

# WHY HEALTH ECONOMICS?

## Learning Objectives

After reading this chapter, students will be able to

- describe the value of economics for managers,
- identify major challenges for healthcare managers,
- find current information about health outcomes, and
- distinguish between positive and normative economics.

## Key Concepts

- Economics helps managers focus on key issues.
- Economics helps managers understand goal-oriented decision making.
- Economics helps managers understand strategic decision making.
- Economics gives managers a framework for understanding costs.
- Economics gives managers a framework for understanding market demand.
- Economics gives managers a framework for assessing profitability.
- Economics helps managers understand risk and uncertainty.
- Economics helps managers understand insurance.
- Economics helps managers understand information asymmetries.
- Economics helps managers deal with rapid change.

## 1.1 Why Health Economics?

Why should working healthcare managers study economics? This simple question is really two questions. Why is economics valuable for managers? What special challenges do healthcare managers face? These questions motivate this book.

Why is economics valuable for managers? There are six reasons. We will briefly touch on each of them to highlight the themes we will develop in later chapters.

1. Economics helps managers focus on key issues. Economics helps managers wade through the deluge of information they confront and identify the data they need.
2. Economics outlines strategies for realizing goals given the available resources. A primary task of economics is to explore carefully the implications of rational decision making.
3. Economics gives managers ground rules for strategic decision making. When rivals are not only competing against them but watching what they do, managers must be prepared to think strategically.
4. Economics gives managers a framework for making sense of **costs**. Managers need to understand costs because good decisions are unlikely to be made without this understanding.
5. Economics gives managers a framework for thinking about value. The benefits of the goods and services that successful organizations provide to customers exceed the costs of producing those goods and services. Good management decisions require an understanding of how customers perceive value.
6. Most importantly, economics sensitizes managers to fundamental ideas that affect the operations of every organization. Effective management begins with the recognition that consumers are sensitive to price differences, that organizations compete to advance the interests of their stakeholders, and that success comes from providing value to customers.

**cost**

The value of a resource in its next best use.

## 1.2 Economics as a Map for Decision Making

Economics provides a map for decision making. Maps do two things. They highlight key features and suppress unimportant features. To drive from Des Moines, Iowa, to Dallas, Texas, you need to know how the major highways connect. You do not want to know the name and location of each street in each town you pass through. Of course, what is important and what is unimportant depend on the task at hand. If you want to drive from West 116th Street and Ridgeview Road in Olathe, Kansas, to the Truman homestead in Independence, Missouri, a map that describes only the interstate highway system will be of limited value to you. You need to know which map is the right tool for your situation.

Using a map takes knowledge and skill. You need to know what information you need, or you may choose the wrong map and be swamped in extraneous data or lost without key facts. Having the right map is no guarantee that you can use it, however. You need to practice to be able to use a map quickly and effectively.

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Like a map, economics highlights some issues and suppresses others. For example, it tells managers to focus on **marginal** or **incremental costs**, which makes understanding and managing costs much simpler, but economics has little to say about the belief systems that motivate consumer behavior. If you are seeking to make therapeutic regimens easier to adhere to by making them more consistent with consumers' belief systems, economics is not a helpful map. If, on the other hand, you want to decide whether setting up an urgent care clinic is financially feasible, economics helps you focus on how your project will change revenues and costs.

**marginal or incremental cost**  
The cost of producing an additional unit of output. (The words *marginal* and *incremental* refer to small changes.)

Economics also gives managers a framework for understanding rational decision making. **Rational decision making** involves making choices that further one's goals given the resources available. Whether those goals include maximizing profits, securing the health of the indigent, or other objectives, the framework is much the same. It entails looking at benefits and costs to realize the largest net benefit. (We will explore this question further in section 1.5.)

**rational decision making**  
Choosing the course of action that offers the best outcomes, given the constraints you face.

Managers must understand costs and be able to explain costs to others. Confusion about costs is common, so confusion in decision making is also common. Confusion about benefits is even more widespread than confusion about costs. As a result, management decisions in healthcare often leave much to be desired.

Economists typically speak about economics at a theoretical level, using "perfectly competitive markets" (which are, for the most part, mythical social structures) as a model; as a result, application of economics can be difficult for managers competing in real-world markets. Yet, economics offers concrete guidance about pricing, contracting, and other quandaries that managers face. Economics also offers a framework for evaluating the strategic choices managers must make. Many healthcare organizations have rivals, so good decisions must take into account what the competition is doing. Will being the first to enter a market give your organization an advantage, or will it give your rivals a low-cost way of seeing what works and what does not? Will buying primary care practices bring you increased market share or buyer's remorse? Knowing economics will not make these choices easy, but it can give managers a plan for sorting through the issues.

### 1.3 Special Challenges for Healthcare Managers

What special challenges do healthcare managers face? Healthcare managers face five issues more than other managers do:

1. The central roles of risk and uncertainty
2. The complexities created by insurance
3. The perils produced by information asymmetries

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4. The problems posed by not-for-profit organizations
5. The rapid and confusing course of technical and institutional change

Let us look at each of these challenges in more depth.

### **1.3.1 Risk and Uncertainty**

Risk and uncertainty are defining features of healthcare markets and healthcare organizations. Both the incidence of illness and the effectiveness of medical care should be described in terms of probabilities. For example, the right therapy, provided the right way, usually carries some risk of failure. A proportion of patients will experience harmful side effects, and a proportion of patients will not benefit. As a result, management of costs and quality presents difficult challenges. Has a provider produced bad outcomes because he was unlucky and had to treat an extremely sick panel of patients, or because he encountered a panel of patients for whom standard therapies were ineffective? Did his colleagues let him down? Or was he incompetent, sloppy, or lazy? The reason is not always evident.

### **1.3.2 Insurance**

Because risk and uncertainty are inherent in healthcare, most consumers have health insurance, and healthcare organizations have to contend with the management problems insurance presents. First, insurance creates confusion about who the customer is. Customers use the products, but insurance plans often pay most of the bill. Moreover, most people with private medical insurance receive coverage through their employer (in large part because the tax system makes this arrangement advantageous). Although economists generally agree that employees ultimately pay for insurance via wage reductions, most employees do not know the costs of their insurance alternatives (and unless they are changing jobs, they have limited interest in finding out). As a result of this situation, employees remain unaware of the true costs of care and are not eager to balance cost and value. If insurance is footing the bill, most patients choose the best, most expensive treatment—a choice they might not make if they were paying the full cost.

In addition, insurance makes even simple transactions complex. Most transactions involve at least three parties (the patient, the insurer, and the provider), and many involve more. To add to the confusion, most providers deal with a wide array of insurance plans and face blizzards of disparate claim forms and payment systems. Increasing numbers of insurance plans have negotiated individual payment systems and rates, so many healthcare providers look wistfully at industries that simply bill customers to obtain revenues. The complexity of insurance transactions also increases opportunity for error and fraud. In fact, both are fairly common.

Despite this bewildering array of insurance plans, many providers still rely on a few plans for their revenue (a circumstance most managers seek to avoid). For example, most hospitals receive at least a third of their revenue from Medicare. As a result, changes in Medicare regulations or payment methods can profoundly alter a healthcare organization's prospects. Overnight, changes to reimbursement terms may transform a market that is profitable for everyone to one in which only the strongest, best-led, best-positioned organizations can survive.

### 1.3.3 Information Asymmetries

Information asymmetries are common in healthcare markets and create a number of problems. An **information asymmetry** occurs when one party in a transaction has less information than the other party. In this situation, the party with more information has an opportunity to take advantage of the party with less information. Recognizing a disadvantage, the party with less information may become skeptical of the other party's motivation and decline a recommendation that would have been beneficial. For example, physicians and other healthcare providers usually understand patients' medical options better than patients do. Unaware of their choices, patients may accept recommendations for therapies that are not cost-effective or, recognizing their vulnerability to physicians' self-serving advice, may resist recommendations made in their best interest.

#### **information asymmetry**

When one party in a transaction has less information than the other party.

From a manager's perspective, asymmetric information means that providers have a great deal of autonomy in recommending therapies. Because providers' recommendations largely define the operations of insurance plans, hospitals, and group practices, managers need to ensure that providers do not have incentives to use their superior information to their advantage. Conversely, in certain situations, patients have the upper hand and are likely to forecast their healthcare use more accurately than insurers. Patients know whether they want to start a family, whether they seek medical attention whenever they feel ill, or whether they have symptoms that indicate a potential condition. As a result, health plans are vulnerable to **adverse selection**, meaning that high-risk consumers are more likely to seek insurance whereas healthier individuals are more likely to go without.

#### **adverse selection**

High-risk consumers' willingness to pay more for insurance than low-risk consumers are willing to pay. (Organizations that have difficulty distinguishing high-risk from low-risk consumers are unlikely to be profitable.)

### 1.3.4 Not-for-Profit Organizations

Most not-for-profit organizations have worthy goals that their managers take seriously, but these organizations can create problems for healthcare managers as well. For example, not-for-profit organizations usually have multiple stakeholders. Multiple stakeholders mean multiple goals, so organizations become much harder to manage, and managers' performance becomes harder to assess. The potential for managers to put their own needs before

their stakeholders' needs exists in all organizations but is more difficult to detect in not-for-profit organizations because they do not have a simple bottom line. In addition, not-for-profit organizations may be harder to run well. They operate amid a web of regulations designed to prevent them from being used as tax avoidance schemes. These regulations make setting up incentive-based compensation systems for managers, employees, and contractors (the most important of whom are physicians) more difficult. Further, when a project is not successful, not-for-profit organizations have greater difficulty putting the resources invested in the failed idea to other uses. For example, the trustees of a not-for-profit organization may have to get approval from a court to sell or repurpose its assets. Because of these special circumstances, managers of not-for-profit organizations can always claim that substandard performance reflects their more complex environment.

### ***1.3.5 Technological and Institutional Change***

This fifth challenge makes the others pale in comparison. The healthcare system is in a state of flux. Virtually every part of the healthcare sector is reinventing itself, and no one seems to know where the healthcare system is headed. Leadership is difficult to provide if you don't know where you are going. Because change presents a pervasive test for healthcare managers, we will examine it in greater detail.

## **1.4 Turmoil in the Healthcare System**

Why is the healthcare system of the United States in such turmoil? One explanation is common to the entire developed world: rapid technical change. The pace of medical research and development is breathtaking, and the public's desire for better therapies is manifest. These demands challenge healthcare managers to regularly lead their organizations into unmapped territory. To make matters worse, changes in technology or changes in insurance can quickly affect healthcare markets. In healthcare, as in every other sector of the economy, new technologies can create winners and losers. For example, between 2000 and 2007 Medicare payments to ambulatory surgery centers more than doubled. Medicare changed its policy, and growth slowed down (Medicare Payment Advisory Commission 2018). What appears profitable today may not be profitable tomorrow if technology, competition, rates, or regulations change significantly.

The Affordable Care Act (ACA) has resulted in a wave of innovations by providers, insurers, employers, and governments. (See chapter 6 for more detail.) Which of these innovations will succeed is not clear. In addition, some healthcare organizations will thrive in the environment of the ACA, and some

will fail. The passage of the ACA appears to have been transformative, but its repeal might not undo the changes it led to.

### 1.4.1 The Pressure to Reduce Costs

The economics of high healthcare costs is far simpler than the politics of high healthcare costs. To reduce costs, managers must reallocate resources from low-productivity uses to high-productivity uses, increase productivity wherever feasible, and reduce prices paid to suppliers and sectors that have excess supply. They also must recognize that cost cutting is politically difficult. Reallocating resources and increasing productivity will cost some people their jobs. Reducing prices will lower some people's incomes. These steps are difficult for any government to take, and many of those who will be affected (physicians, nurses, and hospital employees) are politically well organized.

## CASE 1.1

### Why Is the Pressure to Reduce Healthcare Costs So Strong?

The United States spends far more than other wealthy industrial countries but has poorer outcomes. Spending per person is more than double the spending per person in Canada, France, and the United Kingdom (see exhibit 1.1). Differences this large should be reflected in the outcomes of care.

Country	2011	2016
Canada	\$4,248	\$4,644
France	\$4,031	\$4,600
Germany	\$4,588	\$5,501
Switzerland	\$6,048	\$7,919
United Kingdom	\$3,084	\$4,193
United States	\$8,145	\$9,892

Source: Data from Organisation for Economic Co-operation and Development (OECD 2017).

Note: Spending has been converted into US dollars.

**EXHIBIT 1.1**  
Healthcare  
Spending per  
Person

(continued)

### CASE 1.1 (continued)

As you can see in exhibit 1.2, of the six countries listed, the United States has the shortest life expectancy at birth. In part, this difference is because the United States invests relatively little in improving the social determinants of health and reducing inequality. Adler, Glymour, and Fielding (2016) note that the life expectancy of 40-year-old men at the bottom of the income distribution is 14.6 years shorter than for men in the top of the income distribution. Greater spending should not produce these results.

**EXHIBIT 1.2**  
Life Expectancy  
at Birth, 2015

Country	Males	Females
Canada	79.6 years	83.8 years
France	79.6 years	85.5 years
Germany	78.3 years	83.1 years
Switzerland	80.8 years	85.1 years
United Kingdom	79.5 years	82.8 years
United States	76.5 years	81.2 years

Source: Data from OECD (2017).

#### Discussion Questions

- Why is spending so much more than other countries a problem?
- What can Americans not buy because of high spending on healthcare?
- What factors other than healthcare affect population health?
- Does this evidence suggest that the American healthcare system is not efficient?
- What are the most important **social determinants of health**?

**social  
determinants of  
health**  
Factors that  
affect health  
independently of  
healthcare (e.g.,  
education or  
housing).

### 1.4.2 The Fragmentation of Healthcare Payments

The fragmented payment system compounds the political problem. Most Americans see only a fraction of their total spending. A typical American pays for care through a mixture of direct payments for care; payroll deductions for insurance premiums; lower wages; higher prices for goods and services; and higher federal, state, and local taxes. Because so much of the payment system is hidden, few can effectively track healthcare costs. The exceptions, notably

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employers who write checks for the entire cost of insurance policies and the trustees of the Medicare system, understand the need to reduce costs.

## 1.5 What Does Economics Study?

What does economics study? Economics analyzes the allocation of **scarce resources**. Although this answer appears straightforward, several definitions are needed to make this sentence understandable. Resources include anything useful in consumption or production. From the perspective of a manager, resources include the flow of services from supplies or equipment the organization owns and the flow of services from employees, buildings, or other entities the organization hires. A resource is scarce if it has alternative uses, which might include another use in the organization or use by another person or organization. Most issues that managers deal with involve scarce resources, so economics is potentially useful for nearly all of them.

Economics focuses on rational behavior—that is, it focuses on individuals' efforts to best realize their goals, given their resources. Because time and energy spent in collecting and analyzing information are scarce resources (i.e., the time and energy have other uses), complete rationality is irrational. Everyone uses shortcuts and rules to make certain choices, and doing so is rational, even though better decisions are theoretically possible.

Much of economics is positive. **Positive economics** uses objective analysis and evidence to answer questions about individuals, organizations, and societies. Positive economics might describe the state of healthcare, for example, in terms of hospital occupancy rates over a certain period. Positive economics also proposes hypotheses and assesses how consistent the evidence is with them. For example, one might examine whether the evidence supports the conjecture that reductions in direct consumer payments for medical care (measured as a share of spending) have been a major contributing factor in the rapid growth of healthcare spending per person. Although values do not directly enter the realm of positive economics, they do shape the questions economists ask (or do not ask) and how they interpret the evidence.

**Normative economics** often addresses public policy issues, but not always. The manager of a healthcare organization who can identify additional services or additional features that customers are willing to pay for is demonstrating normative economics. Likewise, the manager who can identify features or services that customers do not value is also demonstrating normative economics.

Normative economics takes two forms. In one, citizens use the tools of economics to answer public policy questions. Usually these questions involve ethical and value judgments (which economics cannot supply) as well

**scarce resource**  
Anything useful in consumption or production that has alternative uses.

**positive economics**  
Using objective analysis and evidence to answer questions about individuals, organizations, and societies.

**normative economics**  
Using values to identify the best options.

**CASE 1.2****Why Does the United States Spend So Much More?**

Case 1.1 noted that the United States spends far more per person on medical care than other wealthy countries. Is that because Americans are wealthier, because they have worse habits, or because they use more services?

Income is a possible explanation. Income per capita is higher in the United States than in the other five countries discussed in case 1.2 (World Bank 2017). This extra income could result in Americans' using more services or paying higher prices. Part of the answer, it turns out, is that Americans pay higher prices. Americans use fewer pharmaceuticals, make fewer physician visits, and spend less time in hospitals but spend more on each of these items than residents of other countries do (OECD 2017).

Higher prices for inputs, such as pharmaceuticals, hospital services, and physician services, help drive higher spending in the United States. For example, the average amount private insurers pay hospitals and physicians for knee replacement surgery is \$28,184 in the United States and \$20,132 in Switzerland, whereas the National Health Service pays an average of \$18,451 in the United Kingdom (International Federation of Health Plans 2016). Prices in the United States are 40 percent higher than prices in Switzerland and 53 percent higher than prices in the United Kingdom. Similarly, Harvoni, a drug used to treat hepatitis C, costs \$32,114 in the United States versus \$22,554 in Switzerland and \$16,861 in the United Kingdom's National Health Service (International Federation of Health Plans 2016). Prices for Harvoni in the United States are 42 percent higher than in Switzerland and 90 percent higher than in the United Kingdom. Most governments negotiate input prices, but in the United States private insurers with limited leverage negotiate prices. Governments in the United States do negotiate physician and hospital prices for Medicare and Medicaid, but not pharmaceutical prices.

The United States also has a more intensive mix of services. Compared with the average European country, the United States uses 88 percent more **MRI (magnetic resonance imaging) scans** per person, 76 percent more **CT (computed tomography) scans**, and 15 percent more **cesarean sections** (OECD 2017). In addition, the physician workforce

*(continued)*

**MRI scan**

An imaging method that uses magnetic fields to align hydrogen atoms. A computer processes the resulting signal to produce images of hard and soft tissues. Unlike X-rays, MRI scans do not expose patients to ionizing radiation.

**CT scan**

An imaging method in which a computer processes multiple X-rays to produce virtual cross-sectional images.

**cesarean section**

Surgical delivery of a baby.

## CASE 1.2

(continued)

has far fewer primary care physicians than in other wealthy countries. Although primary care physicians are well paid by international standards, earning an average of \$217,000, this average salary is more than 40 percent less than specialists earn (Grisham 2017).

To understand the higher prices and more intensive service mix in the United States, one needs to understand the unique history of American health insurance. Blue Cross was started by hospitals in 1929 to bolster sagging hospital revenues, and Blue Shield was started by physicians in 1939 (Rothman 2017). Both were designed to limit price competition, and neither covered primary care services. Although health insurance is changing rapidly now, for many years the models set up by Blue Cross and Blue Shield persisted.

For the most part, Americans do not have worse habits than the citizens of other wealthy countries. Americans smoke and drink less than average (OECD 2017). Americans are much more likely to be obese than average, which contributes to high blood pressure, high cholesterol, diabetes, and a host of other complications. Increases in obesity have increased costs by hundreds of billions of dollars (Biener, Cawley, and Meyerhoefer 2017).

### Discussion Questions

- Why are prices so much higher in the United States?
- Why is the intensity of care higher in the United States?
- Should Medicare negotiate drug prices?
- Why does the history of health insurance matter?
- How does obesity increase costs?

as factual judgments (which economics can support or refute). A question such as “Should Medicare eliminate deductibles?” involves balancing benefits and harms. Economic analysis can help assess the facts that underlie the benefits and harms but cannot provide an answer. The second form of normative economics is the basis for this book’s content. This form tells us how to analyze what we *should* do, given the circumstances that we face. In this part of normative analysis, market transactions indicate value. For example, we may believe that a drug is overpriced, but we must treat that price as a part of the environment and react appropriately if no one will sell it for less. Most managers find themselves in such an environment.

To best realize our goals within the constraints we face, we can use the explicit guidance economics gives us:

1. First, identify plausible alternatives. Breakthroughs usually occur when someone realizes there is an alternative to the way things have always been done.
2. Second, consider modifying the standard choice (e.g., charging a slightly higher price, using a little more of a nurse practitioner's time).
3. Next, pick the best choice by determining the level at which its *marginal benefit* equals its *marginal cost*. (We will explain these terms shortly.)
4. Finally, examine whether the total benefits of this activity exceed the total cost.

Skilled managers routinely perform this sort of analysis. For example, a profit-seeking organization might conclude that a clinic's profits would be as large as possible if it hired three physicians and two nurse practitioners but that the clinic's profits still would be unacceptably low if it did. Profits would fall even further if it increased or decreased the number of physicians and nurse practitioners, so the profit-seeking organization would choose to close the clinic.

Let us define some terms to make this discussion clearer. *Cost*, as noted previously, is the value of a resource in its next best use. For example, the cost of a plot of land for a medical office would be the most another user would pay for it, not what it sold for 20 years ago. The next best use of that land might be for housing, for a park, for a store, or for some other use. Usually the next best use of a resource is someone else's use of it, so a resource's cost is the amount we would be paid when we sell it or the price we have to pay to buy it. *Benefit* is the value we place on a desired outcome. We describe this value in terms of our willingness to trade one desired outcome for another. Often, but not always, our willingness to pay money for an outcome is a convenient measure of value. A *marginal* or an *incremental* amount is the increased cost we incur from using more of a resource or the increased benefit we realize from a greater outcome. So, if a 16-ounce iced tea costs \$1.49 and a 24-ounce iced tea costs \$2.29, the incremental cost of the larger size is  $(\$2.29 - \$1.49) \div (24 - 16)$ , or 10 cents per ounce. A rational consumer might

1. conclude that the incremental benefit of the larger iced tea exceeds its incremental cost and buy the larger size;

2. conclude that the incremental cost of the larger iced tea exceeds its incremental benefit and buy the smaller size; or
3. conclude that the total benefit of both sizes was less than their total cost and buy neither.

Remember, however, that rational decisions are defined by the goals that underpin them. A consumer with a train to catch might buy an expensive small drink at the station to save time.

## 1.6 Conclusion

Why should healthcare managers study economics? To be better managers. Economics offers a framework that can help all managers simplify and improve their management decisions. It is especially valuable to clinicians who assume leadership roles in healthcare organizations. Managers are routinely overwhelmed with information, yet they often lack the key facts that they need to make good decisions. Economics offers a map that makes focusing on essential information easier.

## Exercises

- 1.1 Why is the idea that value depends on consumers' preferences radical?
- 1.2 Mechanics usually have better information about how to fix automobiles than their customers do. What problems does this advantage create? Do mechanics or their customers do anything to limit these problems?
- 1.3 A mandatory health insurance plan costs \$4,000. One worker earns \$24,500 in employment income and \$500 in investment income. Another worker earns \$48,000 in employment income and \$2,000 in investment income. A third worker earns \$68,000 in employment income and \$7,000 in investment income. A premium-based system would cost each worker \$4,000. A wage tax-based system would cost each worker 8.5 percent of wages. An income tax-based system would cost each worker 8 percent of income. For each worker, calculate the cost of the insurance as a share of total income.

	Worker 1	Worker 2	Worker 3
<b>E</b> = Employment income	\$24,500	\$48,000	\$68,000
<b>I</b> = Investment income	\$500	\$2,000	\$7,000
<b>P</b> = Premium cost of insurance	\$4,000	\$4,000	\$4,000
Premium as a percentage of income = $P/(E + I)$			
<b>W</b> = Wage tax cost of insurance = $0.085 \times E$			
Wage tax cost as a percentage of income = $W/(E + I)$			
<b>T</b> = Income tax cost of insurance = $0.080 \times (E + I)$			
Income tax cost as a percentage of income = $T/(E + I)$			

- 1.4 Which of the plans in exercise 1.3 would impose the larger burden on those with incomes under \$25,000: a mandatory insurance plan financed via premiums, via the income tax, or via a payroll tax?
- 1.5 Which of the plans in exercise 1.3 would be fairest?
- 1.6 Which of the preceding questions can you answer using positive economics? For which of the preceding questions must you use normative economics?
- 1.7 The following table shows data for Australia, the United Kingdom, and the United States.
- How did life expectancy at birth change between 2010 and 2015?
  - How did expenditure per person change between 2010 and 2015?
  - What conclusions do you draw from these data?
  - If you were the “manager” of the healthcare system in the United States, what would be a sensible response to data like these?

	Life Expectancy (Years)		Expenditure per Person	
	2010	2015	2010	2015
Australia	81.8	82.5	\$3,893	\$4,493
United Kingdom	80.6	81.0	\$3,281	\$4,125
United States	78.6	78.8	\$8,559	\$9,507

Source: Data from OECD (2017).

Note: Expenditure per person has been translated into US dollars and adjusted for inflation.

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