Many nurses lack formal preparation in the basics of economics and financial management, yet this knowledge is crucial in light of current changes to our health care system. This revision helps nurses and nurse leaders build the economics and financial management skills they use every day. Several new features enhance its value as a highly relevant text for RN-to-BSN, BSN, and MSN students in a variety of academic nursing programs. The text has been significantly revised for clarity of content and to be useful within both the traditional in-class format, and hybrid and online distance courses and programs.

Readers will learn the fundamentals of economics, finance, and budgeting as they relate to the delivery of health care, as well as practical, hands-on skills in budget preparation, financial analysis, and patient advocacy. Case examples drawn from inpatient and outpatient settings illustrate the application of content. The book provides nurses with multiple opportunities for experiential learning such as writing business plans and health program grant proposals. It delivers enhanced discussions of cost-benefit analysis, cost-effectiveness analysis, and comparative effectiveness analysis; offers strategies for controlling costs; and updates health reform policy and health care spending. The text discusses patient advocacy and interdisciplin ary teamwork as they relate to economic and financial issues. Additionally, tips throughout the book encourage students to apply concepts from other aspects of their education to economic and financial situations.

Key Features:
• Aligned with AACN, AONE, and QSEN guidelines and competencies required for the CNL certification exam
• Serves as a primary financial management text for a wide variety of nursing academic programs
• Facilitates experiential learning through end-of-chapter exercises, crossword puzzles, tips for synthesizing knowledge, and case examples
• Presents a new chapter on measuring nursing care with indicators for capacity, staffing, patient acuity, performance, and patient flow
• Includes online supplemental material for teachers and students, including Excel spreadsheets, crossword puzzles, a test bank, and PowerPoint slides
Economics and Financial Management for Nurses and Nurse Leaders
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Economics and Financial Management for Nurses and Nurse Leaders

Second Edition

Susan J. Penner, MN, MPA, DrPH, RN, CNL
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Preface

Money is the opposite of the weather. Nobody talks about it, but everybody does something about it—Rebecca Johnson

Nurses experience the effects of economics, finance, and budgeting with challenges such as budget cutbacks, cost control efforts, and complicated insurance guidelines. Nurses also make an impact on health care costs and revenues whenever they provide patient care or other health services. In any type of health care setting, inpatient or outpatient, private practice or nationwide health care system, monetary concerns influence day-to-day performance and the organization’s long-term survival.

Factors such as new technologies and an aging population lead to rising health care costs and changes in health care financing. The passage of the Patient Protection and Affordable Care Act (PPACA) introduces new policies and approaches to extend health care to all Americans while managing health care costs. It is more important than ever for nurses to obtain an understanding of the fundamentals of health care economics, finance, and budgeting in order to make a business case for improving patient care.

Unfortunately, many nurses lack formal preparation in the basics of economics and financial management. For example, in a study of 86 American staff nurses, Caroselli (1996) found that only 26 of these nurses had obtained any general knowledge of budgeting or finance. Of the 26 nurses, only 4 reported they obtained this knowledge from a nursing instructor, and the largest number, 11, reported they were self-taught. Further, the economic awareness of these of 86 staff nurses was not shown to increase based on factors such as age, work experience, education, or even management experience.

Economics and Financial Management for Nurses and Nurse Leaders is designed to meet the learning needs of a broad range of nurses, from staff to nurse managers, from entry-level undergraduate students to master’s-level clinical practitioners. These nurses will learn the fundamentals of economics, financing, and budgeting that affect their work setting and their delivery of health care. These nurses also will develop practical, hands-on skills in budgeting, financial analysis, and making a business case for improving patient care as they apply concepts from this textbook.

OVERVIEW

Economics and Financial Management for Nurses and Nurse Leaders is organized into four major sections. Part I includes Chapter 1: Economics of Health Care, Chapter 2: Health Insurance and Fee-for-Service Financing, and Chapter 3: Managed Care and Performance Measurement. These chapters provide an overview of the health care economics, context of health care, and financing in the United States. A discussion of the provisions of the PPACA updates information about health care insurance and financing mechanisms.
Part II includes Chapter 4: Measuring Nursing Care, Chapter 5: Reporting and Managing Budgets, Chapter 6: Budget Planning, and Chapter 7: Special Purpose, Capital, and Other Budgets. These chapters present indicators that are frequently reported in health care budgets, with strategies for controlling budget costs and techniques for budget preparation. The budgets that nurses most frequently review when working in acute care and outpatient settings are presented, particularly the operating budget.

Part III includes Chapter 8: Cost-Finding, Break-Even, and Charges; Chapter 9: CBA, CEA, CUA, and CER; Chapter 10: Writing a Business Plan; and Chapter 11: Health Program Grant Writing. These chapters help nurses demonstrate the financial benefits of nursing interventions and develop a business case or grant proposal for improving patient care.

Part IV includes Chapter 12: Financial Statements and the Nurse Entrepreneur, Chapter 13: Ethical Issues and International Health Care Systems, and Chapter 14: Health Policy and Future Trends. These chapters enable nurses to assess the organization’s overall financial health, and to gain a broader understanding of other health care systems and anticipated changes in health care financing in the United States and around the world.

**Economics and Financial Management for Nurses and Nurse Leaders** is organized so that in Part I the student first gains an overall understanding of the dynamics of health care economics and financing. In Part II, the student is prepared to plan and control costs and to recognize the importance of revenues and profitability. Skills in developing and analyzing budgets provide a foundation for leadership, and for developing further proficiencies in financial management. Part III extends skills development by helping students create a financial analysis that supports a business case or grant proposal that will improve patient care. Part IV introduces more advanced topics, including understanding financial statements, entrepreneurship, international systems, and policy analysis that reinforce life-long and self-directed learning about economics, finance, and budgeting.

**TEXTBOOK FEATURES**

Important objectives and competencies from the AONE Nurse Executive Competencies; American Association of Critical-Care Nurses (AACN), Financial Management in Healthcare Organizations module; and the American Association of Colleges of Nursing, Clinical Nurse Leader (CNL) certification examination are addressed throughout the textbook. In addition, end-of-chapter exercises and ancillary instructor materials incorporate concepts drawn from Quality and Safety Education for Nurses (QSEN) competencies. Instructor ancillary materials include: Excel data files, PowerPoint presentations, test questions, answer keys, glossary, sample syllabus, and teaching ideas and are available by contacting textbook@springerpub.com.

The book uses practical case examples drawn from inpatient and outpatient health care settings to illustrate the application of content. This technique assists students in developing hands-on approaches in working with financial data and financial management concerns. Nurses will learn concepts and develop fundamental skills in using tools to help them understand the economic and financial forces driving today’s health care system. Nurses will learn how to prepare budgets, business plans, and health program grant proposals with practical applications in their work settings.

A nursing course in economics and finance should facilitate the synthesis of information from across the curriculum and from experience working in the health professions. Students are encouraged to draw upon competencies gained from their education and experience, including:

- Evidence-based practice and research principles that help in developing valid and reliable support for making a business case
Biostatistics and epidemiology concepts that enable the application and analysis of relevant data

Nursing management, leadership, and health policy theories that provide a psychosocial and political context for understanding economic and financial strategies and for evaluating and implementing business plans and grant proposals

Writing and critical-thinking skills to communicate and critically appraise approaches and ideas for evaluating budgets and other financial reports including business plans and grant proposals

Each chapter begins with a set of learning objectives and a list of key terms introduced and defined within the chapter and also included in the glossary at the end of the book. Tables, figures, and text boxes help illustrate concepts covered in the chapter. Electronic ancillary resources are provided to allow further exploration of topics. Exercises at the end of each chapter help students discuss, apply, and review knowledge. Student ancillary materials include crossword puzzles/answer keys, Excel data files, PowerPoint presentations, and glossary that provide information and data from each chapter and are available from Springerpub.com/penner-student-supplements. The Excel files also organize chapter terms and definitions so they can be converted to text files and uploaded to software such as the BlackBoard online course Glossary; Quizlet online flash cards; or ArmoredPenguin.com word games. Selected terms and definitions are included in each chapter as crossword puzzles generated by ArmoredPenguin.com. The instructor ancillary materials provide access to test questions and PowerPoint slides as further aids in teaching and learning.

SUGGESTIONS FOR FACULTY

This textbook is designed for use either in a traditional in-class format or with online and distance-teaching and -learning technologies. The 14 chapters can be covered within traditional and accelerated curriculum schedules. As noted previously, a sample syllabus and suggested assignments are provided for faculty to help in developing this nursing course. The end-of-chapter exercises can be adapted for online discussions or in-class group work. The electronic ancillary resources and supplemental materials such as sample reports and Excel files give students additional information and data for problem solving, hands-on applications, and independent learning.

Content in Chapters 10 and 11 can provide the basis for student use in developing a business plan or a grant proposal as a course project and paper assignment. Such a course project emphasizes critical thinking and supports building skills in budgeting and financial analysis. The business plan or grant proposal may be assigned as individual or group work in traditional or distance-learning courses. The worksheets included in Chapters 10 and 11 provide guidelines and rubrics. Students will develop and refine writing skills and gain practice in providing an evidence base as they discuss the problem and intervention in their business plan or grant proposal.

SUGGESTIONS FOR STUDENTS AND PRACTITIONERS

Some readers might be concerned about the math required in learning and applying the concepts in this book. The book is designed for students who have mastered basic math skills. A nurse who is able to safely calculate medication dosages should be able to accurately develop a budget or calculate a simple financial ratio or analysis as presented in
this book. If needed, there are many math review websites (www.mathforum.org) for further practice. The HelpingWithMath.com, Calculating Percentages website; the patrickjmt.com, Just Math Tutorials; and the Ask Dr. Math, Percentage of Increase website (www.mathforum.org) are all examples of online resources that students can access for basic math review. In addition, online resources are included in book chapters to enhance understanding of financial calculations and concepts.

Readers are encouraged to review examples within the chapters and to complete the end-of-chapter exercises to reinforce concepts. It is assumed that health care economics, finance, and budgeting are new to the reader. Nurses require practice to develop their clinical skills, and they require practice to develop skills in budgeting, financial analysis, and making a business case.

Nursing students represent the future of health care delivery and health care economics, finance, and budgeting. There are tremendous challenges facing health professionals and the institutions in which they work to provide access to high-quality care at a reasonable cost. The skills nurses and nursing students gain from this book and related assignments provide capabilities and insights to help meet these challenges.

REFERENCE

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Those who contributed the Appendices to Chapters 10 and 11, at the time of their contribution, were graduate students in the University of San Francisco School of Nursing & Health Professions, MSN Clinical Nurse Leader program.

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Part I: Overview of Economics and Health Care

Chapter 1: Economics of Health Care

People want economy and they will pay any price to get it—Lee Iacocca

Learning Objectives

1. Explain at least three major characteristics of the U.S. health care competitive market.
2. Give examples of at least three economic concepts applied to health care.
3. Evaluate the impact of price on health care consumer behavior.
4. Summarize the history of health care economics and policy in the United States.

Key Terms

- allocative efficiency
- barriers to entry
- competitive market
- cost
- cost shifting
- demand
- derived demand
- economies of scale
- economies of scope
- efficiency
- externalities
- fixed costs
- free-rider problem
- income redistribution
- inputs
- market
- market disequilibrium
- market equilibrium
- market failure
- market power
- monopoly
- monopsony
- natural monopoly
- negative externalities
- opportunity cost
- outputs
- pent-up demand
- positive externalities
- production efficiency
- public goods
- shortage
- socialized medicine
- substitutes
- supply
- surplus
- technical efficiency
- throughputs
- trade-off
- transparency
- trusts
- union
- variable costs
I went to nursing school, not business school. I don’t need to learn about economics!” “It’s wrong to think about making a profit when we have patients who need care!” “Why should I care about controlling costs? That’s the nurse manager’s problem!” “I’m already overwhelmed with providing patient care—leave things like supply and demand to the experts.”

Many nurses and nursing students feel the same way about economics and requirements to learn economic principles. What many nurses don’t realize is that they are active participants in the health care economics system, and in the even larger national and global economies. A basic introduction to fundamental concepts of health care economics is essential to understand how the U.S. health care system and health care organizations operate. This introduction links the patient care role of nurses with economic forces driven by costs, revenues, and profits.

HISTORICAL CONTEXT OF HEALTH CARE AND NURSING ECONOMICS

This chapter begins with a general overview of some important past events in health care and public policy, which will help nurses better understand the current economic issues and concerns in an historical context. Looking back is often a first step toward moving forward because many of our current health system problems and policies are shaped and influenced by past decisions. These examples show the development of health care in the context of economics and are not a comprehensive history. The timeline is largely limited to the history and culture of Western society, overlooking many developments and achievements in other world regions and cultures. Those interested in learning more about the history of health care should refer to resources provided at Health Care History 101 (Leonhardt, 2009).

Prehistoric times. Think back to what life was like and how health care was delivered in prehistoric times. The earliest health services would have occurred within the confines of one’s family or tribe. Interpersonal help and support in times of injury, illness, or childbirth were the only care or health “coverage” available.

Circa 400 BCE. Modern civilization progresses with the emergence of cities in locations such as Babylon and Ancient Greece. Hippocrates and other physicians manage the care of the ill and injured, and establish fees for their services. A closer look at the emergence of medical care and health care markets in Ancient Greece is provided at the website Health, Economics, and Ancient Greek Medicine (http://historyoftheancientworld.com/2011/03/health-economics-and-ancient-greek-medicine/). Nursing care remains the work and responsibility of untrained family members and caregivers, who most likely provide care for free. At the same time, universal health care was instituted in Ancient India, and information is available in an online video, Universal Health Care in Ancient India (http://www.beaconbroadside.com/broadside/2010/03/video-bruce-rich-on-universal-health-care-in-ancient-india.html).

Circa 400 CE. During the Middle Ages, hospices are established, with religious orders providing nursing care to travelers, the poor, and the sick and dying. Although the care is compassionate and charitable, these providers are untrained, and health care is based largely on superstition. Hospices are places where patients come to die rather than to be healed. These early hospitals and nurses establish a tradition of providing free charity care rather than requiring reimbursement or wages. Wealthier individuals rely on care from physicians, whom they can afford to pay, and from family and private caregivers for nursing care in the home.

1600s. The English Poor Law of 1601 reinforces society’s distinction between poor and vulnerable people who are thought to deserve or not deserve charity. The values reflected in the Poor Law influence U.S. welfare policy on into the 21st century. For example, undocumented immigrants are specifically denied health coverage benefits in the Patient Protection and Affordable Care Act of 2010 (PPACA, 2010).
1776. The American Revolution launches principles of self-governance and personal independence that become the bedrock of American culture. Events such as the Boston Tea Party and the Whiskey Rebellion further shape American cultural beliefs and attitudes about taxation rights and resistance. Americans continue to oppose taxation on into the 21st century, as evidenced by complaints about tax increases and calls for tax cuts at local, state, and national levels. This cultural context influences policies and politics of health care funding and programs.

1820 to 1910. Florence Nightingale is born of English parents in Florence, Italy in 1820 and dies in 1910. Nightingale not only transforms and professionalizes the training of nurses, but she is also influential in English health policy, an expert in health care data analysis, and one of the first nurses to write about financial management issues such as utilization and length of stay (Penner, 1987). Germ theory and concepts of personal hygiene and public sanitation begin to replace the largely superstitious beliefs that persisted in medicine up to this point (Diamond, 1997). Hospitals evolve as places where patients might expect to heal, with professional nursing education and care beginning to be recognized as essential to successful outcomes.

1854. The reformer Dorothea Dix successfully lobbies Congress to pass a bipartisan bill providing federal support to build asylums for the insane throughout the United States. President Franklin Pierce vetoes the bill, claiming that it is unconstitutional to involve the Federal government in public charity (Holt, Holt, Schlesinger, & Wilentz, 2010). This Presidential proclamation limits U.S. health care and social services policies, programs, and funding on into the 20th century.

1883. The first government-sponsored health insurance program is inaugurated in Germany with Otto von Bismarck’s Health Insurance Act of 1883. German and other European health insurance programs begin by covering low-income workers and eventually cover all citizens. By the early 1900s, many European governments have established universal health coverage. The European approach differs from the “hands-off” approach to social welfare policies in the United States.

1901 to 1909. In the United States, President Theodore Roosevelt leads a successful charge against trusts, which are business agreements or practices that restrict free trade. Antitrust laws such as the Sherman Antitrust Act of 1890 are passed and enforced to protect consumers and promote open markets and competition. These antitrust laws focused on railroad and oil monopolies.

In the health care market, antitrust laws have led to unforeseen consequences. Antitrust laws limit efforts to develop innovations to improve clinical services integration and more standardized health care pricing. Thus, the antitrust movement of the early 1900s complicates the implementation of current health reform efforts to increase transparency and collaboration among providers (Burke, Cartwright-Smith, Pereira, & Rosenbaum, 2009).

1910. The Flexner Report, published in 1910 by the Carnegie Foundation, critiques the preparation of U.S. physicians. The Flexner Report leads to profound changes in U.S. medical education, influencing the education of nurses and other health professionals, as well. One implication is that increasing resources are required for the adequate preparation of the health care workforce. Health professionals who pay high costs for their training and education also have higher expectations for adequate pay and reimbursement. The strong emphasis on restricting medical practice also impedes the education, employment, and reimbursement of mid-level providers (MLPs) such as nurse practitioners and nurse midwives.

1920 to 1929. By the 1920s, U.S. hospitals feature enough sanitation, professional staff, and technology (such as x-rays) to become places where lives are saved and seriously ill or injured patients are fully rehabilitated. Hospitals not only become institutions of healing, but also settings for physicians and surgeons to learn and advance medical practice.

Staff and technology are costly and require adequate and reliable financial support. Physicians increasingly expect state-of-the-art facilities and equipment, as well as highly trained nurses and staff to carry out increasingly advanced procedures. It becomes
increasingly important for hospitals to operate as businesses rather than charitable institutions. Although hospitals are still largely charitable, religious, or public institutions, hospital administration moves toward a business model to obtain adequate revenue to cover these costs.

1929 to 1939. The Great Depression results in large numbers of unemployed, destitute people who cannot afford to pay health care bills. In the United States, the Depression leads to the creation of nonprofit and for-profit health plans such as Blue Cross for hospitalization and Blue Shield for medical care. Prepaid plans also develop to cover large employee groups, introducing the innovation now known as managed care. The growth of private health insurance in the United States is stimulated by a number of stakeholders. Physicians and hospitals support health insurance because it assures that they will receive adequate reimbursement for their services. Patients and families trust that they can access affordable health care and that they are protected from financial ruin should a catastrophic health event occur. Insurers serve the community and profit from providing health coverage.

1939 to 1945. During World War II, the U.S. government provides tax exemptions for employer and employee health insurance premiums. The health insurance tax exemption is an incentive for home front factory workers when the war effort makes it impossible to raise worker wages. Enrollment in health insurance plans grows from 20.6 million in 1940 to 142.3 million in 1950 (Blumenthal, 2006).

1945. President Harry S. Truman proposes a national health program, including the creation of a voluntary health insurance program to be operated by the Federal government. In opposition, the American Medical Association coins the term socialized medicine, linking the national health insurance proposal to communism (Truman Library, 2011). Successful lobbying and the widespread adoption of private health insurance likely contribute to the defeat of Truman’s government-sponsored health insurance proposal.

1965. Lyndon B. Johnson oversees the passage of Title XVIII, Medicare, and Title XIX, Medicaid, of the Social Security Act of 1965. In the 1960s, the highest poverty rates are among senior citizens, and only about half of the elderly in 1965 can afford health insurance. Medicare and Medicaid extend health coverage to nearly all elderly Americans as well as to eligible low-income children, adults, and people with disabilities (HCFR, 2005–2006).

1970 to 1979. National health expenditures soar as the fee-for-service provisions of Medicare, Medicaid, and most insurance plans pay full charges for hospitalization and medical care with little oversight. During the Carter Administration, concerns about rising health care costs lead to new legislation. The Health Maintenance Organization (HMO) Act of 1973 removes legal restrictions to establishing managed care plans. The HMO Act also requires employers to offer at least one HMO insurance option to employees. As a result, managed care spreads and improves efforts to review and control hospital and physician charges.

1980 to 1989. Concerns about health care costs increase, with employers increasingly worried about the effect of rising health premiums on profits and American global competitiveness. The Reagan Administration establishes the Medicare Prospective Payment System (PPS) to better control hospital utilization and costs for Medicare patients. The Consolidated Omnibus Budget Reconciliation Act of 1986 (COBRA) regulates continuation of health insurance after termination of employment. The Emergency Medical Treatment and Active Labor Act (EMTALA) is passed as part of the COBRA legislation, making emergency rooms the health care safety net for many Americans, including the uninsured.

1990 to 1999. The Clinton Administration enacts the Health Insurance Portability and Accountability Act of 1996 (HIPAA), which among other provisions helps protect consumer rights and privacy related to health insurance coverage. Clinton also signs the Balanced Budget Act of 1997, which establishes State Children’s Health Insurance Program (SCHIP) to expand health insurance coverage for poor, uninsured American children. However, the Clinton Administration’s effort to enact universal health coverage ends in failure. A detailed history of 20th century U.S. health insurance is available at the EH.net Health Insurance in the United States website (www.eh.net).
2000 to 2008. During the George W. Bush Administration, concerns about health costs continue, and there are over 43 million uninsured Americans. Policies encourage the development of high-deductible, consumer-driven health plans to make American citizens more aware of and responsible for the costs of health care. A soaring national deficit and the onset of a global economic recession raise even more concerns as Americans lose jobs and homes. The increased utilization of pharmaceuticals, medical devices, and other technologies pushes the cost of care higher.

For the first time in recorded history, chronic diseases such as cardiovascular disease and diabetes surpass communicable diseases as the leading cause of death (WHO, 2011). This change shifts health care needs and utilization on into the future, as aging populations require ongoing services and support. The importance of primary prevention is also underscored to reduce the prevalence of many chronic disorders.

2009 to the present. With partisan opposition and amid considerable controversy, the Patient Protection and Affordable Care Act of 2010 (PPACA) is enacted by the Obama Administration (PPACA, 2010). Health reform provides increased opportunities for professional nurses and nurse practitioners to expand their practice to the full extent of their role (IOM, 2011). The June 2012 U.S. Supreme Court ruling upheld the provisions of the PPACA, but allows states to opt out of the expansion of Medicaid to Americans with incomes less than 133% of the federal poverty level (Galewitz & Serafini, 2012). Continued increases in health care costs, along with a stagnant economy and government budget deficits, add to challenges for a U.S. health care model that controls costs while assuring access to high-quality care.

Figure 1.1 summarizes many of the historical events in health care economics as a visual timeline. Physicians have utilized a fee-for-service business model for many years. Over the last century or so, hospitals evolved from being charity institutions to a business model of billing for charges. By contrast, from prehistoric times, nurses worked largely within homes...
and later in hospitals as free or low-paid helpers, reaching professional status only since the late 1800s. Until relatively recently, nurses did not negotiate wages or advocate for wage increases. A review of literature on costing out nursing services finds little agreement on terms such as “direct nursing care” and “direct nursing costs” (Eckhart, 1993). Nurses lag far behind physicians and hospital administrators in linking financial principles to clinical practice.

This historical overview reinforces that improvements in life-saving technologies are offset by mounting costs and limits on resources. Public values about who should pay for and who should receive health care are often based on thinking passed down from earlier times. In the United States, partisan politics play an important role in setting or opposing health care policies. Nurses, with the exception of leaders such as Nightingale, have historically been at the forefront of patient care, not health care policy making or the design of health care systems. As the largest segment of the health care workforce, the potential for nurses to educate the public about health policy and to develop workable, cost-effective, and compassionate strategies for health care delivery is considerable. If nurses intend to meet future challenges by working to the full extent of their capability (IOM, 2011), they must understand the economic implications of health care and play a role in setting health care policy.

HEALTH CARE COSTS

Health care represents one of the largest industry segments in the United States, providing 14.3 million jobs in 2008, and encompassing nearly 596,000 settings for the delivery of health care services. The health care sector is expected to continue to grow, related to factors such as the aging population and the expansion of health coverage provisions in the ACA (BLS, 2010).

Nurses represent the largest sector of health professionals in the United States (IOM, 2011) with more than three million registered nurses (RNs). The United States has more nurses than any other country and is also a major importer of international nurses (Carnevale, Smith, Gulish, & Beach, 2012). Nursing employment and access to nursing care are influenced by the economics of the health care industry. Nurses also make an important impact on health care costs and cost savings.

America has the most costly health care system in the world, and costs are rising. U.S. health care expenditures increased from 5.2% to 17.6% of gross domestic product (GDP) from 1960 to 2009 (Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group; U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Bureau of the Census, 2012). Expenditures for U.S. health care totaled $2.6 trillion in 2010. Health care costs are predicted to grow at a faster rate than the U.S. economy over the coming decade, to $4.6 trillion or 19.8% of the GDP by 2020 (Centers for Medicare & Medicaid Services, Office of the Actuary, 2012). In other words, by 2020, roughly one of every five dollars in the U.S. economy will be spent on health care. Figure 1.2 shows the actual and projected growth in U.S. health care costs from 1966 to 2018. These costs are borne by American consumers, employers, and taxpayers. Concerns about costs are intensified by the growing needs of an aging population and a society that expects advanced technologies and high-quality care.

Health care costs are not spread evenly across the American population. In 2009, only 1% of the American population accounted for 21.8% of total health care expenditures. These very high-cost patients averaged $90,061 per year for health care. In both 2008 and 2009, only 5% of the U.S. population accounted for nearly 50% of all health care expenditures, averaging $35,829 per high cost patient per year in 2008 (Cohen & Yu, 2012).

Health care financing in the United States is complicated and fragmented. A diverse and often uncoordinated mix of national, state, local, and private funders and providers are responsible for health care funding and services. In many cases, people in need of health care
“fall through the cracks” of the health care system because they lack eligibility for services or advocacy to represent their needs. An illustration and explanation of the complex flow of U.S. personal health care expenditures is presented at the New York Times Economix: The Money Flow from Households to Health Care Providers blog post (Reinhardt, 2011).


HEALTH CARE ECONOMIC CONCEPTS

This section presents some basic economic concepts relevant to health care. Some fundamental principles of economics are provided, with implications for health care and health care economics. These concepts will help provide a basis for understanding nurse employment and wages. It is important to remember that these are somewhat simplified and general examples. More detailed information about health care economics is available from textbooks such as Phelps (2009).

Efficiency

Figure 1.3 presents a diagram of the flow of resources and activities in health care systems. Inputs represent the resources and “raw materials” required for the production of products (goods or services). The activities, processes, or work applied to the inputs are known as

![Efficiency Diagram](image-url)
throughputs. The goods, services, or other outcomes produced are known as outputs. For example, patients arrive at a hospital as inputs. They receive nursing care, such as intravenous (IV) therapy and wound dressings, as throughputs, and are discharged from the hospital in better health as outputs.

Maximizing the production or value of goods or services while minimizing the resources or costs required for production is called efficiency. Efficient production is economically beneficial. Concerns about efficiency in health care are related to problems of excessive costs, waste, and inadequate access to services. Policies and initiatives often aim to improve the efficiency of health care delivery. For example, the Patient Protection and Affordable Care Act Hospital Value-Based Purchasing Program is intended to link hospital payment to quality measures to improve the efficiency of patient care (PPACA, 2010).

Text Box 1.1 shows four types of efficiency. Technical efficiency represents the production of the maximum amount of outputs given the minimum amount of inputs, or maximizing outputs for a given set of inputs.

For example, inpatient hospital care to receive intravenous cancer infusion services requires an intensive and costly combination of inputs such as nursing services, dietary and housekeeping services, medical supplies such as bed linens and medications, equipment, and a patient room. If patients can instead receive the same infusion services in an outpatient clinic, the intensity of inputs is reduced and of a shorter duration, and the costs are lower. Many of the inputs, such as 24-hour nursing supervision, dietary services, some

<table>
<thead>
<tr>
<th>Text Box 1.1 Types of Efficiencies</th>
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<tbody>
<tr>
<td>Technical efficiency: Producing the maximum amount of outputs (goods or services) compared with the inputs (resources) required for production.</td>
</tr>
<tr>
<td>Production efficiency: Minimizing the costs of producing outputs or maximizing the production of outputs at a given cost.</td>
</tr>
<tr>
<td>Allocative efficiency: Minimizing the amount or cost of inputs while maximizing the value or benefit of outputs, or producing outputs of maximum value or benefit for a given amount or cost of inputs.</td>
</tr>
<tr>
<td>Opportunity cost and trade-off: When one must give up all or part of a benefit or value in order to increase or acquire another benefit or value. The opportunity cost is the value of the trade-off.</td>
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medical supplies, and a patient room, are not required or are needed at a substantially reduced level. Technical efficiency is achieved because the same or greater level of outputs is possible with fewer inputs—the same number of patients can be served with fewer inputs, or more patients are served with the same amount of inputs.

Production efficiency minimizes the costs of producing outputs or maximizes the production of outputs at a given cost. Note that instead of focusing on the inputs or the actual resources required to produce outputs such as medications and supplies, the focus is on the monetary costs of those inputs. For example, if the outpatient clinic manager is able to negotiate a substantial discount on the cost of intravenous medication needles, tubing, and related supplies, the clinic is able to manage the same number of patients receiving infusion services at less cost, or more patients at the same cost, thus achieving production efficiency.

Allocative efficiency represents minimizing the amount or cost of inputs while maximizing the value or benefit of outputs, or producing outputs of maximum value or benefit for a given amount or cost of inputs. For example, the outpatient clinic might offer videos educating the patient about the cancer medications and other health topics to watch while in the waiting room or while receiving the intravenous medications. Follow-up assessments might be scheduled in coordination with medication administration. These inputs might be small or relatively low cost, but add substantially to the value of the outpatient visit, thus achieving allocative efficiency.

An opportunity cost is the cost related to a trade-off. A trade-off occurs when it is necessary to choose between one alternative and another and to weigh alternative costs in making decisions (Mankiw, 2011). In the outpatient clinic example, the opportunity cost is related to decisions to increase cancer infusion services compared with other clinic services. Increasing cancer infusion services will require a reduction in other services the clinic can provide. The value of this reduction in services (trade-off), such as the loss in reimbursement from the other clinic services, represents the opportunity cost.

Opportunity costs also apply to nonmonetary resources, such as time. For example, delays in appointments and long waiting lists cause at least some patients to delay care or seek care elsewhere. A person’s time is of enough value to present as an opportunity cost. One way to estimate the opportunity cost of a person’s time is to use the person’s hourly wage or an estimated hourly wage as a measure of the time’s value.

Competitive Markets

A market is a group of buyers and sellers of specified products, which may be goods or services (Mankiw, 2011). The U.S. and most other world economies support the formation of competitive markets, also referred to as free or open markets. According to economic theory, perfect competition ensures rational distribution of resources under conditions of economic exchange. In other words, competitive markets enable societies and nations to distribute resources efficiently.

Characteristics of competitive markets include the following:

- There are large numbers of both producers selling products and of consumers purchasing those products.
- Producers are free to enter or leave the market.
- The products offered by competing producers are similar and comparable.
- Neither a single consumer nor producer (or small group of consumers or producers) is able to influence the market price of the products (Mankiw, 2011).

One example is to imagine a perfectly competitive market for apples. There are many producers growing and selling apples and many consumers purchasing apples. Producers are free to choose to enter the market to grow and sell apples or leave the market and produce other products. Producers choose to enter the market if the price they obtain from
growing apples covers their costs. Producers are even more interested in entering the market if the price covers their costs and allows for profit. Producers choose to leave the market if the price from growing apples is not enough to make the venture profitable.

The apples sold are similar and comparable enough that consumers can “shop around” to select apples at a price they are willing and able to pay. If the price for apples rises to a level that consumers cannot afford, consumers are able to choose other comparable products, such as peaches. In other words, consumers can choose whether or not to purchase apples.

Multiple producers ensure that no single producer or group of producers can control the price of the apples. Multiple consumers ensure that no single consumer or group of consumers can control the price of apples. The price of apples thus is expected to approach the amount that consumers are willing to pay and that is sufficiently profitable for producers.

This example is simplified, as there are various types of apples and consumer preferences may differ, with some consumers preferring one type of apple and some consumers preferring another. There may be other complicating factors as well, such as the growing season or shipping costs. However, the description of the market for apples shows that there are relationships between producers, consumers, and the price of products sold in competitive markets. In a perfectly competitive market, the interaction between producers and consumers leads to a price that allows for the rational distribution of apples.

Health Care Markets

Health care markets are not perfectly competitive, although in many cases economic theory can be applied to health care markets. The simplified market for apples provides a basis for applications to the health care market. This section discusses how producers, consumers, products, and price in health care markets can differ from the competitive market.

Producers. Producers of health care are often referred to as providers. In many cases, health care providers cannot freely enter health care markets because they face barriers to entry, or restrictions to entering markets. For example, many health care professionals such as nurses cannot legally practice without extensive training, credentialing, and licensure, which pose barriers to entry. Hospitals and other health care settings often require extensive regulation and accreditation requirements to operate, which serve as barriers to entry. Barriers to entry restrict competition and reduce the consumer’s choice of providers. The rationale for restricting competition is to ensure quality and integrity in health care goods and services.

Barriers to entry limit the number of health care providers and may lead to shortages. Other factors contributing to shortages of health care providers include low wages or reimbursement and rural locations, or both. The Health Resources and Services Administration (HRSA) enables searching by primary medical care, dental services, or mental health services to identify Health Professional Shortage Areas (HPSAs) in the HPSA by State and County website (http://hpsafind.hrsa.gov/).

Shortages of health care providers limit consumer choice and increase costs. Health care consumers often cannot simply choose not to receive services that may be necessary for comfort or well-being, or to sustain life. Satisfactory substitutes are not available for many health services. Shortages of health care providers also increase costs, as consumers must travel longer distances or wait for longer periods of time to obtain needed services. For example, if a patient requires a total hip replacement and orthopedic services are not readily available, the patient must either travel and possibly delay care until treatment can be scheduled or suffer pain and disability.

Consumers. There may be large numbers of consumers wanting to enter the health care market who are unable or unwilling to pay the high costs. As out-of-pocket (personal) costs for health care increase, the demand for health care decreases. For example, the use of prescription drugs among the elderly tends to increase as the out-of-pocket costs decrease.
In a 2011 survey, nearly half of the respondents reported that they delay health care because of cost concerns (PwC, 2011). Uninsured Americans frequently delay or forgo health care because they are unwilling or unable to pay the out-of-pocket costs or have difficulties finding a provider (Bailey, 2012).

Health care consumers often differ from the consumer in a perfectly competitive market. As already mentioned, health care consumers may put themselves at risk of suffering or premature death if they forego health services, and they often cannot choose satisfactory substitutes for services that are not affordable. Health care consumers are often ill and unable to make fully informed decisions about health care products and services. For example, a person who is unconscious cannot choose his or her ambulance service or hospital. Even when able to make informed decisions, health care consumers must often rely on the recommendations of the physician or other provider. Concerns related to informed decisions are discussed in more detail in Chapter 2.

Products.
The goods and services produced in health care markets are often not similar or comparable. For example, a person who needs a total hip replacement requires total hip replacement surgery. As previously mentioned, many health care products are essential to health and comfort, and possibly life saving. Even if products are comparable, the consumer cannot “shop around” if seriously ill or unconscious. Health care providers are often the source of health care products by providing health care services. As a result, shortages of health care providers result in a shortage of the supply of services.

Price.
Provider and product shortages can increase the price or cost in health care markets because consumers cannot choose other satisfactory substitutes. Government payers establish nonnegotiable reimbursement rates in health care markets and generally will not pay a higher price. Health insurance complicates the impact of price, as it makes the consumer less sensitive to health care costs. Chapter 2 discusses issues related to price and insurance in more detail.

Another factor that causes health care prices to differ from competitive market prices is the lack of transparency, or information that is available about pricing. One reason for transparency problems is that health care often involves multiple providers submitting bills, such as a surgeon, an anesthesiologist, and a hospital for a patient having surgery. Another reason prices are not transparent is that there are differences in the structure of health insurance plans, such as different out-of-pocket rates. Providers also often find it difficult to predict an individual’s health care costs in advance. For example, one patient might have serious complications that greatly increase the overall costs of a procedure that is usually relatively low cost (GAO, 2011).

U.S. hospital charges (prices) often vary widely. A survey of 19 U.S. hospitals revealed that the price quoted for a full knee replacement surgery ranged from about $33,000 to $101,000 (GAO, 2011). In 2008, Medicare expenditures per beneficiary were only $6,971 in Portland, Oregon, compared with $15,571 in Miami, Florida, adjusting for age, sex, race, and price (Skinner, Gottlieb, & Carmichael, 2011). More discussion of the lack of hospital price transparency is provided in Chapter 8. The lack of health care price transparency prevents consumers from making informed choices about the costs of health services.

Supply and Demand in Health Care Markets

The quantity of health care services supplied should ideally meet the quantity of health services that consumers demand. This section presents some concepts to show how supply, demand, and price interact in theoretical competitive markets compared with health care markets.

Supply represents the quantity of a product that producers are able and willing to produce and sell at a given price over a specific time period. In competitive markets, changes in price result in changes in the quantity of products supplied. Increases in price lead to increases in the quantity supplied, as shown in Figure 1.4. This relationship between the
quantity supplied and the price was described earlier in this section, with apple growers entering the market if the price of apples is profitable. In a competitive market, as the price of apples increases, so does the quantity of apples supplied.

Supply may change based on changes in other factors, such as the costs of production. If the cost of growing apples rises considerably, then the supply of apples will drop, unless consumers are willing to pay a higher price that covers those added costs. For example, if the price of land increases, it may cost apple producers more to enter the market, so the supply of apples may decrease. The biz/ed Interactive Supply and Demand Part 2 website (www.bized.co.uk) provides interactive graphics to show the effects of price and other factors on the quantity of products supplied.

Health care markets also must cover costs of production for goods and services that are produced. However, as explained in Chapter 8, the price or charge applied to health services may be discounted by the insurance payer, or a government payer may reimburse at less than the price charged. As a result, the relationship of price to supply is not always as clear in health care markets as in purely competitive markets.

Some health providers such as hospitals engage in cost shifting to cover costs of production when the price or reimbursement is not adequate. Cost shifting occurs when a producer increases the price of a good or service to cover the costs of an unprofitable good or service. For example, a diagnostic procedure might cost a hospital $500 to perform. Medicaid might only reimburse $100 for the procedure. The hospital might set its charges higher than $500 so that private insurers cover the losses incurred from procedures reimbursed by Medicaid. Cost shifting is a strategy used in health care that is not typical in most other competitive markets.

Demand refers to the quantity of a product for which consumers are able and willing to pay at a given price over a specified time period. In competitive markets, changes in price result in changes in the quantity of products demanded. The demand curve in Figure 1.4 shows that as the price falls, the quantity of a product demanded increases. For example, if the price of apples goes up, the quantity of apples demanded by consumers goes down.

Factors other than price may change demand for products, including income. Consumers with higher incomes are not as sensitive to increases in price, so they may continue...
purchasing the same quantity of apples even if the price rises. The biz/ed Interactive Supply and Demand Part 1 website (www.bized.co.uk) provides interactive graphics to show the effects of price and other factors on the quantity of products demanded.

Health care differs from most competitive markets in that payment for many products is covered by health insurance. Insurance has the same effect as income, making the consumer less sensitive to price. Health care also differs because consumers often cannot “shop around” for the best price. Consumers may not be able to learn the price of health care products or may not know how much health care they will need to consume.

In addition, satisfactory substitutes for health care consumption are often not available. In terms of the quantity demanded, an example of substitutes is the consumer choosing to buy peaches when the price of apples rises, thus reducing the quantity of apples demanded. In other words, the price of one (substitute) product reduces the demand for another comparable product (Mankiw, 2011). In some situations, satisfactory substitutes exist in health care, such as substituting some less costly generic drugs for higher cost brand-name drugs. In many other situations, satisfactory substitutes do not exist, thus restricting perfect competition.

Because of these factors, the demand for health care services may remain unchanged or even increase as health care costs and prices increase. One example is the relatively high utilization of health care services by elderly Americans with limited incomes. Medicare coverage enables these beneficiaries to demand high-cost health care services.

Market equilibrium and disequilibrium. Under competitive market conditions, the push and pull on price between producers and consumers leads to market equilibrium. The price reaches a level satisfactory to both the buyer and the seller, and the quantity supplied equals the quantity demanded. Figure 1.4 shows the market equilibrium at the point where the supply and demand curves cross. The equilibrium price is noted as \( p^* \) and the equilibrium quantity supplied is noted as \( q^* \). However, market disequilibrium, or an imbalance between the quantity of a product supplied and the quantity demanded, is a common occurrence.

Shortage. When the market price for a product falls to a level lower than the equilibrium price, a condition of disequilibrium occurs, resulting in excess demand known as a shortage. A shortage might also occur when consumers demand a higher quantity of a product than is supplied. Figure 1.4 shows that the quantity demanded rises from \( q^* \) to \( q_1 \), resulting in a shortage. An increase in the price will increase the quantity supplied and decrease the quantity demanded, bringing the market back to equilibrium.

A recent concern in health care is the increasing number of drug shortages. In 2010, the U.S. Food and Drug Administration (FDA) reported 178 incidents of drug shortages, and this problem is expected to grow. Most of these shortages occur among generic drugs that are important for anesthesiology and cancer treatment (PwC, 2011). Generic drugs are typically sold at a lower price than brand-name drugs, which may reduce incentives to maintain their supply. To learn more about drug shortages, see the U.S. Food and Drug Administration website, Frequently Asked Questions About Drug Shortages (http://www.fda.gov/Drugs/DrugSafety/DrugShortages/ucm050796.htm).

Another example of higher demand leading to disequilibrium in health care markets is pent-up demand. One example of pent-up demand in health care markets occurs when consumers defer health care, usually for financial reasons. These people then utilize health care as soon as health coverage becomes available. Thus, large numbers of uninsured persons may cause substantial increases in health care utilization and costs at the time that they become eligible for health coverage (Damler, 2009).

Surplus. When the market price for a product rises to a level higher than the equilibrium price, a condition of disequilibrium occurs, resulting in excess supply known as a surplus. A surplus might also occur when consumers demand a lower quantity of a product than is supplied. Figure 1.4 shows that the quantity demanded drops from \( q^* \) to \( q_2 \), resulting in a surplus. A drop in the price will decrease the quantity supplied and increase the quantity demanded, bringing the market back to equilibrium.
For example, an economic downturn results in many people losing their jobs and health insurance. Fewer of these people and their families seek hospitalization for elective procedures, resulting in a surplus of hospital beds and nurses. Hospitals schedule fewer nurses and may close some nursing units in response to the lower demand. This brings the hospital market closer to equilibrium, as the quantity of hospital services drops in response to the drop in the quantity demanded. The biz/ed Interactive Supply and Demand Part 3 website (www.bized.co.uk) provides interactive graphics to show the effect demand on surpluses and shortages.

Market Failure

When markets are unable to allocate resources efficiently, the result is market failure. An example of market failure is market power, which occurs when a single buyer or seller (or a few buyers or sellers) can control market prices, so price and quantity supplied are not brought into equilibrium (Mankiw, 2011). Consumers often think of market power as unfair. From an economist’s perspective, the problem with market power is that the control over price leads to inefficiencies. Supply and demand are not in balance, so the market is in disequilibrium and resources are not allocated efficiently.

Monopoly. A monopoly occurs when a single producer has the market power to charge a price that exceeds the equilibrium price, leading to market failure (Mankiw, 2011). For example, the Federal Trade Commission (FTC) and the State of Minnesota recently took action against a pharmaceutical company that was thought to have a monopoly over the only two drugs used to treat congenital heart disease for approximately 30,000 babies each year in the United States. The company’s market power allowed it to impose a 1300% price increase when it acquired the patent for one of the two drugs, leading to the investigation (FTC, 2011).

Not all monopolies are undesirable. A natural monopoly occurs when one producer can supply a product more efficiently or at a lower cost than if two or more producers enter the market. A water purification plant is an example of a natural monopoly, as it typically has no competitors. Most communities only have one water purification plant, which is an efficient way to provide the community’s water supply. Governments may run or regulate natural monopolies, which helps ensure adequate supply and protects consumers from excessive prices (Mankiw, 2011).

Monopsony. A market with one buyer or one small group of buyers is known as a monopsony, another form of market failure (Mankiw, 2011). One example is that hospitals might exert monopsony power in the nursing labor market. For instance, a single hospital (purchaser) employing the majority of nurses in a local health care market might be able to control the wage (price) level for nurses (producers of health care). The hospital’s market power might push nurse wages below the level of a competitive market, thus creating inefficiencies.

One way that nurses and other workers address monopsony power over wages is to form a union. A union consists of a group of workers attempting to influence market power in a labor market by bargaining with the employers (Mankiw, 2011). However, unionization may push wages higher than market equilibrium, which is also inefficient.

Job mobility, which is common in the nursing profession, is another way of reducing monopsony power in nursing labor markets (Hirsch & Schumacher, 2005). The hospital monopsony might lead to a nursing shortage if nurses migrate to other hospitals that pay higher wages. The hospital may need to increase wages to attract nurses and end the shortage.

Other Health Care Economic Concepts

This section reviews some additional concepts related to health care economics. An understanding of these concepts helps nurses better understand economic forces and relationships in this chapter and throughout the textbook.

Costs. The resources or inputs required to produce goods or services are known as costs. Costs and types of costs are discussed throughout this textbook. One type of cost is a fixed
cost, or a cost that does not change with adjustments in the level of production over a specified time period. For example, a hospital’s physical plant, such as the buildings and new construction, remain fixed over a fiscal year, regardless of the number of patients admitted. **Variable costs** vary with the level of production. For example, the supplies needed to provide patient care will vary depending on the number of patients admitted to the hospital.

**Economies of scale.** Economies of scale are achieved by increasing the efficiency of production. Economies of scale occur when the fixed costs of production can be spread across a large number of products and the variable costs decrease. For example, a medical device manufacturer may be able to invest in equipment (fixed cost). The manufacturer is able to increase production as needed to fill orders for the medical device. The variable cost of materials needed to produce the devices will decrease because the manufacturer is able to purchase larger amounts of materials at a lower price. Because of the reduction in production costs, the manufacturer can charge a lower price for the medical devices while making a profit and attract more consumers to purchase the devices.

Economies of scale often occur in a natural monopoly. An enterprise such as a water purification plant has high fixed costs and low variable costs. The costs of constructing the plant (fixed costs) can be spread across all consumers who pay for a water supply, and the low variable costs have relatively little impact on the price of the water. The economies of scale, therefore, enable the water purification plant to serve a community at a reasonable price.

**Economies of scope.** In situations where the costs of production decline when two or more goods or services are produced together, the producer achieves economies of scope. Hospitals, for example, typically combine nursing care, emergency services, laboratory and radiology procedures, surgery, and other related services in one facility. This is more efficient than sending the patient to one facility for a radiology exam, another facility for surgery, and so on.

**Externalities.** Production and consumption of some goods and services may create externalities. Externalities represent costs of production that are not borne by the producer. Externalities also represent costs of consumption that are not paid for by the consumer. **Positive externalities** are benefits to a third party that result from production or consumption. For example, widespread immunization often results in “herd immunity,” or protection from the disease of persons who were not immunized.

**Negative externalities** or risks and problems borne by third parties from production or consumption may raise serious concerns. A factory may release lead, which is ingested by young children. However, these children and their families often bear the costs of lead exposure, rather than the factory owner. Tobacco consumption not only creates health risks for the consumer, but also for those exposed to environmental tobacco smoke, yet the tobacco consumer is not expected to pay for the health risks to those exposed individuals.

**Government and Competitive Markets**

The government may become closely involved in the operations of competitive markets. For example, government defines and enforces rights, including property rights, and maintains law and order so that markets can effectively function. The commonly accepted medium of exchange, money, is established by government, which is essential as a measure of price and cost. As nearly half of all health care in the United States is funded by federal, state, or local agencies, it is important to consider the role of government in the health care market.

**Nonprofit and government providers.** In most industries, firms operate as for-profit entities. In health care, there is a mix of for-profit, nonprofit, and government institutions with various financing mechanisms. Nonprofit hospitals and public hospitals often provide less profitable services, such as Level 1 trauma units (Harrison & McLane, 2005). Nonprofit institutions are allowed tax exemptions in return for services provided to the community, but nonprofits must still earn a profit in order to survive and grow. Government institutions are
funded by tax dollars and must operate efficiently in order to maximize scarce resources. As a result, the health care industry must balance ethical values with the need to generate profits.

Public goods. One approach to market failure is government’s production of public goods, or goods that are collectively consumed and relatively inexhaustible and nonexclusive. Safe drinking water and sewage systems are examples of public goods, which are not profitable to produce in a competitive market, yet are of considerable value to society. In some cases, the provision of public goods may be influenced by market conditions. For example, a remote, rural area may require government support to provide a community hospital as a public good. In urban areas, market competition may support the provision of hospital services.

If a government provides a public good, the public often has free access to the good. People may be able to use the public good without paying, for example, the use of public highways by persons who do not pay taxes to support that highway. In some cases, eligibility is required to use the public good. For example, all school-age children are eligible to attend public schools.

The quantity of a public good that consumers demand depends on its value. For example, a community may support the maintenance of high-quality schools that reflect the value placed on public education. The production of a public good depends on the society’s willingness to pay, typically through the imposition of fees and taxes. It is assumed that the residents of communities who value public education are willing to pay taxes to support this public good.

Free-rider problem. One potential concern about the provision of public goods is the free-rider problem, or when shortages of a product occur because consumers have access to the product but are not required to pay for the product. An example is allowing persons to obtain care at a free clinic who are able to afford clinic services. The use of clinic services by these free riders may increase waiting times and make it more difficult for others to get care at the clinic. Eligibility criteria help to limit the free-rider problem. Imposing taxes and user fees requires consumers who benefit from public goods to contribute to support those public goods.

Income redistribution. Governments may mandate income redistribution, transferring income from one group to another based on established criteria. For example, persons below an established poverty line may be able to obtain welfare assistance, paid for by taxing wealthier citizens. Concerns about free riders lead to eligibility requirements and limitations to these benefits.

Regulation. Other government functions include regulating producers to protect consumer safety, such as requiring that all motor vehicles are equipped with seat belts. Regulations may also be developed to reduce or control negative externalities, such as factory emission of air or water pollutants. These regulations often pose trade-offs between consumer or environmental interests and market efficiency. As a result, producers may oppose government regulation.

Taxation. In order to pay the costs of public goods, the enforcement of regulations, income distribution, and other functions, government must levy taxes. Producers often see taxes as inhibiting the competitive market and therefore oppose taxation. Taxes are also politically unpopular with many Americans. American culture strongly supports individualism and the rights of business to be competitive and profitable. These factors influence the economics and financing of health care in the United States.

Values, culture, and politics. Ethical values affecting health care policies and financing are not limited to questions about profitability. Political and ethical controversies regarding issues including reproductive health care and end-of-life planning affect decisions about resources and access to services. In some cases, states have the power to limit eligibility or funding for services, causing geographic variation in government programs such as Medicaid. In other cases, individuals require modification of services related to their
religious or cultural beliefs. These ongoing political and cultural concerns influence government interventions in health care.

**ECONOMICS AND THE NURSING WORKFORCE**

Nurses are participants in the health care economy. Nursing costs are frequently the largest source of labor costs for hospitals, and, in many hospitals, nursing is the largest part of the total budget (Douglas, 2010). As employees in health care agencies and institutions, nurses make up a labor market that is influenced by economic forces. This section provides some examples linking economic concepts to the nursing workforce.

**Wages and labor supply.** Note that, in labor markets, employees are the suppliers of services, and wages represent the price of those services. As a result, wages influence the supply of labor in labor markets. For example, in the nursing labor market, nurses are the suppliers, and wages represent the price of nursing care. As a result, increasing nurse wages would be expected to increase the supply of nurses. In many cases, employers are not able or willing to increase wages, so nursing shortages may occur.

**Costs and labor supply.** In labor markets, the costs of education and training may decrease the supply of labor. Opportunity costs include the time required for education and training, as well as waiting lists if there are shortages in the availability of educational or training programs. If resources such as scholarships or paid internships are available, the costs of education and training are reduced. Reasons for the shortage of doctorally prepared nurses include the high financial and opportunity costs for graduate nursing education. In addition, the market may change over the time student nurses receive their education. New graduate nurses who began their education during a nursing shortage may enter a market that is now experiencing a nursing surplus.

**Alternative labor markets.** Alternative labor markets increase the overall demand for the workers in those labor markets. Hospitals are traditionally the largest employers of nurses. However, if changes in health care require that more patients require follow-up care in the home, the demand for home health nurses will increase. Increasing home health wages closer to the level of hospital wages will likely attract some hospital nurses to home health agencies, as both hospitals and home health agencies compete for the supply of nurses. The demand from the alternative labor market, home health, will increase the overall demand for nurses.

**Productivity and labor demand.** Increasing worker productivity expands output while reducing the inputs required, thus increasing production efficiency. If increasing productivity results in the satisfactory care of more patients per nurse, then fewer nurses are required and the demand for nurses will decrease. The labor-intensive nature of inpatient settings may increase the demand for nurses in acute care, even though the numbers of inpatients may remain the same or decrease.

**Substitutes and labor demand.** As in other markets, in the labor market satisfactory substitutes may reduce the demand for nurses. If nurse assistants are as productive as RNs, the nurse assistants are less costly and may be used as substitutes for RNs. The demand for RNs may therefore decrease compared with nurse assistants. MLPs such as nurse practitioners may serve as “physician extenders,” substituting for the primary care physician. In some health care settings, resources such as equipment might be substituted for labor. For example, telemonitoring technologies may enable more patients to remain in their homes, with fewer nurses needed to manage these patients in the hospital.

Note that barriers to entry often reduce the use of substitutes in health care settings. Regulations regarding professional scope of practice and quality concerns may reduce the amount of substitution of one health care worker for another. However, in settings such as long-term care, nurse assistants may be employed in higher numbers than RNs. In rural or
other underserved areas, nurse practitioners may provide primary care that is not available from primary care physicians.

*Derived demand for labor.* The labor market for nurses is based on derived demand, or the quantity of labor or other products demanded for the sake of an ultimate output. As much as patients may like their nurses, the actual reason patients demand hospital care is to protect and improve their health and well-being. Nurses are needed (demanded) to provide hospital care. If the demand for hospital care decreases, demand for acute care nurses will likely decrease accordingly.

*Nursing shortages and surpluses.* Remember that increasing nursing wages and decreasing nurse education and training costs are ways to increase the nursing supply and address nursing shortages. Nursing surpluses result when the quantity of labor supplied is greater than the quantity demanded. Job mobility helps address nursing surpluses, because while one local area may be oversupplied with nurses, other communities may suffer nursing shortages and have ample employment opportunities available. The continued aging of the U.S. population and increased use of labor-intensive health care technologies makes it likely that nursing shortages will be more of a problem in future years than nursing surpluses.

*Profitability and reimbursement.* Increasing reimbursement and profitability increases the quantity of labor demanded. As the reimbursement for health care increases, more resources are available to employers to expand programs and staffing, so the demand for nurses may increase. If reimbursement decreases, health care programs and staffing may contract, thus reducing the demand for nurses. However, quality concerns and regulations such as nurse-to-patient ratio laws limit the extent to which many health care employers can reduce their demand for nurses.

*Events.* The state of the overall U.S. economy affects trends in the nursing workforce. During economic downturns such as the recession that began in December 2007, more nurses seek employment, so that in some areas of the country there is a nursing surplus. Many part-time nurses find full-time work when overall national unemployment is high, to help their families during times of economic difficulty. When the overall rate of unemployment in the United States falls, nurses are more likely to leave the workforce, increasing the likelihood of nursing shortages. Researchers predict that as the U.S. economy improves over the next few years, and as nurses in the Baby Boomer cohort retire, the country will face a shortage of RNs (Staiger, Auerbach, & Buerhaus, 2012).

Other planned and unplanned events increase or decrease the quantity supplied or demanded in nursing labor markets. Laws requiring mandatory nurse-to-patient ratios increase the demand for hospital nurses. Changes in immigration requirements for foreign nurses, making it easier to find jobs in the United States, increase the supply of nurses. The aging nursing workforce is anticipated to decrease the supply of nurses and contribute to a potential nursing shortage over the years to come. The shortage of nursing faculty also contributes to potential nursing shortages as the faculty shortage limits the enrollment of nursing students.

**CONCLUSION**

This chapter introduces the topic of health economics by reviewing the historical context of financing health care and nursing services. Principles of economics and competitive markets are applied to the health care market. It is important to remember that health care markets are often not purely competitive, and that many factors other than economic forces influence health care economics and financing. This historical and economic context provides implications for nurse employment and wages. These concepts also provide background for understanding the principles of insurance and managed care, presented in Chapters 2 and 3.

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Discussion and Exercises

1. List events in your work setting (or a health care setting of interest) that shift the quantities demanded and supplied of the goods or services produced. What is the impact on consumers (patients and families)?

2. Try drawing supply and demand curves for what you believe is the labor market for nursing in your local area. Is the market in a competitive equilibrium—for example, are wages in balance with the quantity of health workers supplied and demanded, so neither shortages nor surpluses are a problem? If there is market failure, what would you propose to return the market to competitive equilibrium?

3. What do you believe are the most important reasons for cost increases in health care? Compare and contrast your ideas about health care costs with other students, using evidence (statistics and literature) to support your views.

REFERENCES


CROSSWORD: Chapter 1—Economics

Across
1  The quantity of a product for which consumers are able and willing to pay at a given price over a specified time period.
3  Resources and raw materials needed for production.
6  Resource or expense required as input to produce goods or services.
8  Making information available, such as health care pricing.
11 When one party has control over production, thus controlling price.
12 A group of workers attempting to influence market power in a labor market by bargaining with the employers.
14 A group of buyers and sellers of products such as goods and services.
15 Excess supply resulting from the market price for a product rising to a level higher than the equilibrium price.
16 A product that is similar to and reduces demand for another product.

Down
2 Costs of production not borne by the producer, or costs of consumption not paid for by the consumer.
4 Maximizing the production or value of goods or services while minimizing the resources or costs required for production.
5 When one party has control over consumption of a product, thus controlling price.
7 The quantity of a product that producers are able and willing to produce and sell at a given price over a specific time period.
8 Activities, processes, or work applied to inputs in order to achieve outputs.
9 Excess demand resulting from the market price for a product falling to a level lower than the equilibrium price.
10 Business agreements or practices that restrict free trade and are often illegal.
13 Goods, services, or other outcomes produced from inputs and throughputs.