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# Chapter 1: U.S. Medical Care: A System in Transition

This chapter introduces the student to the economic way of thinking as it relates to the study of the U.S. medical care system. After a brief summary of the historical development of medical care delivery and finance, the basics of economic modeling and analysis are addressed. The similarities and differences between medical care and other economic goods and services are also discussed. As a set of unifying themes providing focus and continuity throughout the book, ten guiding principles are introduced and defined.

**New Content in the 5th edition**

Students are introduced to the recent health care legislation opening discussion in the "Patient Protection and Affordable Care Act of 2010." The inconvenient truths about health care spending (Fuchs, 2005) are featured in "Concerns over High and Rising Spending." A new Figure 1.2 highlights the differences in growth trends between health care spending and gross domestic product. All other tables and figures are updated.

**Chapter Outline**

a. Historical developments in the delivery of medical care
    1. Post-war experience
    2. Concerns over high and rising spending
    3. Changes in medical care delivery
b. The nature of medical care as a commodity
c. Health economics defined
d. Ten key economic concepts
e. Summary and conclusions

| Issues in Medical Care Delivery |
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| • Patient Protection and Affordable Care Act of 2010 |
| • Spending Somebody Else's Money |

**Chapter Objectives**

1. Understand the nature of the health care crisis in America.
2. Identify the important historical developments affecting health care delivery and finance in the U.S. system.

3. Identify and explain the major reasons for the high and rising cost of medical care.
4. Understand how the third-party payment mechanism and managed care affect health care delivery.
5. Recognize the relevance of economics in studying health care issues.
6. Understand the aspects of medical care that contribute to its uniqueness as a commodity.

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**Opening Video**

**A Health Care System in Crisis**

**The Rainmaker (1997)**
Distributed by Paramount Pictures
Produced by Michael Douglas, Steven Reuther, and Fred Fuchs
Directed by Francis Ford Coppola
Written by John Grisham
Screenplay by Francis Ford Coppola

Cast:
Matt Damon as Rudy Baylor, young attorney handling his first case
Jon Voight as Leo F. Drummond, lead attorney for Great Benefit Life
Michael Girardin as Everett Lufkin, vice president of claims for Great Benefit Life
Johnny Whitworth as Donny Ray Black, young man dying from leukemia

Synopsis:
A court room drama where recent law graduate Rudy Baylor teams up with Deck Shifflet, an "ambulance-chasing" paralegal, who has failed the bar exam six times. From the beginning, Rudy has misgivings about the questionable ethics of the type of client solicitation practiced by Shifflet. When Rudy asks, "What's wrong with ethics?" Deck answers, "Oh, nothing, I guess. I mean I believe a lawyer should fight for his client, refrain from stealing money, and try not to lie, you know, the basics." With these rules of professional conduct guiding him, Rudy accepts his first case, a lawsuit against Great Benefit Insurance Company. Great Benefit has been selling its health policies door-to-door in low-income neighborhoods and denying most of the presented claims, betting on the fact that none of their clients will file suit. For seven years, Dot Black has paid the premiums, but when she files a claim for Donny Ray's recently diagnosed leukemia, Great Benefit denies the request for a bone marrow transplant. Great Benefit Life refused to pay for the procedure on four grounds: that the leukemia was a pre-existing condition, that due to his age (21) he was no longer a dependent and therefore not covered by the policy, that his health status has been misrepresented on the original insurance application four years before diagnosis, and that the procedure was "experimental."

Film Clip:

Scene 16, “Do you remember when you first sold out?” starting at 59:53 to 1:05:18 (5 minutes, 22 seconds)
Rudy travels to Cleveland to depose several key insurance company employees. Of the four employees he wants to depose; only one is available. Jackie Lemancyzk (Claims Handler) has resigned and Russell Crockett was downsized. In a dramatic confrontation, Baylor asks Drummond if he remembers “when he first sold out,” implying that Drummond has tampered with witnesses. The scene ends in Danny Ray’s bedroom with Baylor indictment against the U.S. healthcare system. “This is how the uninsured die. In a society filled with brilliant doctors and state-of-the-art technology…it is obscene to let this boy die.” Do you think this is a fair indictment of the U.S. healthcare system? What are the circumstances, if any, that would justify denial of a “valid” insurance claim? Are any of the four grounds used by Great Benefit Life valid?

Discussion:
In Donny Ray Black’s case we find the behavior of those associated with Great Benefit Life morally repugnant, as did the jury be rewarding the plaintiff $50 million in economic and punitive damages. In the case of Great Benefit Life, the verdict resulted in the insolvency of the company, its eventual bankruptcy, and an opportunity for us to explore the impact of such awards on other stakeholders in such cases.

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**Teaching Suggestions**

- Get a copy of the survey from Victor R. Fuchs, “Economics, Values, and Health Care Reform,” *American Economic Review* 86(1), March 1996, 1-24. Ask your students to answer the survey and tabulate the answers. Compare their answers with those of the economists who answered the survey originally. This is a good way to check the pulse of your class. The ensuing discussion can be a good way to introduce many of the topics covered in the course.
- National media attention has focused on the problems of the medical care sector periodically in recent years. The “crisis” in medical care is well documented. Discuss the various meanings of the term “crisis.” Students will have some interesting perspectives on this issue.
- It is a good idea to discuss the use of the Internet as a research tool. It is important that students be able to discern good sources from bad. The Internet is full of both. That is the purpose of the Internet exercise in my class. Students join a ListServ or eavesdrop on a newsgroup to get some idea how to judge the quality of the information available in cyberspace. There are literally thousands of forums to join. Many of my students begin their

electronic discussions with DejaNews, a leading site for Internet discussion groups. You can find it at http://w2.dejanews.com/.

- If you like to emphasize the incentives created by our third-party payment mechanism, make sure you at least mention "Spending Somebody Else's Money." When people spend their own money they spend it differently than when they spend someone else's money. Students will remember this example the entire semester and beyond.
- Take the time to go over the 10 key economic concepts. A brief introduction helps develop continuity.

**Suggested Approaches to End-of-Chapter Questions**

1. A crisis is defined in the dictionary as a critical time or occasion, or even an emergency. Students will approach this question differently. At this early juncture many will be influenced by their own experience with the health care system. Those arguing that the U.S. has a health care crisis will likely cite the following: 1) rising costs and spending, 2) the changing demographics of the population, 3) the number of uninsured, and 4) health status comparisons with other developed countries. Those arguing against a health care crisis will likely argue that 1) even the uninsured have access to care through public hospitals and emergency rooms, 2) medical technology is more widely available in the U.S. than anywhere else in the world, and 3) confounding factors make international comparisons suspect.
2. Medical care spending is absorbing an increasing share of national output, at least up until the last two or three years. Whether this recent slowing in the percentage share of GDP will continue is debatable (and a good structured discussion topic). The reasons for high and rising spending include 1) the increased use of medical technology, 2) rising medical input prices, 3) an aging population, 4) the cost of medical malpractice litigation, and most importantly, 5) the third-party payment mechanism.
3. Cost containment is an important policy goal since the health of the population is not the only important national goal. But cost containment may not be the most important national health care goal. The pursuit of cost-effective delivery makes more sense from an economic

perspective.  Other health care goals are improving access for the uninsured and quality for everyone.  Note, however, these latter goals tend to drive up costs.

4. Scarcity in economics is the recognition that all resources are limited relative to wants that are unlimited in the aggregate.  Scarcity forces us to make choices.

**Additional Questions for Discussion and Evaluation**

1. Outside of government itself, the largest industry in the United States is the health care industry.  Over the past several decades, costs in the health care industry have been increasing at a much faster rate than the rate of inflation in general.  Why?  Cite relevant empirical evidence to support your answer.
2. How much do Americans spend on medical care?  Why do they spend so much?  How does US spending compare with that of other developed countries?  Are we getting our money's worth?  Be somewhat specific.
3. How big is the role of the federal government in health care delivery and financing in the United States?  How big should it be?

4. Give consumers more information, let them choose the best provider and the resulting competition will help to squeeze out costly waste and ineffective care. After all, markets work pretty well for other goods and services. The notion has some appeal, and a dose of market medicine would help some of what ails the nation's health-care system. But as a cure, the approach rests on the belief that health care is – in most respects – like any other product.
   a. How is medical care different from other non-medical goods and services? How is it the same?
   b. What are the essential characteristics that are required for a market to exist?
   c. How can the medical marketplace be made more efficient?
5. Discuss the following: the demand for medical care is irregular, resulting primarily from the onset of an illness; there are widespread information problems; uncertainty is exceptionally problematic; there is a reliance on not-for-profit providers; and we pay for it with other people's money.
6. The 1980s was characterized by a dramatic change in the way Americans paid for medical care—retrospective to prospective. Define the two concepts and explain how the way we pay affects the care we receive? [The two concepts are defined in the glossary. Retrospective payment establishes incentives to over-treat. Prospective payment creates incentives to withhold care. ]
7. Discuss the opportunity cost of health care in terms of education. Why do you suppose taxpayers are willing to invest in an inefficient health care system with excess hospital capacity, but unwilling to invest in an under-funded education system?
8. "Nobody spends other people's money the way they spend their own money." Comment on this statement.
9. The president's health policy adviser Zeke Emanuel said the following about the US healthcare system in a November, 23, 2008, *Washington Post* article, "We have the most expensive system in the world per capita, but we lag behind many developed nations on

virtually every health statistic." Comment on the two parts of his statement. Provide evidence to support your answer.

## Chapter 2: Using Economics to Study Health Care Issues

This chapter introduces the basic economics model of supply and demand and examines its use in the study of health care issues. A discussion of the principles of optimizing behavior sets the stage for the development of the model of demand and supply. A discussion of the theory of the firm follows, contrasting perfect and imperfect competition. Supply- and demand-side imperfections are also discussed.

**New Content in the 5th edition**

This chapter uses "Is 'Safe Sex' Really Safe?" to show one way to use economics to analyze a health care issue. The rest of the chapter is largely unchanged. All tables have been updated.

**Chapter Outline**

a. The relevance of economics in health care
   1. Critical assumptions in economics
   2. The scientific method
   3. Model building
   4. Problem solving

b. Economic optimization

c. Supply and demand
   1. The law of demand
   2. Price elasticity of demand
   3. The law of supply
   4. Equilibrium

d. The competitive model
   1. Theory of firm behavior
   2. Price Ceilings and Price Floors
   3. The Impact of an Excise Tax
   4. Welfare implications
   5. Imperfect competition

e. Summary and conclusions

Profile: Kenneth J. Arrow

| Issues in Medical Care Delivery | Back-of-the-Envelope |
| --- | --- |
| • Is “Safe” Sex Really Safe?<br>• Rhetoric in Economics<br>• Positive and Normative Analysis<br>• How to Survive Supply and Demand | • Using Game Theory to Study Economic Behavior |

**Chapter Objectives**

1. Explain the use of economics as a framework for studying health care issues.
2. Understand the limits of economics in explaining behavior in medical care markets.
3. Recognize the importance of incentives in explaining individual behavior.
4. Examine the basic economic model of demand and supply, including the concepts of equilibrium and elasticity.
5. Understand and apply the model of firm behavior in medical markets.

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**Opening Video**

**Adam Smith Needs Revision**

**A Beautiful Mind (2001)**
Distributed by Universal Pictures
Produced by Karen Kehela-Sherwood, Todd Hallowell, and Brian Grazer
Directed by Ron Howard
Based on a biography by Sylvia Nasar
Screenplay by Akiva Goldsman

Cast:
Russell Crowe as John Nash, schizophrenic mathematician
Adam Goldberg as Sol, graduate student and classmate of Nash
Josh Lucas as Hansen, graduate student and classmate of Nash
Anthony Rapp as Bender, graduate student and classmate of Nash
Jason Gray-Stanford as Ainsley, graduate student and classmate of Nash

Synopsis:
John Forbes Nash, Jr., a socially challenged graduate student at Princeton, is able to solve problems that challenge the greatest minds of the era. Eventually, Nash published “The Bargaining Problem,” became interested in game theory, and in 1994 won the Nobel Prize in Economics. Later in life, Nash developed paranoid schizophrenia. Much of the story is about his battle with the mental disorder.

Scene:
Scene 5, ”Governing Dynamics” starting at 19:00 (2 minutes, 45 seconds, adult content)
While Nash and his fellow graduate students relax in a local bar, five co-eds (4 brunettes and a blonde) enter the bar. Nash and his friends discuss the appearance of the five women standing in front of them and plot their strategy. Hansen recalls the lessons of Adam Smith on competition: individual self interest serves the common good. Ainsley replies that it's every man for himself. Nash has an epiphany: Smith needs revision. His theory is incomplete. The best strategy is one of cooperation. If they all go for the blonde, they block each other and offend the other women. They all leave unhappy. If they all go for a different brunette, they will all leave with a date…a date being the object of the game. What is a prisoner's dilemma? Is this scene a good example of a prisoner's dilemma?

Although this is not a prisoner's dilemma *per se*, Nash observed that sometimes the cooperative outcome is superior to competitive outcome, where everyone plays their dominant strategy in a non-cooperative game. Each player in the game has the incentive to defect by going for the blonde (which makes this a non-cooperative game), but if all cooperate and go for one of the brunettes, each player *should* leave with a date. In a prisoner's dilemma, two players will reach a "Nash Equilibrium" where both decide to defect, where they could have done better by cooperating. The "best response" strategy leads both players to defect and results in the worst outcome.

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**Teaching Suggestions**

- Consider breaking out your class into groups of 3-5 students. Each group will discuss for 5-10 minutes the following: What do I hope to get out of this class. Students with different backgrounds will have different expectations. It is good to know what students want before you get too far into the course. I use this breakout technique throughout the semester, calling it 3x3 or 5x5—meaning groups of 3 for 3 minutes or groups of 5 for 5 minutes.
- Students, especially those without an economics background, seem to enjoy a class discussion of "How to Survive Supply and Demand." Most have good intuition and just need to be reassured that it is useful in an economics class.
- A brief graphical discussion of optimization is a good way to introduce the concept of the flat-of-the-curve in medical care delivery. This is a good way for students to remember both concepts.
- Depending on your class make-up, you may spend a lot or a little time on this chapter. Students without much economics should focus on supply and demand. If you have mostly

economics majors, focus on the impact of price floors, price ceilings, and excise taxes. The latter is especially important since most health care reform legislation has as its major funding vehicle some form of excise tax on tobacco.

- If you have more advanced students, you may want to spend some time discussing the statistical appendix at the end of this chapter. While most of my advanced students have had a class in econometrics, even they seem to appreciate the review.

**Suggested Approaches to End-of-Chapter Questions**

1. a) Classifying tobacco as an addictive substance will cause the demand curve to shift to the left; price and quantity will go down.

   b) Raising the excise tax on tobacco products is shown by a leftward shift in the supply curve; prices will rise and quantity will fall.

   c) Destruction of the tobacco harvest is depicted by a leftward shift in the supply curve; prices will rise and quantity will fall.

   d) Settlement of the lawsuit will increase the cost of making tobacco products available to consumers. This is depicted by a leftward shift in the supply curve; prices will rise and quantity will fall.

   e) The information raises the cost of drinking coffee. When the cost of a substitute increases the demand for cigarettes rises. This is depicted by a rightward shift in the demand curve; price and quantity rise.

2. Economics provides guidelines for resource allocation decisions. By considering the implications of scarcity of resources, economics brings a measure of objectivity into the discussion. We are limited by the equity-efficiency trade-off, especially in health care delivery where issues of life and death, pain and suffering are frequently addressed.

3. False. Immutable may be too strong for the statement. We see policies, decisions, and actions that affect supply and demand curves all the time. Excise taxes affect supply curves. Subsidies and advertising affect demand curves.

4. a. Normative (but maybe based on positive research).

b. Normative.

c. Positive.

d. Positive.

e. Normative (but maybe based on positive research).

5. a. The coefficient 0.11 indicates that a $1,000 increase in per capita national income will result in a $110 increase in health care spending.

   b. Complete the table.

| Income | Health Care Spending |
|---|---|
| $10,000 | $ 561.7 |
| 20,000 | 1,661.7 |
| 30,000 | 2,761.7 |
| 40,000 | 3,861.7 |
| 50,000 | 4,961.7 |

**Additional Questions for Discussion and Evaluation**

1. What are the likely consequences of the following events in the U.S market for cosmetic surgery? Does the supply curve or the demand curve shift? In which direction? State whether the equilibrium price and quantity increase, decrease, or stay the same. Show the changes using a standard diagram with an upward-sloping supply curve and a downward-sloping demand curve.

   a. Health insurance coverage is expanded to cover all elective procedures, such as tummy tucks, nose jobs, and liposuction.

   b. The FDA (Food and Drug Administration) takes all silicone-based implants off the market fearing a connection with certain connective-tissue diseases.

   c. Personal finance companies starts a nationwide lending program for cosmetic procedures not covered by health insurance.

d. Medical malpractice insurance premiums increase for plastic surgeons.

e. Medical schools announce that residents in plastic surgery can be licensed after only five years instead of the current seven years.

3. As an economist, how do you define the optimal rate of output? How well are the criteria for optimization met in medical care?

4. How does the difficulty in acquiring and understanding medical information affect the price and quality of medical care? How will the widespread access to the Internet affect medical care delivery in the future?

5. Some critics of using economics in medical decision making confuse resource allocation with resource rationing. What is the difference between the two concepts?

6. The following table depicts the weekly demand and supply of office visits at a local children's clinic staffed by four physicians.

| **Price per visit** | **Quantity demanded** | **Quantity supplied** |
|---|---|---|
| $20 | 300 | 150 |
| 25 | 275 | 175 |
| 30 | 250 | 200 |
| 35 | 225 | 225 |
| 40 | 200 | 250 |
| 45 | 175 | 275 |
| 50 | 150 | 300 |

a. What are the equilibrium price and quantity of office visits per week?
b. If one of the physicians moves to another city, reducing quantity supplied by 25 percent, what are the price and quantity at the new equilibrium?
c. Assuming the original four physicians, if a price ceiling is set at $25 per office visit, how many office visits will be demanded per week? How many will be supplied? Describe the outcome of such a policy.

7. Using supply and demand analysis, show graphically and explain verbally some of the factors that may have led to rising health care expenditures in the United States between 1960 and 1999.

8.A number of different factors are responsible for the health care price increases. Draw a supply and demand diagram of the market for health care, and mark the initial equilibrium price and quantity. Then explain and show the effects of:

a. new medical treatments

b. minimum hospital stays

c. resistance to mandatory referrals before seeing a specialist

d. higher payments to doctors

9.Draw a supply and demand diagram of the market for health care, and mark the initial equilibrium price and quantity. Then explain and show the effects of:

a. higher deductions from employees' pay for health care

b. charging patients more for more costly treatments

c. preventive health care

10. Most developed countries have some form of a national health plan. A number of possible plans have been proposed in the U.S. recently with price tags of upwards of $200 billion per year (depending on the extent of coverage). An important question in choosing among such plans is how their adoption will affect demand (moral hazard). The empirical question is how large the increase in demand might be.

Estimates of the price elasticity of demand for medical services vary with –0.2 to –0.40 being a representative range. A figure in this range might be a starting point in predicting the effect of health insurance on medical demand. Of course, the above figures apply to all medical services and as we know some price elasticities are likely to differ (such as demand for hospital stays v. office visits to physicians). On the other hand, estimates of price elasticities for more discretionary services (dental care, ophthalmologic care, and psychiatric counseling) tend to be higher.

a. Interpret a price elasticity coefficient of –0.2.

b. Does the relatively high price elasticity of demand for some medical services imply that these services are not really "necessary?" Should health care planners use such elasticity estimates as a guide for the kinds of services people really need, or are there important drawbacks to basing such a judgment on people's responses to prices? How would you judge what medical services are really necessary for a person's well being?

c. Isn't the use of demand concepts in the health care field inappropriate since physicians, not by the patient, determine a great deal of medical demand? Is there any reason for physicians to take the price of a service into account when deciding what to prescribe?