# Chapter 2: Using Economics to Study Health Care Issues

*Multiple Choice*

1. An inferior good
   a. has a negative income elasticity.
   b. is one where the demand curve shifts to the left when income goes up.
   c. exists only in theory.
   d. is a low-quality good.
   e. **Both a and b are true.**

2. Which of the following will not change the demand for office visits to the physician?
   a. unusually cold and damp weather during the winter.
   b. **a change in the price of an office visit.**
   c. layoffs at the local plant causing a decrease in the number of people with health insurance in the community.
   d. television advertising by drug manufacturers to promote a new over-the-counter influenza treatment.
   e. they all change the demand for office visits.

3. Which of the following will <u>not</u> cause a shift in the medical care supply curve?
   a. a change in the cost of medical school tuition.
   b. **a change in the percentage of the population with health insurance.**
   c. an change in the amount of student aid available to promising undergraduate students studying biology.
   d. A change in the number of high-profile medical malpractice lawsuits brought against physicians increasing the premiums on malpractice insurance.
   e. A wave of union activity that increases the average salaries of nurses nationwide.

4. Supply curves are positively-sloped because of
   a. inefficient allocation of resources.
   b. **the law of diminishing returns.**
   c. economies of scale.
   d. self-interested suppliers seeking economic profit.
   e. all of the above.

5. A shortage of hospital beds will likely lead to
   a. an increase in the supply of hospital beds.
   b. a decrease in the demand for hospital beds.
   c. **an increase in the price of a hospital stay.**
   d. a decrease in the price of a hospital stay.
   e. none of the above.

6. Suppose angioplasty and coronary artery bypass graft (CABG) surgery are substitute treatment alternatives for coronary artery disease. What should happen to the equilibrium price and quantity of angioplasty procedures if a new CABG technique is introduced that is less invasive (requiring a 4 inch incision under the breast bone rather than cracking open the patient's rib cage) and requires one-third the recovery period of regular CABG surgery.
   a. Both price and quantity will increase.
   b. **Both price and quantity will decrease.**
   c. Price will increase and quantity will decrease.
   d. Price will decrease and quantity will increase.
   e. The introduction of a new CABG procedure should have no effect on the price or quantity of angioplasty procedures.

7. Suppose the market for hospital outpatient treatment is in equilibrium when a price ceiling is set below the equilibrium price. What do you expect to happen?
   a. A surplus will develop.
   b. **A shortage will develop**.
   c. Quantity demanded will decrease.
   d. The number of outpatient visits will rise.
   e. The demand for outpatient procedures will fall.

8. A physician's office expenses increase 10 percent, so she decides to raise the price of office visits. Assuming the demand curve for office visits does not shift, what will happen to the total number of office visits and practice revenues?
   a. Office visits and total revenue stay the same if demand is elastic.
   b. Office visits and total revenue rise if demand is inelastic.
   c. Office visits and total revenue fall if demand is inelastic.
   d. **Office visits will fall and total revenue will rise if demand is inelastic.**
   e. Office visits will rise and total revenue will fall if demand is elastic.

For questions 9-12, use the following scenario. You are a consultant and have been employed by Urban General, a large inner-city hospital, to estimate the demand for its services. Your research indicates that the income elasticity of demand for the target market is +0.50; the price elasticity of demand is -0.15; and the cross-price elasticity of demand with respect to the price of services at St. Elsewhere, a near-by hospital, is +0.35. Answer the following questions.

9. The price of services at St. Elsewhere falls by 10 percent. What happens to the quantity of services demanded at Urban General?
   a. Quantity demanded rises by 35.0 percent.
   b. **Quantity demanded falls by 3.5 percent.**
   c. Quantity demanded falls by 1.5 percent.
   d. Quantity demanded rises by 5.0 percent.
   e. Quantity demanded stays the same.

10. The price of services at Urban General falls by 10 percent.

a.  Quantity demanded at Urban General increases by 15.0 percent.
b.  **Quantity demanded at Urban General increases by 1.5 percent.**
c.  Quantity demanded at St. Elsewhere rises by 3.5 percent.
d.  Quantity demanded at St. Elsewhere falls by 5.0 percent.
e.  Quantity demanded at Urban General rises by 5.0 percent.

11. Area income increases by 20 percent.
a.  Quantity demanded at Urban General does not change.
b.  Quantity demanded at Urban General falls by 10.0 percent.
c.  **Quantity demanded at Urban General rises by 10.0 percent.**
d.  Quantity demanded at St. Elsewhere rises by 7.0 percent.
e.  There is not enough information to tell what happens to quantity demanded at either hospital.

12. What is the cumulative effect of a simultaneous increase in area income of 5 percent and a 10 percent increase in prices at Urban General?
a.  Quantity demanded at Urban General falls by 4 percent.
b.  Quantity demanded at Urban General rises by 4 percent.
c.  **Quantity demanded at Urban General rises by 1 percent.**
d.  Quantity demanded at Urban General falls by 1 percent.
e.  Quantity demanded at Urban General does not change.

13. Suppose the demand curve for medical care services is perfectly inelastic.  What will happen to the equilibrium price and quantity if supply increases?
a.  Price and quantity will rise.
b.  Price will stay the same and quantity will rise.
c.  Price and quantity will fall.
d.  Price will fall and quantity will increase.
e.  **Price will fall and quantity will stay the same.**

14. Within the framework of economics, optimization means providing a good or service until
a.  total benefits are maximized.
b.  total benefits and total costs are equal.
c.  marginal benefits exceed marginal costs by the greatest amount possible.
d.  **marginal benefits and marginal costs are equal.**
e.  as long as total benefits are greater than total costs, any amount may be optimal under the right circumstances.

15. The dead-weight loss from an excise tax
a.  is greater if demand is perfectly inelastic.
b.  is caused by a shift in consumer preferences when the tax is raised.
c.  **is the lost surplus that results from higher prices and lower output resulting from the tax.**
d.  is of little concern to policy makers since all excise taxes are "sin" taxes.

e. is the difference between consumer surplus and producer surplus.

16. Suppose the U.S. Drug Enforcement Agency steps up its efforts to control the illegal importation of cocaine into the United States. What is the likely effect on the market for illegal drugs in the United States?
   a. The price of cocaine and the quantity imported will both increase.
   b. **The price of cocaine is likely increase and the quantity entering the country decrease.**
   c. The price of marijuana, a cocaine substitute grown domestically, will fall.
   d. The policy will have the least impact on those individuals whose demand for drugs is elastic.
   e. Demand for drugs is highly inelastic and these policies have little or no effect on consumption.

17. The following graph depicts the market for CT scanners in the United States.
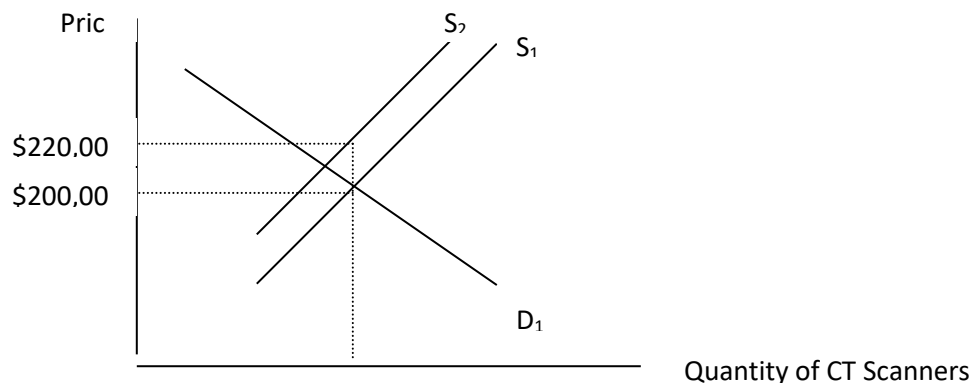


Assume an initial equilibrium at $D_1$ and $S_1$ with price of $200,000 per machine. If the government places a $20,000 excise tax on each new scanner sold, the new equilibrium price will be
   a. at least $220,000.
   b. exactly $220,000.
   c. **less than $220,000.**
   d. there's not enough information to determine what the new price will be.

18. Suppose robotic technology improves the results of abdominal surgery—less time to perform the surgery, faster recovery times, and fewer mistakes. What is the impact on the market for abdominal surgery using this new technology?
   a. **Demand for robot-assisted surgery will increase.**
   b. Hospitals will be slow to adopt the new technology fearing that it may result in lower prices.
   c. The demand for surgical assistants will increase.

d. All of the above.

**Appendix 2A: Graphing Data**

This appendix introduces the technique of graphing as a tool used by economists to clarify difficult ideas. The basics of graphing are addressed, including dependent and independent variables, slope and intercept, functional relationships, and how to account for confounding factors. The differences between time-series and cross-section graphs are also presented.

**Appendix Outline**

a. Some basics of graphing
b. Functional relationships
    1. Time-series graphs
    2. Cross-section graphs

**Appendix Objectives**

1. Understand and use the basic principles of graphing economic data.

2. Specify functional relationships between two or more variables.

3. Recognize the importance of controlling for confounding factors when graphing the relationship between two variables. ]

4. Specify the difference between cross-section and time-series data.

**Appendix 2B: Statistical Tools**

This appendix provides a primer on the use of statistics in economic analysis. Concepts addressed include the descriptive statistics mean, median, mode, variance, and standard deviation. Techniques to study statistical relationships between two or more variables, correlation and regression, are also discussed. Examples of the least-squares methods are provided for clarification. The use of measures of significance for hypothesis testing is also addressed.

**Appendix Outline**

a. Descriptive statistics

       1. Measures of central tendency
       2. Measures of dispersion
b. Correlation
c. Regression
       1. Least-squares methodology
       2. Measures of significance
d. Summary and conclusions

**Appendix Objectives**

1. Recognize and explain the use of descriptive statistics in studying health care issues.

2. Define statistical measures such as mean, median, mode, standard deviation, and variance.

3. Use and understand the tools of correlation and regression.