life adopted a socialist approach to the provision of most services. However, the provision of healthcare services has to a large extent been provided and funded by private entities. Over 50% of all inpatient services and 60% of outpatient services are provided by the private sector. Many of the newer private hospitals are staffed by Western-educated medical personnel with the latest medical technologies available to them. Health care for the poorer and disadvantaged segments of the population, on the other hand, are primarily provided for by government-owned and ill-equipped health facilities. Public ownership is divided between central (national), state, municipal, and panchayat (village) governments. Public facilities own and operate many teaching hospitals, secondary hospitals, rural referral hospitals, primary health centers, and clinics or dispensaries.

In 1951 life expectancy at birth was only 36.7 years. It increased steadily to 64.6 years by 2000. Similarly, infant mortality was 146 per 1000 live births in 1950 and declined to 70 by 2000. Although significant progress has been made since independence, communicable diseases such as tuberculosis continue to affect large segments of the population. In addition HIV/AIDS has assumed virulent proportions. The 1990s also saw increases in mortality from lifestyle factors. An increased trend in smoking among youth and a lack of physical activity have been cited as key factors.

Health care is financed mostly with out-of-pocket payments. India annually spends about $23 per capita on health of which only about $4 is public. Although total health expenditure is 5% of GDP, 4% is private, which can be further broken down to 3.6% being out of pocket. The high out-of-pocket payments often poses a problem since, according to a World Bank report by Peters et al. in 2002, almost a quarter of all hospitalizations push people into poverty because of the loss of jobs and the high cost of private medical facilities. Within public expenditure the central government allocation for health out of its total budget remained stagnant in the 1990s while state allocations actually declined.

Health insurance covers about 10% of the population, with government employees covered under government plans and some private-sector employees covered under employer-provided plans. Since 2000 various plans have been rolled out by the government to provide affordable health insurance for the needy, but coverage for those insured in such plans is often restricted to ill-equipped public health facilities.

India has about 0.6 physicians per 1000 population and about 1.2 nurses and midwives per 1000 population. Primary care physicians working in the public sector are paid a low and fixed salary set at the national level. As a result most physicians work in their own clinics where fees are determined in competitive factors. During the 1990s with liberaliza-
tion of controls many private hospitals and hospital chains with large capital investments in advanced technology and with highly trained staff began to grow rapidly. These new facilities provide care for the many beneficiaries of the booming economy. In addition, these new facilities have made significant inroads into providing services for the health tourists from Western economies attracted by the lower cost of advanced care in these facilities.

The stark disparity in healthcare utilization between different socioeconomic classes and rural–urban regions in India has been a matter of great concern for the government of India for many decades now. The best indicator of this is the disparity in infant mortality rates. The under 5 mortality rates for the lowest wealth quintile is triple that of the highest quintile. It is also twice as high for rural regions compared to urban and for mothers with no education compared to mothers with higher education. Similar disparities also exist with immunizations. Such disparities in health care at young ages are undoubtedly likely to result in widening disparities at older ages.

In addition to the inequalities between rural and urban regions, there are also significant variations across states in India in every aspect of income and health. The state of Punjab has the highest per capita income and the lowest percent of its population below poverty. The best-performing state in health is the state of Kerala; it also has the highest literacy rates (especially for women) and density of physicians and healthcare facilities per capita. Excluding Kerala, a positive relationship between high incomes and better health appears to hold in India.

As one of the fastest growing economies in the world India has to take urgent steps to address the huge disparities in healthcare provision. Sustained growth in the economy requires a source of healthy manpower.

Profile of the Japanese Healthcare System

Since the end of WWII, Japan has evolved from being an economy devastated by war to the second largest economy in the world with a GDP of $33,727 per capita in 2003. It has a population of around 130 million of which 19.5% are 65 years or older. By 2020 this segment is expected to be over a quarter of the population. The rapid aging of the population is a matter of great concern especially for healthcare provision and funding. Japan has some of the best health outcomes in the world, and it continues to improve in the health status of the population. There is also very little disparity within the country in healthcare access.

Life expectancy in Japan was 50 years for men and 54 years for women at the end of WWII. It has since grown to the highest among developed countries at 78 years for men and 85 years for women. Infant mortality is very low at 3 per 1000 live births. The leading cause of death in Japan is malignant neoplasm followed by cardiovascular disease. High stress levels have been blamed for the very high levels of suicides (around 32,109 in 2003) especially among working men. Although the prevalence of smoking is decreasing, it is
still high compared to other industrialized countries. Over 50% of men smoke, and it is becoming increasingly prevalent among women.

The Japanese enjoy universal coverage and free access to all health facilities. Enrollment in an insurance plan was made mandatory for all Japanese in 1961. Most people (around 75 million) obtain their insurance through employer-related groups. The rest are covered under a national health insurance plan. Employers contribute around 4.5%, and employees contribute 3.5% of their pay toward the insurance premium. Both the employer groups and the national plans have copayments and catastrophic caps on out-of-pocket payments. Balance billing, which is the practice of charging full fees and billing the patient for the amount unpaid by the insurer, is prohibited, and prices to providers are set by the government. The fees for physicians are lower than in the Medicare Relative Value Scale used in the United States and is an important reason for the lower health cost in Japan (Phelps, 2003). Hospitals are mostly private, but the large hospitals and teaching hospitals are public. Most doctors work in private clinics and earn much more than the specialists working in the hospitals. The Japanese public visits their physicians regularly at an average rate of 15 times per year (Phelps, 2003). However, the number of minutes spent with the doctor is lower than in the United States. The prevalence of a fee-for-service system makes usage levels high for physician visits as the patient does not bear much additional cost from frequent visits. Due to the same reason, pharmaceutical spending is very high in Japan at 20% of total spending on health.

Total health expenditure went up considerably during the 1990s at around 3% and was $260 billion in 2002 accounting for 8.6% of GDP (WHO, 2005). The rapid aging of the population has been a primary cause of high health expenditures in Japan as in many other countries. A sizeable portion of total health expenditure (around one third) was for the aged. Likewise per capita expenditure for the aged was three times the average of $2,046. In 2000 in response to the large increase in long-term nursing care, the government introduced long-term care insurance. Although hospital admissions are lower than the United States, the average length of stay is much higher in Japan at over 3 weeks. This explains why 40% of total health spending was for inpatient care with hospitals providing over 90% of it. Public funds were used for 81.35% of total health expenditure with 65.4% coming from the Social Security Fund. Private expenditure accounted for 18.7% with most of it being household copayment. The lack of incentives often results in patients going directly to specialists even for minor ailments. The fee-for-service system also results in overtreatment and has been blamed for the high average length of stay. In 2002 there were 262,687 doctors at a rate of 1.98 per 1,000 population and a million nurses at a rate of 8 per 1,000 people.

Profile of the Ukrainian Healthcare System

Ukraine is the second largest country in Europe. It is a newly independent state formed as a result of the break up of the Soviet Union in 1991. In the 2001 census it had a population of 48.4 million, with 67% living in urban areas. During the era of the Soviet republic,
Ukraine was severely affected by major disasters including civil wars, famines, German invasion, and the Second World War. The Chernobyl nuclear accident in 1986 was a major catastrophe with significant consequences to life. The Ukrainian economy similarly suffered through a major economic recession from which it has only recently begun to recover. Since obtaining independence, Ukraine has developed the foundations for a more democratic system, but its healthcare system continues to be shackled by Soviet-style incentive systems.

Since its independence the population of Ukraine has fallen by 3.6 million or around 7.5%. The country finds itself faced with the unfortunate situation of poor economic health and a shrinking and aging population. Its fertility rate is the lowest in Europe, and its birth rate fell by 40% during the 1990s. This has been attributed by some to the increased rates of abortion. For example, in 2002, there were 82.8 abortions for every 100 live births. As a result of the low birth rates the proportion of the population under age 15 has declined over the last 10 years.

Ukraine faced a severe health crisis in the early 1990s when life expectancy actually fell by 4.4 years for men and 2.4 years for women. Although it has recovered from that crisis, in 2002 life expectancy was still only 62.2 years for men and 73.3 years for women. Cardiovascular disease is the primary cause of death in Ukraine. Because smoking is very prevalent (67% among men), alcohol consumption is very high, and 1% of adults have HIV/AIDS, the potential for significant health improvements is bleak.

Between 1990 and 1999 gross domestic product in Ukraine fell by 62%. This was not only a period of declining incomes, but it was accompanied by hyperinflation. Economic recovery since that time has been very slow. In 2000, only around 66% of the adult population is actively employed, and more than one quarter of the population lives in poverty. Thus, the ability of the government to finance the growing demand for health care is very limited.

In the postwar Soviet state, healthcare services with universal access to care was provided in a multitier structure with much of the responsibility for care being at the district (район) level and regional (области) level. The republic provided more of the guidelines and norms governing the lower tiers. Healthcare services were provide at hospitals, sanitary and epidemiological stations, polyclinics, and specialized healthcare facilities. Size and staffing of these facilities was determined by population size. Much of the provision of care was initiated at the clinics and by primary physicians. During the 1970s and 1980s, there was considerable growth in the network of specialized facilities and units. This shifted priority away from primary care and physicians to specialists (WHO, 1999). The goal of the planning authorities was to increase capacity as measured by beds and personnel, and as a result Ukraine had the highest number of beds and physicians per capita in the world. The incentive structure was such that 80% of healthcare expenditure went toward inpatient care, and long hospital stays were common even for minor disorders. During the waning years of the Soviet Republic a new economic mechanism (NEM) was introduced to transform the system to a performance-based system rather than a capacity-based system.
After independence in 1991, the economy experienced a painful restructuring stage with very little ability to fund the increasing need for health care. This phase of transition to a free market economy, as with many other former soviet economies saw dramatic increases in prices of pharmaceuticals as well as basic necessities such as energy. The Ukrainian Constitution in 1996 stated that the function of the state was to “create conditions for effective medical services accessible to all citizens.” Although Ukraine has universal access to health care for its citizens, most medical expenses are not covered except for children and other socially vulnerable groups. Thus, out-of-pocket payments are quite high.

The structure of the present day system continues to be similar to the Soviet system. Most of the primary health clinics or PHCs (6456 of them in 2000) are funded and operated at the district (rayon) levels. The regions fund and operate both the multispecialty, and specialized hospitals. They also establish the number of beds and staffing levels. The area serviced by a PHC is broken up into catchment areas (uchastok) each with a certain number of residents and a primary care physician. Although patients have free choice of physicians on paper there are many obstacles to it. They can also go to a specialist directly, and more than 60% do so. The incentive system is such that this is even lucrative for primary care physicians who get paid for referrals. Over 80% of public healthcare expenditure is funded locally. This results in significant inequalities across regions in the level of healthcare provision, and in 2001 a system of inter budget transfers was set up to remove regional imbalances. The budget allocation is based on the number of beds for hospitals and visits for clinics. There is very little incentive to be efficient, and the system encourages use of consultants and admissions.

Since 1991, healthcare expenditure in Ukraine has declined by 60%. The vast majority of healthcare facilities are publicly owned (24,166 such facilities in 2000) (WHO, 2000). Since 2000, there has been an attempt to increase the role played by privately owned facilities, but such a development is still nascent. The share of inpatient expenditure has dropped since independence but continues to be high at over 60% of total healthcare expenditure, mostly as a result of reductions in the number of beds. Capital investments in health care, while it has increased during the 1990s, remains low at only 7% of total health expenditures. Replacement of outdated medical technology and equipment has been very low at about 2%.

Private health insurance remains very limited with only 2% of the population covered by such policies in 2000. This is primarily as a result of the high cost of such insurance and the inability of much of the population to afford it. In 1998, Ukraine developed a plan to provide mandatory state social insurance. This was to cover the entire population with insurance premiums paid by employers and employees equally with employee premium levels set at a fixed proportion of income. However the high rates of unemployment and a poor state revenue base made this impractical and the plan was rejected by parliament in 2003.

Ukraine has a very large number of physicians per capita. In 2003, there were 2.95 physicians per 1000 people, according to WHO. Of this only 26.6% are primary care physi-
cians with the remaining being specialists. The staffing model and low remuneration has resulted in about 1300 vacant positions for physicians in 2000. The number of medical graduates rose by 20% from 1996 to 2001. Supply of nurses has been falling steadily. In 1991 it was the highest at 11.9 nurses per 1000 and had fallen to 7.8 by 2002. This is primarily because of low pay and low social prestige. Healthcare professionals are paid fixed salaries based on a national pay scale. Since 2000, the government has been making efforts to provide performance-based salary increments.

Profile of the United States Healthcare System

The United States is the richest country in the world and is a leader in technological innovation. It is no wonder then that it has evolved into a leader in the provision of sophisticated health care. In 2004, total health spending as a share of GDP was 15.3%, and health expenditures per capita were $6,100. This was higher than any other country. The United States also has one of the fastest growth rates in real health expenditures per capita (over 5% for most of the last decade) and spent the most on pharmaceuticals among Organization for Economic Cooperation and Development (OECD) member countries at $752 per capita in 2004. Yet over the past four decades the increase in life expectancy at birth of 7.6 years is less than the 14 years gained in Japan and 8.6 years in Canada over the same time period. This has resulted in the claim by many that the United States has reached a level of production of health care at which further improvements in health care will require very large increases in expenditure, an issue that we will explore further in the next section.

The US healthcare system relies extensively on private insurance to provide financial coverage for its people. More than 70% of the population under age 65 are enrolled in private health insurance plans, mostly through their employers. The American health system is distinguished by the unique role of managed care organizations. Managed care organizations evolved in the early 1970s primarily as a response to the rapidly growing cost of care in the United States. In the previously common practice known as fee for service providers charged a fee per unit of service rendered. Such a fee for service method resulted in significant overprovision of services since providers would be paid a greater amount the more services they provided. In managed care organizations, payment for services rendered by providers of care is usually a negotiated capitation or per enrollee rate. In the early days of managed care, health maintenance organizations, in which the same organization that provided insurance itself provided care, were the norm. Since then numerous other variants with different degrees of contractual arrangements between the insurance company and healthcare providers have evolved.

Government provision of health insurance in the United States is undertaken through Medicare and Medicaid, which were initiated in 1966. Health insurance for the population aged 65 and older is provided through Medicare. Part A of Medicare covers hospitalization and some skilled nursing facility charges, and the supplemental Part B covers physician and laboratory charges and medical supplies. Most prescription drugs are not
covered under Medicare, but the passage of the Prescription Drug Act in 2005 provides some relief from the soaring costs of pharmaceutical products. The working population pays a Medicare tax to pay for the benefits received by the elderly. The rapid growth in the elderly population caused by the aging of the baby boomer generation and their longer life spans, coupled with low birth rates and working populations, has made the financial viability of such a program a matter of immediate and great concern. The Medicare system has been unable to meet present obligations with current revenue since around 1995, and it is expected that it will deplete all of its accumulated funds within the next decade. Numerous attempts have been made to rein in the growth of Medicare expenditures including contracting with managed care organizations and stricter controls on charges by hospitals and physicians.

Medicaid is a safety net program for people with low income, mostly women, children, and the elderly and disabled, who receive federal or state financial assistance. The program typically covers charges for physician visits, inpatient and outpatient hospital stays, and nursing home stays. However each state has tremendous discretion in determining benefits covered. As a result, there are significant variations across states in the level of benefits provided by Medicaid. Although initially it was a federal-state program with matching federal funds, this program has increasingly become reliant on state tax revenue. As a result of escalating healthcare costs, Medicaid programs have become the largest single item in many states budgets. As with Medicare, attempts to control growing Medicaid expenditures have included contracting with managed care organizations.

In 2002, there were 5794 hospitals in the United States, and 3025 of them were non-government owned. Most of these hospitals are not for profit with only about 766 of them being investor owned. Hospital charges account for over one third of healthcare costs in the United States with a total bill of $650 billion. Medicare paid 43.5% of this bill, private insurance paid 31.2%, Medicaid paid 18.3%, and the uninsured accounted for 3.8%. Those aged 65 years and older make up about 13% of the total population but accounted for about 35% of all hospital stays. The top three principal diagnoses for this age group were hardening of the heart arteries, pneumonia, and congestive heart failure. The mean charge per stay was $17,300 with infant respiratory distress syndrome having the highest average charge at $91,400 (see Table 3-1).

In the United States, as opposed to most other OECD countries, private expenditure on health is larger than public expenditure, mostly financed through private insurance. The share of private insurance is therefore higher than in any other country in the OECD. However around 15% of the population does not have any form of insurance and ends up relying on emergency rooms for medical care. Emergency rooms are required by law to provide essential care regardless of insurance status. The cost of providing uncompensated care to them is recovered by hospitals when feasible by charging more for their insured patients. Faced with the strong forces of competition from other providers, healthcare facilities in locations where such uncompensated care is large often are faced with an inability to pass on much of the costs and hospital bankruptcies are quite preva-
The high cost of inefficiency to the hospitals under the new reimbursement mechanisms has also resulted in significant reductions in the number of hospital beds. The United States now has the fewest number of hospital beds per capita among OECD countries.

The United States has fewer physicians and nurses per capita than the OECD average (OECD, 2006). In 2000, there were 730,801 physicians with a density of 2.50 per 1000 and 26,669,603 nurses with a density of 9.37 per 1000. Because of the increasing prevalence of managed care organizations and the adoption of the relative value fee schedule for physician reimbursement rates the number of general practitioners has been growing while the number of some specialists (anesthesiologists, for example) has been declining. Smoking prevalence among adults has decreased to 17% in 2004, which is lower than Japan but higher than Canada. Obesity rates among adults were 30.2% in 2002—the highest in the OECD.

The question of why the United States with the prevalence of managed care and other cost-control mechanisms finds its healthcare costs soaring has been a question that has puzzled many. Three reasons are often cited for the rapid increase in healthcare costs: pharmaceutical price increases, utilization of new technology, and healthcare costs associated with aging.

Retail prescription drugs accounted for about 11% of national health expenditures in 2003, according to Smith et al. (2003). According to a study done by the American...
Association of Retired Persons (AARP, 2006), during the 2000–2005 period manufacturer’s prices for the most widely used brand name prescription drugs grew at an average annual rate of around 6%. Without exception prescription drug prices grew faster than the overall inflation rate during the last two decades. The growth in utilization of expensive new technology has been another key driver of the rising cost of health care in the United States according to many studies (Price Waterhouse Cooper, 2002; Hay, 2003). According to Rothenberg (2003), “Changes in medical technology accounted for 20–40% of the yearly rise in healthcare spending in the late 1990s.”

As pointed out in the earlier discussion of hospital costs, the elderly (65 and older) make up 13% of the population but consume 36% of health care. According to Stanton and Rutherford (2005), the elderly had an average healthcare expenditure of $11,089 compared to $3,352 for working age people in 2002. Figure 3-1 shows that 43% of the highest spenders are in the 65 and older age group. This age group is the fastest growing group in the US population. The number of centenarians in the United States grew by over 6% during the 1990s according to Krach and Welkoff (1999). There were 120 centenarians per 10,000 population aged 85 and older in 1990 while in Japan there were about 29. Manton and Waupal (1995) found that life expectancy at age 85 is significantly higher in the United States than in England, France, Japan, or Sweden. Although this can be seen as a feather in the cap for our healthcare system, it is also a cause for great concern due to the associated high healthcare costs.

### Comparative Analysis of Healthcare Systems

The five countries under study here show tremendous variation in the size of expenditures, role of government, and health insurance (see Figure 3-2). For consistency we have

![Figure 3-1](source: Adapted from Conwell & Cohen, 2005.)
used the same data source extracted from the World Health Organization Statistical Information System (WHOSIS) for our analysis. WHOSIS is one of the few data sets that collects comparable data for these five countries. The OECD has much more detailed data on some variables, but it does not collect data on Ukraine and India and hence is of limited value here.

The United States leads in healthcare spending and spends about seven times as much on total health expenditures per capita as does India. The share of government expenditure in total health expenditure is similarly very different across countries. While the government in India spends only $20 per capita annually on health care, the United States government spends over a hundred times as much. Canada has a universal healthcare system, and private spending is only about 30% of total spending. In the United States the majority (55%) is private spending, and in India three quarters of all healthcare spending is private. Ukraine, which has universal coverage, still has a high share of private spending as benefits provided are so limited that patients are forced to make sizeable out-of-pocket payments. In India where private provision of health care is dominant but where private health insurance is at a nascent stage, out-of-pocket expenditures account for almost all of private spending on health care, but out-of-pocket expenditures account for only about 25% of all private spending on health care in the United States. Private health insurance pays for over 65% of private spending in the United States while it pays for less than 1% in India where health expenditures are mostly financed by out-of-pocket payments. Thus,

**Figure 3-2** Per capita health expenditure shares.

*Source: Adapted from WHOSIS, 2006.*
India is the most private in healthcare financing, and the United States is the most privately insured economy.

The next question we can ask is does the type of system matter for the healthcare outcomes? Measures of health outcomes that are commonly used are life expectancy and infant mortality rates. The mostly public health financing system in Japan appears to do the best under either measure followed by Canada, which is also the second most in public financing of health care. In addition to the health system, lifestyle and other differences often play a big role as well here as we point out later.

Because measures of life expectancy do not always reflect the true health of the person, an alternate measure called healthy activity life expectancy (HALE) has recently been developed. HALE attempts to measure the number of healthy life years the person can expect to live.

The structure of the healthcare system and the reimbursement arrangements (capitation versus fee for service) can influence how much health care is provided per dollar spent. A crude illustration of this notion is displayed in Table 3-2. A more accurate investigation is undertaken in the next section. We compute the number of expected years of life at birth per dollar of per capita health expenditure by dividing life expectancy at birth and infant mortality rates by per capita health expenditure. Life expectancy per dollar spent (and HALE per dollar spent) is lowest in the United States across gender. Canada has the lowest outcome per dollar spent on infant mortality rate. The huge disparity in healthcare expenditures per capita across countries without an equally large disparity in outcomes is what drives this result, but the point still remains.

<table>
<thead>
<tr>
<th>Country</th>
<th>Life Expectancy per Capita Dollar</th>
<th>Infant Mortality Rate per Capita Dollar</th>
<th>Healthy Life Expectancy per Capita Dollar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males At Birth</td>
<td>Females At Birth</td>
<td>Male At Birth</td>
</tr>
<tr>
<td>Canada</td>
<td>0.02281 0.02394</td>
<td>0.00167 0.00245</td>
<td>0.02281 0.005122</td>
</tr>
<tr>
<td>India</td>
<td>0.62846 0.62557</td>
<td>0.75610 0.75610</td>
<td>0.62845 0.118146</td>
</tr>
<tr>
<td>Japan</td>
<td>0.03181 0.03376</td>
<td>0.00134 0.00198</td>
<td>0.031808 0.007615</td>
</tr>
<tr>
<td>Ukraine</td>
<td>0.17358 0.20276</td>
<td>0.00245 0.00422</td>
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<tr>
<td>United States</td>
<td>0.01162 0.01205</td>
<td>0.01205 0.01205</td>
<td>0.01162 0.002603</td>
</tr>
</tbody>
</table>

Source: Computations by authors.
There exists a good deal of evidence in the literature that shows that lifestyle factors play a major role in determining the level of health. The Japanese diet rich in fish has often been argued to be a principal reason for the healthier Japanese population. Smoking is highly prevalent among Japanese males and is second only to Ukrainian males. Obesity is most prevalent in the United States, and given the links between obesity, diabetes, and heart disease it is a cause for major concern. India has very low levels of obesity but high levels of smoking prevalence amongst males.

Thus, it is clear that there are wide variations in healthcare systems, expenditures, and outcomes across this selection of countries. In the following section, we describe and analyze production and productivity of health care in these countries.

Healthcare Productivity and Costs

In this section, we describe the concept of productivity and costs in health care and how they are used in making healthcare expenditure decisions. We then use cross-country data to estimate the production and cost of health improvements. We also compare the productivity and cost of health care across the sample of five countries.

Why does the United States have such high levels of medical expenditure per capita compared to the other countries but not much better outcomes? Phelps (2003), using data on perinatal mortality rates for five industrialized nations including Canada, Japan, and the United States points out that the “United States with higher medical spending than any other country is closer to the “flat of the curve” than other countries in the sense that additional spending on medical care is less likely to produce increases in health outcomes.”

In Figure 3-3 we plot per capita healthcare spending on male life expectancy at birth for our sample of five countries. As per capita healthcare spending increases from a low of $82 in India to $2,244 in Japan, life expectancy increases rapidly from 61 years to 79 years. Further increases in spending such as for Canada at $2,989 and United States at $5,711

![Figure 3-3 Health spending and life expectancy.](image-url)
actually see lower life expectancy of 78 and 75 years respectively. This could be taken to suggest that healthcare spending in Canada and United States is beyond the stage of effectiveness in increasing medical outcomes, which is an issue that we explore further in this section. The association depicted here must be taken with great caution because of the very small number of observations and other factors such as lifestyle that play a role.

Economists often describe the production of health care using the concept of a production function. A production function describes the relationship between inputs and outcomes. It specifies for any given technology of production, the maximum amount of output that could be produced by a given combination of amounts of inputs. Outputs or outcomes could be cancer detection, mortality rates, length of hospital stay, or other measures of morbidity, and inputs could be tests, treatment procedures, and expenditures. With better technology, methods, and processes the same amount of inputs, such as physician time, can produce more output. The average product of an input (often referred to as productivity of an input) is the amount of output produced per unit of input whereas marginal product of an input refers to the amount of additional output produced using an additional unit of that input. At very low levels of health care, every additional test (unit of treatment) has a large and positive effect in improving health outcome. As the number of tests and procedures performed on the patient increases, each additional test has a smaller and smaller effect on outcomes. Such a tendency is what is referred to as diminishing marginal productivity. Across disease groups, across countries, and across patients this pattern often tends to occur and may explain why the United States does not do much better in some measures of health outcomes while spending significantly more than many other developed countries.

Neuhauser and Lewicki (1975) were one of the first to use economic analysis to advise medical decision making. They looked at the use of the sixth stool guaiac test for detecting colon cancer cases. The stool guaiac test can be repeated in order to detect more cases because of the existence of false positives or negatives in each round of testing. Table 3-3 below shows the number of tests conducted and the resulting number of cases detected.

<table>
<thead>
<tr>
<th>Number of Tests</th>
<th>Number of Cancer Cases Detected</th>
<th>Additional Cases Detected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>65.9469</td>
<td>65.9469</td>
</tr>
<tr>
<td>2</td>
<td>71.4425</td>
<td>5.4956</td>
</tr>
<tr>
<td>3</td>
<td>71.9005</td>
<td>0.458</td>
</tr>
<tr>
<td>4</td>
<td>71.9387</td>
<td>0.0382</td>
</tr>
<tr>
<td>5</td>
<td>71.9419</td>
<td>0.0032</td>
</tr>
<tr>
<td>6</td>
<td>71.9422</td>
<td>0.0003</td>
</tr>
</tbody>
</table>
detected. As can be seen, while more cases are detected with more tests each additional test detects fewer and fewer additional cases of colon cancer. Moving from the fifth to the sixth test almost no additional cases are detected. Figure 3-4 plots the production function for cancer detection using the sixth stool guaiac test. The curve flattens out from the third test on indicating that very little additional cases are detected through additional testing. Figure 3-5 plots the marginal product of the sixth stool guaiac test showing the number of additional cases detected through additional tests.

Many studies such as Pritchett and Summer (1996) and Bhargava, Jamison, and Murray (2001) find evidence that higher incomes permit individuals to afford better nutrition, health care, and thereby health. Similarly studies (McGinnis & Foege, 1993) have shown that education and lifestyle factors play an important role in many
dimensions of health. At a cross-country level, the production of health (as measured by HALE) should depend on the country’s income (per capita gross national income [GNI]) and education (literacy rate) as well as lifestyle factors (smoking prevalence). We extracted data from the World Health Organization World Health Statistics data base for 58 countries (the reduction in sample size is due to the lack of data on smoking prevalence in many countries). Our regression result below suggests that not only does HALE increase with literacy rate and GNI, the effect of GNI on HALE gets smaller as GNI increases suggesting that it becomes less and less effective at generating higher HALE. Smoking prevalence was not significant probably because GNI already captures most of its effect.

\[
\text{HALE} = 35.6 + 0.186 \text{ALR} + 0.00141 \text{GNI} - 0.0000003 \text{GNI}^2
\]

Figure 3-6 shows the position of each of our sample of countries in this relationship (with literacy rate fixed at mean value of 80%). As can be seen, United States, Japan, and Canada are at the stage where further increases in gross national income is not likely to bring about any increase in HALE, while India and Ukraine are likely to see significant improvements in HALE as their economy grows. These results should be taken with great caution and are for illustrative purposes only as there are potentially multiple directions of causality between income and health (Chapman and Hariharan, 1994) for which we have not controlled. Bloom et al. (2004) also provide evidence that improvements in health have a significant positive effect on the rate of growth of GDP per capita. There are also problems associated with using cross-country regressions that we have not addressed.

Although productivity studies can characterize which tests or treatments or which countries are most effective in providing health care, to make decisions on allocation of scarce resources, the cost of treatments must play a central role. In a world faced with growing demands on its scarce healthcare budgets, the most pressing and controversial decisions are often associated with the questions of how much health care to provide?
Whether it is governments, healthcare providers, or private individuals making such decisions, cost considerations invariably become critical in addressing them.

There are many methods developed by economists and others to include cost considerations in making better decisions. The most controversial of these is benefit-cost analysis (BCA). In BCA the monetized value of all the benefits (better or longer life for example) is compared against the cost of obtaining such a benefit. The controversy in the use of BCA to allocate healthcare resources is often centered on the methods for monetization of health benefits. For example, one commonly used dollar value for increases in life expectancy is the value of a statistical life (VSL) (Viscusi & Aldy, 2002). The VSL is often arrived at by using the amount individuals have been willing to accept as appropriate compensation for a reduction in life expectancy (for example accepting a wage premium for jobs with a higher risk of death). Table 3-4 lists some estimates of VSL for a sample of countries. For example, the value of a statistical life in India is $3.3 million compared to $9.7 million in Japan.

Critics of this approach point to the difficulty of inferring from a small increase in risk of death to a large increase, as well as the wide range of these estimates and measurement errors in these studies. In a recent report (Jamison, 2006) the authors calculate the value of investments in health by comparing changes in annual healthcare costs to changes in annual population health outcomes monetized using VSL. They calculate that in the United States, the cost per disability adjusted life year in US$ ranges from as low a cost as

### Table 3-4. International Estimates of VSL

<table>
<thead>
<tr>
<th>Country</th>
<th>Estimates of Value of Statistical Life (millions of US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>5.7–74.1</td>
</tr>
<tr>
<td>Canada</td>
<td>5.1–5.3</td>
</tr>
<tr>
<td>India</td>
<td>4.1</td>
</tr>
<tr>
<td>Taiwan</td>
<td>0.7</td>
</tr>
<tr>
<td>Japan</td>
<td>9.7</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1.7</td>
</tr>
<tr>
<td>Australia</td>
<td>11.3–19.1</td>
</tr>
<tr>
<td>South Korea</td>
<td>0.8</td>
</tr>
<tr>
<td>Austria</td>
<td>3.9–6.5</td>
</tr>
<tr>
<td>United States</td>
<td>5–12</td>
</tr>
<tr>
<td>Ukraine</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Source: Adapted from Viscusi & Aldy, 2001; Wallsten & Kosec, 2005.
$3 for taxing tobacco products over $25,000 for performing coronary artery bypass surgery. In a study on the effects of technological change on cost and care, Cutler and Mcclellan (2001) identified two channels through which improved medical technology affects health: substitution of newer technology for older less effective technology, and expansion, in which more people are treated with the new technology. Their results suggest that while improved technology comes at a higher cost the benefit from them outweighs the cost.

As a result of some of these criticisms and the difficulties in identifying all of the costs and benefits across generations, other approaches have become popular in healthcare decision making. Perhaps the most popular method for advising decision making in the allocation of scarce medical resources is cost-effectiveness analysis (CEA). CEA measures the cost per additional or incremental unit of health outcome and uses that to guide decisions on which procedure or test should be used and how much of it should be undertaken. The popularity of CEA over benefit-cost analysis (BCA) comes from the lack of a need to monetize health outcomes or benefits. CEA can be used for both the decision on which test or intervention to use as well as for how much of any given test or treatment. In the Neuhauser and Lewicki (1975) study, the cost per additional case detected increases rapidly with each additional test (Table 3-5). The first screening test is highly cost effective: it gains an additional cancer detected for only $1,175. Further tests detect fewer and fewer cases and thus entail progressively higher costs per case detected. The additional costs per cancer detected gained due to the sixth test are over $40 million, making it highly cost ineffective. However, in order to decide on the number of tests that is reasonable to conduct it becomes necessary to draw a subjective line. One attempt to do this can be found in Chapman and Hariharan (1994, 1996) in which the value of statistical life provides the cutoff.

<table>
<thead>
<tr>
<th>Number of Tests</th>
<th>Total Cost of Diagnosis</th>
<th>Additional Cost of Detection</th>
<th>Cost per Cancer Detected</th>
<th>Marginal Cost per Cancer Detected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>77,511</td>
<td>77,511</td>
<td>1,175.354717</td>
<td>1,175.354717</td>
</tr>
<tr>
<td>2</td>
<td>107,690</td>
<td>30,179</td>
<td>1,507.366064</td>
<td>5,491.484096</td>
</tr>
<tr>
<td>3</td>
<td>130,199</td>
<td>22,509</td>
<td>1,810.8219</td>
<td>49,146.28821</td>
</tr>
<tr>
<td>4</td>
<td>148,116</td>
<td>17,917</td>
<td>2,058.919608</td>
<td>469,031.4136</td>
</tr>
<tr>
<td>5</td>
<td>163,141</td>
<td>15,025</td>
<td>2,267.677112</td>
<td>4,695,312.5</td>
</tr>
<tr>
<td>6</td>
<td>176,331</td>
<td>13,190</td>
<td>2,451.009282</td>
<td>43,966,666.67</td>
</tr>
</tbody>
</table>
International Comparisons of Cost

Because of a lack of comparable data across countries, especially for developing countries, international comparisons of healthcare productivity has until recently been difficult. The World Health Organization in 1998 began an elaborate study to compute the costs of health care for a wide range of countries using a standardized metric. They computed the unit cost of care for primary, secondary, and tertiary care bed days and outpatient visits as well as for health centers at different levels of population coverage. Table 3-6 lists the unit cost of care for hospitalization (bed days), outpatient visits, and health center visits for our sample of five countries. As expected the differences are quite stark. While Canada and Japan have similar unit costs, the United States has inpatient and outpatient costs that are about seven times as high. India has the lowest unit costs across the board followed by Ukraine. Unlike inpatient and outpatient costs, health center care costs for the three wealthier countries are not significantly different from each other indicating that the major cost difference between the United States and other industrialized countries must be found in hospitals.

To make any reasonable statements, sample sizes much larger than our five countries are required. We therefore extracted a set of 58 countries from the WHO-Choice data with recent information on healthy activity life expectancy (HALE) and unit cost per primary bed day. If the higher unit costs in developed countries are from better quality of care it should be reflected in higher HALE in those countries. We used unit cost per bed day

<table>
<thead>
<tr>
<th>Table 3-6</th>
<th>Unit Cost for Health Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Canada</td>
</tr>
<tr>
<td>Cost per bed day</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>140.09</td>
</tr>
<tr>
<td>Secondary</td>
<td>182.76</td>
</tr>
<tr>
<td>Tertiary</td>
<td>249.64</td>
</tr>
<tr>
<td>Cost per outpatient visit</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>55.43</td>
</tr>
<tr>
<td>Secondary</td>
<td>78.62</td>
</tr>
<tr>
<td>Tertiary</td>
<td>116.30</td>
</tr>
<tr>
<td>Cost per health center visit</td>
<td>29.05</td>
</tr>
<tr>
<td>50%</td>
<td>29.05</td>
</tr>
<tr>
<td>80%</td>
<td>31.58</td>
</tr>
</tbody>
</table>

Source: Adapted from WHO-Choice, 2006.
rather than per outpatient or health center visit because hospitalization is more often required for treating ailments with a high risk of death. As can be seen in the Figure 3-7, omitting the United States as an extreme outlier, the data does show that higher unit costs result in higher healthy life expectancy.

Figure 3-7 is a scatter plot of healthy life expectancy and unit costs of primary bed care for the 58 countries. The United States is an extreme outlier here because of its very high unit cost of inpatient care.

We also regressed healthy life expectancy on unit cost and unit cost squared to see if the increase in HALE gets progressively smaller as unit costs increase and find that to be true:

\[ \text{HALE} = 41.4 + 0.454 \text{ UNIT COSTS} - 0.00194 \text{ UNITCOST}^2 \]

Figure 3-8 shows the positive relationship between unit costs and health outcomes (as measured by healthy life expectancy. Thus there is some evidence that higher unit costs do translate into better health outcomes.

To summarize, there appears to be some evidence suggesting that perhaps as Phelps and others have pointed out the United States may be at a stage where additional improvements in health are more difficult to achieve while countries such as India and Ukraine may find it easy and less expensive to achieve improvements in health.

**Key Components of an Ideal Healthcare System**

In the first three sections of this chapter, we explored the similarities and differences of healthcare systems across five countries and looked at key inputs (cost) and outputs (outcomes) of existing systems. Each country is grappling with ways to improve healthcare
delivery systems. While India and the Ukraine are focused on improving life expectancy and access to care, the United States is focused on improving the efficiency of the American system to lower cost while maintaining quality. Each system has evolved over time based on its unique circumstances around politics, culture, religion, and economic resources. A great deal can be learned by comparing and contrasting healthcare systems around the world. In this section, we discuss the key economic components that drive health care in any country.

Imagine that you are responsible for developing an ideal healthcare system in a newly established country. Economics deals with the best allocation of scarce resources and can provide guidance for the design of an ideal health system in order to determine “who gets what care when with the available resources.” The challenges of developing an “ideal” model of care would be difficult to navigate. Here are a few key factors to be addressed in developing an ideal model of health care.

Access to Care

Access to care involves allocation of scarce resources based on the value assigned to human life. One of the foundational decisions to be made in any healthcare system is how much care will be provided. Based on the population to be served, a decision must be made about how many hospital beds are required, how much diagnostic equipment is provided and how many physicians and nurses are needed. These decisions will determine if and when individuals receive care. Capacity decisions are the biggest driver of cost, thus determining how much of the country’s GDP will be spent on health care. Important considerations in determining the access to care include the following.
Healthcare Professionals
A key factor in access to care is the compensation levels for healthcare professionals. As seen in the first section of this chapter, the compensation of nurses and doctors both in the amount and the manner of reimbursement, relative to other professions within the country, will determine the supply of these professionals, and will ultimately impact the level of access to care. Some countries, such as India, which pay a low relative wage to nurses, have seen a reduction in the number of nurses available to provide care. In a global economy, healthcare providers can select other professions or travel to other countries to practice their profession.

Infrastructure and Technology
The amount and type of medical equipment and hospitals can be determined based on factors such as population, age of the population, health condition of the population, and willingness to wait for services. The government-driven Canadian system provides less high-tech diagnostic equipment than the entrepreneurial American system. As a result, wait times for Canadian citizens are often longer than they deem acceptable. Canadians routinely augment the care they receive by coming to the United States and paying out of pocket for diagnostic tests, surgeries, and even hospitalizations. If Canadians did not have the option of American care available to them, they might demand that the government invest in more technology and infrastructure.

Financing Systems
One of the biggest drivers of the overall healthcare system relates to the financing system. In most countries, financing systems have largely evolved over time based on the type of government in place. Public funding is described as funding provided by governments, such as Medicare and Medicaid in the United States. Private funding is paid either by individuals, employers, or insurance companies. Ultimately, the party financing health care will determine how much care they are willing to purchase.

Public Financing
When governments pay for care, they are entitled to establish payment rates and must determine what is purchased. Some governments have imposed strict guidelines on what they will pay for, while others allow more individual choice in care. In developing a healthcare model, it is necessary to determine what populations public funding will cover. Options for coverage range from universal coverage or may be limited to a certain age or economic level.

Private Funding
Private funding refers to the healthcare funding provided by individuals, or in some cases, by insurance companies. In the United States, the employer has historically purchased health insurance on behalf of the employee. The United States has the lowest out-of-
pocket expenditure as a percentage of private expenditure on health. The result has been a disconnect between the amount of care obtained by the insured patient and the amount he or she pays for the care. Many would argue that the lack of personal financial responsibility has resulted in higher cost of healthcare services in the United States. This is known as the price-quantity relation. On the other extreme, in India individuals are required to pay for most care, but often lack the resources to do so, resulting in poor health status. Striking the proper balance of responsibility for funding is a key driver in developing an economically sound healthcare system.

Payment Methodology
Determining the payment methodology to providers is a key decision in the healthcare model. The goal is to encourage medical providers to provide the appropriate amount of care. If providers are reimbursed on a fee-for-service basis, the more tests they perform, the more money they receive. If however, providers are paid a fixed amount to care for a given population, known as capitation, there may be an incentive not to provide needed care. Another alternative is a cost-based approach, which pays the provider cost, plus a reasonable profit. Cost-based reimbursement does not encourage efficiency in delivering care. In the United States, the most recent trend is toward high-deductible insurance plans with health savings accounts. The design of these plans is to shift more financial responsibility to the consumer, and to encourage consumers to “shop” for the best price for the care they need. The goal is to force providers to offer competitive prices for their services.

Public Policy Decisions
There are a variety of public policy decisions that must be addressed regarding health care.

Public Health
A sound healthcare model must address how to provide incentives for healthy behaviors and lifestyles. Many countries have found that requiring certain immunizations can improve the health status of the entire country. Other countries, such as Canada, have seen large improvements in health status as lifestyle factors such as smoking have improved. For citizens covered by publicly funded programs, healthcare benefits could be linked to healthy behaviors. For example, government-funded programs could require vaccinations, routine exercise, or smoking cessation to receive government funding for their care.

Safety Net
Many healthcare models address providing care for those who can not afford to pay. Many studies show that the effective treatment of these patients reduces the overall cost of care in the long term. According to the HCUP fact book Hospitalization in the United States 2002, about 15% of the US population is uninsured, and the aggregate bill for them that year was $25 billion (AHRQ, 2003). Around 5 percent of infants born in the hospital are
uninsured, and providing care at an early age will prevent later costly disease states. Diabetes is a disease that should not require costly hospitalization in many cases if appropriate outpatient care is received. More than 8% of all diabetes hospitalizations occur in patients who are uninsured. Similarly a report by the Families USA Foundation (2005) finds that the uninsured are three to four times more likely than insured to go without preventive care services, and uninsured children are one eighth less likely to have a regular source of care as insured children. Uninsured patients when hospitalized are in worse health and three times more likely to die in the hospital. As a result of cross-subsidization of uncompensated care, health insurance premiums were $922 higher in 2005 for the insured. Between $65 and $130 billion of productivity is lost in the United States annually because the uninsured population does not receive care, is sick more often, and loses productive hours.

End-of-Life Care

As mentioned, there is a correlation between dollar of per capita health expenditure and life expectancy. But at some point, there ceases to be a direct correlation between these two variables. In the Ukraine, it would be rare to see a 70-year-old receiving heart surgery. In the United States, however, it is quite common. According to HCUP fact book Hospitalization in the United States 2002, the most common reason for hospitalization for Medicare beneficiaries is congestive heart failure with 745,000 discharges in 2002 (AHRQ, 2003). Hogan and colleagues (2001) calculate that over a quarter of Medicare outlays went to medical care in the last year of life. Decisions about how much care to provide at the end of life have a significant impact on the total cost of health care for a given country.

Litigation Costs

Another important public policy decision is how to compensate a victim who is harmed by the healthcare system. The frequency and size of awards can impact the overall cost of health care by resulting in defensive medicine, higher insurance premiums, and significant legal costs.

Healthcare systems are extremely complex and involve thousands of decisions about how to provide care. The end result of all of these decisions can be measured in a variety of ways as described earlier. The most common global economic measure of healthcare systems is the percent of GDP spent on health. The United States GDP expenditure on health care of 15.2% is 92% higher than Japan’s expenditure on health care of 7.9%. Healthcare expenditures have a major impact on the competitiveness of countries in the global economy. One notable example of how healthcare costs can impact global economics is the automobile industry. American automotive companies have had difficulty competing with Japanese carmakers because of higher production costs resulting from disproportionate healthcare costs. This competitive economic problem has been exacerbated by American automotive industry union contracts that require generous health benefits for current employees and continued insurance coverage for retirees. In 2002 for
example, Toyota turned down hundreds of millions of dollars in subsidies from many US states and chose to build a 1,300-worker factory in Ontario. According to Canadian Industry Minister David Emmerson, “Canadian workers are also $4–5 cheaper to employ partly thanks to a taxpayer-funded healthcare system in Canada (CBC 2002). According to Ben Carliner at the Economic Strategy Institute, “Rising healthcare and pension costs are draining funds from Detroit’s coffers and choking off research and design funding. Last year GM spent over $5.2 billion on medical benefits for over 1.1 million workers and retirees. That works out to over $1,400 per vehicle! There is more health care than steel in the cost of each GM vehicle sold. The other American automakers are in the same boat. In 2002, Ford spent $2.5 billion on healthcare benefits, and DaimlerChrysler spent $1.4 billion. In Japan and Europe, national healthcare plans mean that corporations pay little or nothing to maintain a healthy workforce. Healthcare costs are thus the source of a significant competitive disadvantage for the American auto industry and manufacturers generally” (Carliner, 2005).

When a disproportionate share of the cost of doing business is diverted to any sector of the GDP, it creates a competitive disadvantage in a global economy. In contrast, countries that do not provide adequate health care can be noncompetitive because of an unhealthy and unproductive workforce. A healthcare system that is significantly above or below the statistical norm for healthcare spending will result in consequences in the global economy. The globalization of trade forces all countries to consider how to provide appropriate levels of care through the most efficient delivery systems possible.

Acknowledgments

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References


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