

Introduction to Healthcare Economics

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Part I: What is economics?

To understand health economics, it is first critical to understand the basics of the discipline of economics. At its most basic level, economics can be defined as the study of choices made by individuals or groups of individuals when resources are limited (O'Sullivan and Sheffrin, 2003). This concept of limited resources, better known as scarcity to economists, is the backbone of economic thinking. To begin thinking like an economist, here is an everyday dilemma employing the concept of scarcity:

Billy has just received his weekly \$5 allowance from his parents and the money is burning a hole in his pocket. His friends ask him if he wants to go to a new movie that will cost him \$5. However, he also wants to buy some candy at the corner store that will also cost him \$5. Only having \$5, what should Billy do?

Notice that the money Billy has is scarce; he only has \$5 to spend so he cannot take part in both activities. An economist would look at all of the factors in this situation (such as what time Billy has to return home to make curfew, how much he thinks he will enjoy the movie, how much he thinks he will enjoy the candy, how much he values spending time with his friends, etc.), evaluate them, and attempt to figure out which course of action will be taken and why.

Basic Economic Concepts

We have already introduced the idea of scarcity in that the world operates on limited resources and that people must make sacrifices based upon these limitations. There are a number of other principles upon which economics operates and we must briefly present them before delving deeper.

Market – “A body of persons carrying on extensive transactions in a specified commodity, i.e., the cotton market,” (dictionary.com).

Self-interest and Informed Decisions – Economics operates on the ideas of self-interest and informed decisions. Self-interest is considered “the regard for one's own interest or advantage,

especially with disregard for others,” while the concept of informed decisions states that consumers are well-informed regarding the possible courses of action they can take (dictionary.com). These principles do not always hold true (i.e., self-interest does not hold true when donating to charity, and physicians are more informed about healthcare decisions than patients), but from an economic perspective, they are key assumptions.

Utility – “The capacity of a commodity or a service to satisfy some human want,” (dictionary.com).

Law of Supply – “A microeconomic law stating that, all other factors being equal, as the price of a good or service increases, the quantity of goods or services offered by suppliers increases, and vice versa,” (dictionary.com). This phenomenon occurs because firms are willing to sell a larger quantity of a higher-priced good or service in order to maximize revenue (www.investopedia.com).

Law of Demand – “A microeconomic law that states that, all other factors being equal, as the price of a good or service increases, consumer demand for the good or service decreases, and vice versa,” (dictionary.com). This makes sense as the consumer demand for a \$100 television set far exceeds the consumer demand for the same television set that costs \$1000.

Market Equilibrium – “Market equilibrium refers to a condition where a market price is established through competition such that the amount of goods or services sought by buyers is equal to the amount of goods or services produced by sellers. This price is often called the equilibrium or market clearing price and will tend not to change unless demand or supply change,” (Wikipedia.org).

Efficiency – Economic efficiency is achieved when the value of a given set of resources is maximized. For example, let’s say we have a package of goods and services and that they can be used in two different ways. In the first situation, these resources produce \$50 of value to consumers; in the second situation, these same resources produce \$40 of value to consumers. An economically efficient outcome would be the first situation, as this situation generates the

greatest value (Schenk, 2006). Although this is a simplistic example of economic efficiency, it is this very concept that is the driving force for many, if not most, policy decisions, especially in the realm of healthcare.

Competition – “A business relation in which two parties compete to gain customers,” (dictionary.com). Pure competition will drive down prices, encourage innovation, and lead to more economically efficient outcomes (wikipedia.org). Furthermore, a competitive market allows buyers and sellers to enter and leave the market as they wish. No market can be perfectly competitive but economic competition is the cornerstone of a capitalist society, as we have here in the US.

Principle of Opportunity Cost – “The cost of an alternative that must be forgone in order to pursue a certain action. Put another way, the benefits you could have received by taking an alternative action,” (dictionary.com). This means that the opportunity cost of a \$10 dinner is \$10. The dinner example is a bit simple; to get a better grasp of this principle, the opportunity cost of a college education is the total cost of education (tuition, books, room and board) PLUS the wages that a student would have earned in the four years that he/she attended college.

Marginal Principle – “Increase the level of an activity if its marginal benefit exceeds its marginal cost and reduce the level of an activity if its marginal cost exceeds its marginal benefit. Pick the level of activity at which marginal benefit equals marginal cost” (O’Sullivan and Sheffrin, 2003). When economists use the term “marginal,” they think in terms of small changes in a variable. Therefore, it is in the interest of economic efficiency to have a level of activity at which the marginal benefit (utility) equals the marginal cost. If the marginal benefit exceeds marginal cost, there is more benefit to be gained relative to cost and the level of the activity should increase; on the other hand, if the marginal cost exceeds marginal benefit, there needs to be a reduction in the level of activity because there is too much cost relative to benefit.

Principle of Diminishing Returns – This principle is best illustrated with an example. Let’s say that we own a business that needs to operate a piece of large machinery that requires multiple workers. We hire our first worker, then our second worker, then our third worker. We then hire

our fourth worker and fifth and sixth and seventh. At some point, adding more workers will not help our business run the machine any better or any faster. The point of diminishing returns is the point at which adding more workers will increase the machine's productivity at a decreasing rate.

Spillover Principle – “A side effect arising from or as if from an unpredicted source,” (dictionary.com). Thus, the spillover principle states that the costs and/or benefits associated with the transaction of goods and services are not always confined to the parties taking part in the transaction (O'Sullivan and Sheffrin, 2003). The concept of spillover is applicable to many business transactions and is easily illustrated by considering what happens when a city spends money to build a park: The city and taxpayers spend money on the park but plenty of non-taxpaying individuals, such as children, will receive some sort of benefit from the park without having contributed to the cost of the park.

Microeconomics versus Macroeconomics

There are two main branches of economic thought: microeconomics and macroeconomics. Microeconomics is the discipline that deals with small-scale events, such as transactions among individuals, households, and firms, and how these entities make decisions based on scarcity (Wikipedia.org). Thus far, all of the concepts we have presented are more pertinent to microeconomics than macroeconomics.

Macroeconomics, on the other hand, “deals with the performance, structure, and behavior of the economy as a whole” (Wikipedia.org). Macroeconomics is more concerned with concepts such as inflation, unemployment, Gross Domestic Product (GDP), international trade, the national budget deficit, etc.; this is the study of an entire nation's economic status.

Although understanding of both branches of economics is vital to the functioning of a healthy society, understanding microeconomics is much more important to the comprehension of healthcare economics. Even though healthcare contributes to a very large percentage of our GDP, the study of healthcare economics deals with transactions between patients, doctors, hospitals, and insurance companies and thus falls under the umbrella of the microeconomic concepts outlined above.

Part II: Healthcare Economics

Introduction

Healthcare economics, as you can imagine, takes the basic principles and methods of economics and applies them to the study of the healthcare field. Why do people want to do this? Why is studying the economics of healthcare important? If, for instance, a public health official looks at pediatric vaccination rates and sees that they are lower than the determined goal, she wants to understand why that is. She could simply send a memo to all pediatricians and hospitals telling them to increase their vaccination rates. However, the problem is likely more complicated than physicians simply forgetting to vaccinate children, and her memo will be ineffective. In order to better understand this problem, the public health official will need to consider the economic issues associated with pediatric vaccinations.

Let's take a step back and define healthcare economics. (While, health economics is used interchangeably in public, this text will use the term healthcare economics.) Mosby Medical Encyclopedia defines healthcare economics as the study of "the supply and demand of health care resources and the impact of health care resources on a population." (1992). The Australian Government Department of Health and Ageing describes health economics as "the principles and techniques used in economic evaluation to support decision making, when alternative uses of resources are being considered for health care delivery." The first definition broadly describes the economic aspects of healthcare economics, noting the influences of supply, demand and healthcare impact, and introducing the idea of healthcare resources. The second definition more specifically describes the use of healthcare economics as a tool to evaluate options when choosing between alternative uses of healthcare resources.

The concept of healthcare resources was presented in the definition of healthcare economics, and we should take a moment to identify what these resources are. Santerre and Neun group these into three categories: medical supplies, personnel, and capital inputs. Medical supplies consist of bandages, medications, and patient gowns, among others. Medical personnel include the obvious doctors, nurses, and dentists as well as the receptionists, equipment technicians, and administrators who keep operations functioning. Capital inputs include care facilities like hospitals and nursing homes, and diagnostic and therapeutic equipment like MRIs and dialysis machines.

We have as of yet avoided defining health, and for good reason: no one has established a definition that everyone can agree upon. When defining health in human terms, the American Heritage Dictionary defines health as “soundness, especially of body or mind; freedom from disease or abnormality”. The most widely accepted definition comes from the WHO which expands upon this definition to define health as “...a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (Preamble to the Constitution of the WHO).

Clearly, defining health has been no easy task, but quantifying health has proven even more difficult. Economists have developed different ways to quantify health, and each method has its critics. One such method of quantifying health is the quality-adjusted life-year (QALY), which measures health by combining quantity and quality of health. Quantity of life is relatively easy to measure (weeks, months, years), although it is difficult to predict, even for doctors (Christakis and Lamont, 2000; Brandt et al., 2006). Quality is even more difficult to quantify and can involve many subjective measures. Regardless of these difficulties, the QALY is generally accepted as the main economic measure of health. For example, a patient with extensive gangrene in one leg may be expected to live for 10 more years if his leg is amputated and may have a quality of $\frac{3}{4}$, since he has only 3 of his 4 appendages. In this case, the patient would be expected to have $10 \times \frac{3}{4} = 7.5$ QALY. For more information on QALY, see <http://www.jr2.ox.ac.uk/bandolier/booth/glossary/QALY.html>.

Healthcare System Design in the United States

In order to understand the economics of healthcare, we need to first understand how healthcare systems are organized. In a general sense, the healthcare market is similar to other markets in that there are consumers (i.e. patients) who have a need for the services offered by producers (e.g. physicians). However, the healthcare market is complicated by the presence of third-party payers (i.e. insurance companies and the government, in the case of Medicare and Medicaid) (Fig. 1.1). You can think of third-party payers as a surrogate for patients – much like a parent who has the financial ability to pay for the service and the authority to determine whether or not to buy (or pay for) the service.

Production

SOURCE: Developed from Stahl (1990) and Reinhardt (1990).

Figure 1.1 Healthcare System Model. From Santerre and Neun (2000).

The above model is a general one that describes most major healthcare systems in the world. This paper will focus on the role of economics in the US healthcare system. However, a comparison of the economics of some other major systems (e.g. United Kingdom, Canada, Germany, France, Japan) would provide exciting insight given the current push for healthcare reform in the US (See Wilson JF for an example comparison).

Looking back to the model in Figure 1.1, medical care is provided by healthcare professionals (i.e. doctors, dentists, nurses, technicians, etc.) and healthcare organizations (i.e. hospitals, clinics). Providers interact with both patients and third-party payers providing medical services to patients and submitting reimbursement claims to third-party payers. In return for their services, providers receive compensation from patients, third-party payers, or a combination of the two. These interactions provide opportunities for modification in an attempt to alter the economics of healthcare, and we will look at these in the next section: Market Forces in US Healthcare.

We mentioned the interaction between patient and provider (services in return for compensation) and how third-party payers reimburse providers, but how do the third-party payers get their money? In other words, how is healthcare in the US funded? We will first discuss the basics behind insurance, and then we will identify the specific entities that finance healthcare in the US. Whether the payer is an insurance company or the government, these entities use an insurance model in which patients are grouped together. As you can imagine, some patients are more likely to consume healthcare resources. Think about how often little boys need stitches or how often elderly are in the hospital. Third-party payers group these “high-risk” people together with “low-risk” populations (e.g. people in their 20’s to 40’s) in a process called risk pooling. In this manner, the risk is averaged over the whole population of people insured by a particular entity. Patients then pay a premium (a periodic payment to the insurance provider) based on the average risk of the population. Mathematically, this model is accurate, but there are two problems that each involve the behavior of the associated parties. The first problem is adverse selection or “the tendency for credit and insurance to be sought only by those who have greater than average need which thereby raises a plan's cost and reduces its benefits” (Webster’s). Insurance companies counter this behavior through antiselection in which they seek low-risk, or healthy, customers (on whom the company will make a profit). The second problem is moral hazard or the “risk to an insurance company resulting from uncertainty about the honesty of the insured” (American Heritage Dictionary). Moral hazard also describes the tendency of insured persons to take more risks because they know their insurance will cover any healthcare needs that arise. The above explanation is greatly simplified, but it is the basis of insurance modeling and should suffice for our discussion. In this model, used by insurance companies, the low-risk individuals subsidize the high-risk individuals. In government systems like Medicare and Medicaid, the subsidy is based not on risk, but on income; individuals with higher incomes subsidize, through taxes, those with lower incomes.

As mentioned above, third-party payers are either private insurance companies – Aetna, Kaiser, or Blue Cross/Blue Shield, for instance – or government-funded programs like Medicare and Medicaid. Private insurance companies are currently designed as Managed Care Organizations (MCOs) whose role is to provide healthcare insurance to their customers (patients) and to manage the utilization and cost of medical services by monitoring these parameters and determining whether healthcare services are used appropriately and provided at acceptable cost.

MCOs are arranged in one of four different models, ranging from the most restrictive to the least restrictive: health maintenance organizations (HMOs), preferred provider organizations (PPOs), point of service plans (POS), and indemnity insurance plans.

HMOs like Kaiser combine the insurance company and the provider into a company that offers care generally at a low price, but requires patients to see providers employed by the HMO. Patients can choose to see providers outside of the HMO, but their HMO will not pay for any medical costs accrued (from an office visit to surgical procedures). Additionally, for a given medical need, the acceptable services are determined by the HMO. PPOs are less restrictive in that they provide coverage for out-of-plan providers in addition to in-plan providers but reimburse providers at a reduced rate. Therefore the patient must pay the balance of the fees not covered by the PPO. Providers are not employees of PPOs, as they are in HMOs, but they enter contracts with PPOs to provide services at a reduced fee. POS and Indemnity plans have fallen out of favor in recent years and will not be covered in this chapter. However, there is an online section in this textbook that discusses insurance (<http://www.case.edu/med/epidbio/mphp439/index.htm>).

Whereas private insurance is available to those who can afford it and choose to purchase it, the public insurance is provided by the government to certain demographic populations at little to no cost. Medicare is a federally funded program that covers the elderly (over 65 years old) and the disabled. It is administered in four different parts: A, B, C, and D. Part A is provided to the above populations free of charge and covers in-patient services and nursing care. Part B is a voluntary program with low monthly premiums, a deductible and copays and covers all medical services except medications. Part C (Medicare Advantage) is funded by Medicare but administered through a private insurance company and includes coverage from Parts A, B, and possibly D (at the discretion of each company). Part D was implemented in 2006 and is a voluntary program designed to be used in addition to Part B and provides coverage for medications.

The Relationship between Health and Medical Care

There are several basic economic concepts that describe the relationship between health and medical care. These are best described by general graphs, the first of which is the total utility curve (Fig 1.2) which states that improving health increases the utility for the patient but is

subject to the law of diminishing marginal returns such that progressive increases in health have a progressively lower increase in utility (Fig 1.3). Remember, utility is the satisfaction someone gets from using a product, or in this case, from having health. The utility in having health may come from feeling better or from having more time to pursue enjoyable or profitable activities, like employment. Notice, again, the subjectivity associated with quantifying health that we mentioned in the Introduction to Healthcare Economics. The marginal utility curve (Fig. 1.3) describes the relationship between health and utility in another way, indicating that each additional unit of health provides a progressively lesser increment of utility.

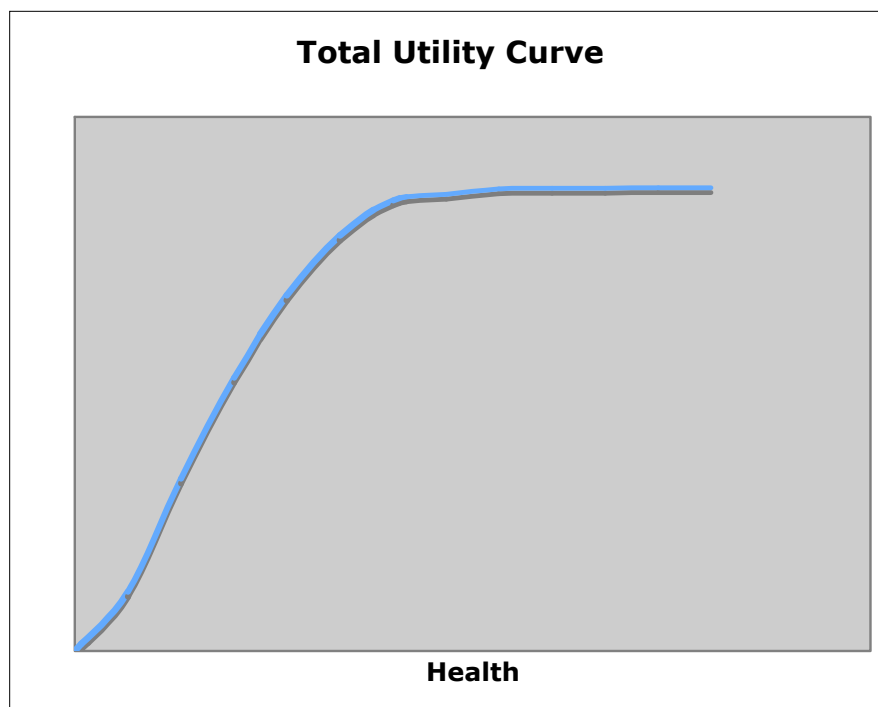


Figure 1.2. Total Utility Curve.

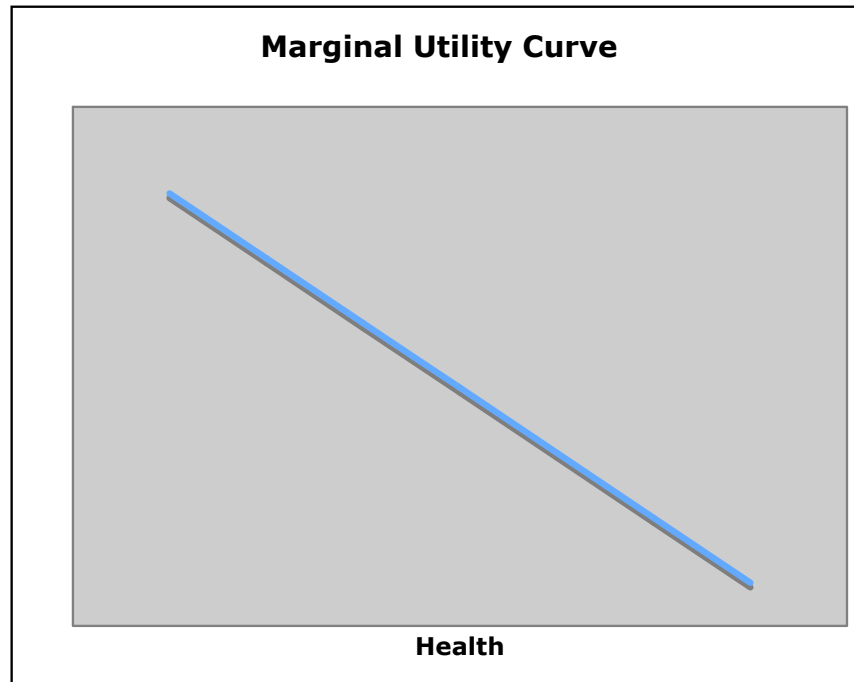


Figure 1.3. Marginal Utility Curve.

In order to achieve the aforementioned increases in health, individuals use medical services and other inputs (e.g. exercise, diet, etc.). In the same way that utility is a function of health (Fig. 1.2), health can be described as a product of these medical services and inputs (described generally as medical care). This relationship between health and medical care is illustrated by the total product curve (Fig. 1.4) in which health increases as medical care increases. For example, if a patient exercises regularly and eats a low-fat diet, she may be on the upper third of the linear portion of the total product curve. If she then begins to see her physician routinely, she may move up the curve. Again, one can see that the total product curve levels off with increasing usage of medical care due to the law of diminishing marginal returns. In terms of medical care, the utility of medical care decreases with each additional unit of medical care consumed such that an individual obtains a lesser gain in health for each additional unit of medical care consumed (Fig. 1.5). For example, a 40 year old man who visits his physician twice a year will gain substantial health from the screenings or medications he is provided for any conditions that may be found. However, if this same man visits his physician 50 times in the same year and his average health is only slightly greater, the value, or marginal product, of each visit becomes much lower.

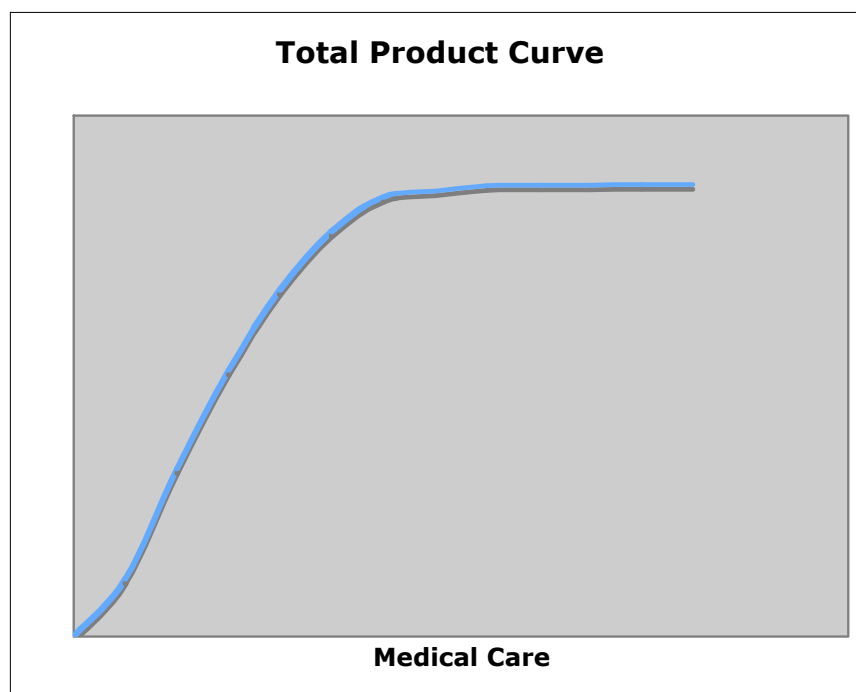


Figure 1.4. Total Product Curve.

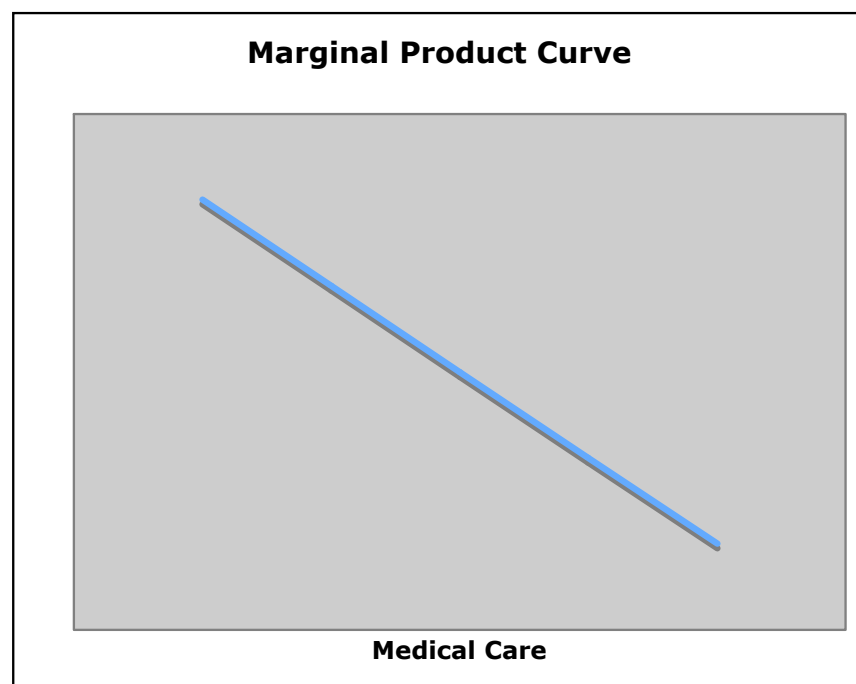


Figure 1.5. Marginal Product Curve.

Market Forces in US Healthcare

Market forces in US healthcare stem from the relationships between patients (consumers), healthcare providers (producers), and insurance companies (third party payers – refer to Figure 1.1). Although these interactions are extremely complex and their intricacies are beyond the scope of this paper, we will present a basic overview of the important concepts of the premium, the copayment, and the deductible. The premium can be defined as the amount of money paid to an insurance company in order to provide insurance coverage for a patient. This monthly premium is obtained from the patient, the patient's employer, or a combination of the two. The insurance company hopes to make a profit by having the amount of collected premiums exceed the incurred medical expenses. A copayment (or copay) is the amount of money that a patient must pay to a healthcare provider for one visit; usually, this amount is small in comparison to the amount the provider receives from the patient's insurance company. However, the patient is responsible for paying a portion of the visit out-of-pocket; if this were not the case, there would be an overabundance of medical care demand, as patients would have no incentive not to consume care. Thus, a copayment is an attempt at cost-sharing between patient and insurance company and deters patients from seeking medical care unless it is truly necessary. Another attempt at cost-sharing is the deductible. A deductible is the amount of money a patient must pay out-of-pocket before the patient's insurance coverage will begin to pay for medical care. For example, an insurance company may offer a plan with a \$1000 deductible; this means that a patient selecting this plan must first pay \$1000 out-of-pocket before the insurance company will begin to assist with medical costs; deductibles renew every year so this patient will also be required to pay the same \$1000 the following year. Like a copay, a deductible attempts to deter patients from consuming medical care (because the patient pays the *entire* deductible) unless it is medically necessary care.

A simple example will illustrate one possible interaction between these three inter-related concepts. Let's say a patient makes it their priority to pay the least amount of money out-of-pocket for their medical visits (i.e., they want to have low copays and a low yearly deductible). Because both copays and deductibles are methods of cost-sharing, the insurance company needs to find a different way to offset potential medical expenses for this patient. How will it do so? The only way an insurance company can do this is by increasing the patient's premium. Thus,

there is a trade-off between these three entities. A low deductible is often one of the main goals of patients when selecting an insurance plan; however, their copays and premiums will increase as a result. Each patient will weigh many factors (including perceived level of health, cost of medical care, employer premium contribution, insurance plans offered) and attempt to select the plan that will minimize the amount they will have to pay.

Major Topics in Healthcare Economics:

One way to determine major topics in healthcare economics is to look at the topics covered in leading healthcare economics texts. Steven Eastaugh and Paul Feldstein are two recognized leaders in this field and this chapter will draw from their discussions of the economics of health care.

In his text, Health Care Finance and Economics, Eastaugh discusses different health care delivery models in the US, the practical impact of economies of scale on efficiency and delivery models, and types of risk to providers and insurers. Eastaugh also discusses selection of a product line and the role of specialization in designing a business. Once these aspects have been determined and the business is set up, Eastaugh describes how to analyze risk and reduce it, how to standardize costs and analyze financial flows, and the role of collaboration, mergers and diversification in improving performance.

One chapter is focused on the economic influences on physicians and the impact of physicians on healthcare economics. In this chapter, Eastaugh covers trends in physician supply, reimbursement methods and their economic implications, controlling quality and volume of services, potential areas for improvement, and factors that affect physician practice and income. Following this coverage of physicians is a chapter on increasing productivity through operational assessment, improved scheduling of healthcare provider time, and potential incentives and design of a plan to utilize them to increase productivity. These issues are particularly salient at a time when Medicare is piloting pay-for-performance programs (Centers for Medicare and Medicaid Services 2005) with controversial results (Grossbart SR 2007 and Glickman SW et al. 2007). Chapters on production functions and analysis describe the concepts and methods used to analyze the effect of such programs on production.

Several chapters are spent covering measurement of quality of life using the Quality-Adjusted-Life-Year (QALY), cost-effectiveness, and cost-benefit analysis. The end of

Eastaugh's text covers market strategy and issues relating to capital finance, debt financing and capital structure.

Paul Feldstein's text, Health Care Economics, is divided into a number of topic areas. Throughout the first few chapters, Feldstein introduces a number of subjects, including the medical care sector, the impact of medical services on health, how price changes are measured in the healthcare sector, and the link between economics and healthcare.

After presenting the basics, the book delves into the nitty-gritty of healthcare economics: The supply and demand of medical services as well as the demand for health insurance. Feldstein then proceeds to discuss market competition in healthcare, making sure he is able to segue into examinations of the markets for health insurance, hospital care, physician services and manpower, medical education, and nurses.

The book then takes a sharp turn and looks at the role of government and legislation in healthcare economics, dedicating a full chapter to the prospect of national health insurance. Finally, Feldstein concludes with a chapter dedicated solely to the market for long-term care services.

For current issues in healthcare economics, the *Journal of Health Economics* is an excellent resource. Within this journal, the following topics can be found:

- production of health and health services
- demand and utilization of health services
- financing of health services
- measurement of health
- behavioral models of demanders, suppliers and other health care agencies
- manpower planning and forecasting
- the prevention of sickness
- cost-benefit and cost-effectiveness analyses and issues of budgeting
- efficiency and distributional aspects of health policy
- and many other topics (Elsevier.com).

The *Journal or Health Economics* can be accessed online through Elsevier.com.

Economics in Current Healthcare Issues:

Medicare Part D:

Recent history saw a number of senior citizens (age 65 and up) going without medically necessary drugs due to the high cost of these drugs. Responding to the public outcry about the lack of affordable prescription drugs for seniors, Congress implemented Medicare Part D in 2006, a voluntary prescription drug benefit, in hopes of increasing access to much-needed drugs for Medicare patients (Pauly, 2004).

A major feature of this new program is the ability of seniors to shop among insurers to see what best suits their individual needs (McFadden, 2007). Dr. Daniel McFadden, winner of the 2000 Nobel Prize in Economics and professor at the University of Berkeley, calls this “a massive social experiment on the ability of a privatized market to deliver social services effectively” (McFadden, 2007). Initially, the major problems were the high amounts of confusion faced by many seniors about how the benefit worked and the start-up issues faced by individual firms offering Part D coverage. Luckily, Part D was navigated well by most consumers, but McFadden notes that about 1.2 million seniors who would have immediately benefited from Part D did not enroll at all (most likely due to being undereducated) (McFadden, 2007).

Part D has mixed results regarding the two main insurance problems of adverse selection and moral hazard. McFadden notes that adverse selection has not been a problem for Medicare Part D because a large majority of seniors have voluntarily enrolled in a plan. Of those enrolled, there are plenty of healthy seniors who are net contributors to the Part D system. Furthermore, for insurers to be included as part of the Part D system, there is a requirement that they must take all Medicare enrollees wishing to sign up for Part D (McFadden, 2007). However, there is somewhat of a large degree of moral hazard as a result of Part D, as the average number of prescription drugs taken per month by new Part D enrollees has risen from 3.3 to 4.4 (McFadden, 2007).

McFadden’s general analysis suggests that Part D has been a success in doing what it initially set out to do: provide affordable prescription drugs to seniors. He attributes a large part of the program’s success to the “muscular management of the market:” the former head of Medicare, Mark McClellan, and his governmental associates used their political power to force insurers to cover all seniors and offer only good insurance plans (McFadden, 2007).

It appears as though Part D will provide enough coverage to seniors to reduce medical problems and hospital expenditures to offset a large portion of the cost of the Part D program;

however, McFadden notes that there may be reduced adherence to medication regimens that will negatively affect health outcomes (McFadden, 2007). Ultimately, the bottom line is that it is too early to perform a full economic analysis of Medicare Part D. Nevertheless, to date, Part D is exceeding expectations.

Universal Healthcare:

Within the past year or two, the United States of America has begun to see a shift in ideology among states in the union such that universal healthcare is at the forefront of citizens minds. Massachusetts and California are the trailblazers in requiring all state residents to have health insurance coverage in the near future.

Massachusetts:

In April 2006, Massachusetts Governor Mitt Romney signed the Massachusetts Health Care Reform Plan, which would require nearly all Massachusetts residents to have health insurance coverage. The plan details integral roles for both individuals and employers. All residents are required to purchase plans by July 1, 2007; those who do not are subject to fines. Furthermore, all employers with more than 10 employees are required to provide either health insurance or pay a “fair share” of up to \$295 per employee per year (Kaiser Family Foundation, 2006).

In order to obtain cost-reduced coverage, Massachusetts created the Commonwealth Health Insurance Connector to offer low-cost, quality insurance programs to both individuals and small businesses. In addition, the state increased the number of people that it would cover under Medicaid, offering coverage to more children and adults in lower demographics (Kaiser Family Foundation, 2006).

To make this universal healthcare plan an economic reality, Massachusetts has made a number of bold moves (Kaiser Family Foundation, 2006):

1. Massachusetts will merge the individual and small-business health insurance markets, in hopes of reducing premiums by approximately 24 percent.
2. The state will also assist low-income individuals through the Commonwealth Care Health Insurance Program. The government will subsidize insurance

coverage for individuals earning less than 300 percent of the federal poverty level.

3. The state will allocate \$1.2 billion to the program over three years. The funds will come from redistribution of current funding, including soaking up funding from the “free care pool” (as there will be few, if any, individuals needing free care with an almost-universal healthcare coverage program) and putting it into a health insurance subsidy pool. The state also plans to obtain new funding from employer contributions and general state revenue.
4. Massachusetts will create an “Essential Community Provider” grant program to support community health programs.

Nonetheless, there are potential problems with the Massachusetts plan (Kaiser Family Foundation, 2006):

1. Offering of affordable plans: The new law requires purchasing of insurance plans only if they are deemed “affordable.” But what exactly is “affordable?” Legislators anticipate these plans will cost between \$200 and \$250 per month, well below the national average of \$335 per month; nonetheless, only time will tell if insurers will realistically be able to offer these types of low-cost plans given their own set of costs.
2. Employer offering of health insurance plans: As mentioned above, all employers with more than 10 employees will have to contribute \$295 per employee per year to serve as a “fair share” contribution. Still, insurance coverage costs far more than \$295 per employee per year. Will this “fair share” contribution be enough to drive employers to offer coverage?
3. Will it be enough money?: Many experts question the allocation of funds to the program, given the perpetually increasing costs of healthcare. As is, the program does not allocate additional funds for the first three years; this may be a significant problem.

Only time will tell if the Massachusetts program will be feasible but it is a serious first attempt at universal healthcare and its ins and outs will surely be analyzed by healthcare

policymakers in the future to discern whether or not the Massachusetts plan is a pragmatic blueprint for the future prospect of universal coverage across America.

California has undertaken a similar task to make its healthcare coverage universal, although Governor Arnold Schwarzenegger's proposal is more recent (January, 2007). The California proposal is on a much bigger scale than Massachusetts (due to sheer population differences) and thus will engender much more controversy. For detailed information about the California proposal, please go to http://gov.ca.gov/pdf/press/Governors_HC_Proposal.pdf.

Reimbursing Providers:

In general, there are three main ways in which providers are reimbursed for healthcare services: Fee-for-service (FFS), capitation, and salary.

Fee-For-Service:

FFS reimbursement involves either the individual or the individual's insurance plan paying the provider a set fee for each service provided. For example, if a patient needs an x-ray, either the patient or the patient's insurance plan would pay the provider, say, \$50 for the x-ray; this would include the cost of the x-ray and provider profit. From the perspective of providers, it would be in their financial interest under a FFS system to see as many patients as possible, perform as many procedures as possible, and make these procedures as expensive as possible; clearly, this would maximize provider profits. In other words, providers would have an incentive to give as much care as possible, thereby giving many patients excessively expensive care and/or care that has no marginal benefit to patient health. This outcome would be considered economically inefficient. Until the early 1980's, FFS was the main way in which providers were reimbursed from insurance plans. When insurance companies realized that their costs could be cut by using a different method of provider reimbursement, capitation became the new mainstay.

Capitation:

Capitation is a reimbursement scheme whereby an insurance plan supplies each provider with a set amount of money to treat each patient over a fixed time period. Let's assume that Insurance Plan A decides to give each of its cardiologists \$100 per patient per month. Patient #1 comes in with chest pain. Let's also assume that the two best (and equally effective) treatments

for chest pain are a pill and surgery and that the pill is cheaper than surgery. When the cardiologist is forced to choose between a pill and surgery for this patient, the cardiologist will choose the pill, as it is less expensive; this choice will result in the cardiologist pocketing more of the \$100 insurance plan reimbursement as less of the \$100 was used in treating the patient. Had this same physician been under a FFS reimbursement scheme, from an economic standpoint, he/she would have chosen the surgery option, as he/she would have profited more from dispensing a more expensive service.

Insurance companies currently use capitation because it cuts costs and limits what physicians can do with a finite amount of available money. Capitation saves money when compared to FFS reimbursement. At the same time, however, capitation has its drawbacks. First, it encourages physicians to under-treat patients. Realistically, it usually costs more money to get more effective treatments (in many medical instances, surgery is more effective than a pill but the surgery also costs a lot more). With only a fixed amount of money to spend, it would always be in the physician's best economic interest to choose the less-expensive treatment; this would prevent some patients from obtaining medically necessary treatments and lead to worse patient outcomes. Second, capitation encourages physicians to see as many patients as possible; because physicians are given a set amount of money per patient, seeing more patients means more profit. Unfortunately, patient visit times suffer, again leading to poorer patient outcomes. Finally, physicians may also seek out healthier patients, as these patients will not require expensive treatments and will allow physicians to keep more of the money that insurance companies give them.

Salary:

Another option is to put providers on salary (i.e., give providers a certain amount of money per year, regardless of the number of patients seen or services dispensed). Many physicians employed by academic medical centers as well as the government are salaried; the academic medical center or the government will pay the physician's salary. In contrast, because private practices are privately owned (often by the physicians themselves), physicians working within them are often not salaried. From an economic viewpoint, a set salary encourages providers to see as few patients as possible and distribute as few services as possible. This outcome is solely due to the idea that physicians who are on salary have more free time if they

do less. These providers will then be able to use this free time to obtain utility (not necessarily money) from other activities.

A fourth, and untraditional, method of reimbursement has recently come to the forefront: Pay For Performance (P4P). P4P is a controversial subject because it involves paying physicians based on their performance but it is ultimately designed to improve the quality of care. However, what exactly does performance mean? Does it mean patient satisfaction or patient outcomes or procedures performed by the physician or does it mean something else? Trying to define the exact parameters of how to pay physicians and how to judge their performance is where the water gets muddy. The Veterans Administration (VA) Health System has recently implemented some form of P4P in its hospitals, but not without controversy. For more resources on P4P, please go to <http://www.ahrq.gov/qual/pay4per.htm#info>.

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