CHAPTER

1

UNDERSTANDING AND MANAGING COMPLEX HEALTHCARE SYSTEMS

DEFINITIONS

Juliet.

. . . What's in a name? That which we call a rose
By any other word would smell as sweet . . .

—William Shakespeare, *Romeo and Juliet*, Act 2, Scene 2

Anyone who can set the terms of a debate can win it.

—Attributed to George Edward Reedy, White House press secretary under U.S. President Lyndon B. Johnson

Before we try to understand how healthcare systems are structured and function, we need to consider some definitions. First, how do we define the word "health"? The answer is important because it frames such decisions as our population focus for care, how we design facilities, how we train our professionals and ancillary personnel, how we develop new technologies, and how we structure insurance products. Unfortunately, many societies (including the United States) define health in terms of the absence of disease and focus on acute care as their model of what society should provide.[1] This view about the meaning of health is strikingly obvious if one compares self-reported health status to objective measures, such as life expectancy. For example, in a survey of 37 countries, Japan's ranking for self-reported health is 36th and the United States is first. However, Japan's life expectancy ranks first while the United States ranks 27th.[2]

Since health is often viewed as an absence of some type of bodily derangement, we first need to define three terms: illness, disease, and sickness. Dictionaries often provide circular definitions for these three terms, but it is useful to distinguish among them for purposes of addressing the healthcare issues just mentioned. The most helpful explanations were written by Marinker[3] more than 40 years ago:

> [Disease is] a pathological process, most often physical as in throat infection, or cancer of the bronchus, sometimes undetermined in origin, as in schizophrenia. The quality which identifies disease is some deviation from a biological norm. There is an objectivity about disease which doctors are able to see, touch, measure, smell.
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> [Illness is] a feeling, an experience of unhealth which is entirely personal, interior to the person of the patient. Often it accompanies disease, but the disease may be undeclared, as in the early stages of cancer or tuberculosis or diabetes. Sometimes illness exists where no disease can be found. Traditional medical education has made the deafening silence of

[1]Fox, E. (1997). Predominance of the curative model of medical care: A residual problem. *JAMA*, *278*, 761–763.
[2]OECD Better Life Index. Retrieved March 28, 2018 from http://www.oecdbetterlifeindex.org/topics/health.
[3]Marinker, M. (1975). Why make people patients? *Journal of Medical Ethics*, *1*(2), 81–84.

> illness-in-the-absence-of-disease unbearable to the clinician. The patient can offer the doctor nothing to satisfy his senses—he can only bring messages of pain to the doctor . . . The traditional remedy for this distress (I am of course talking about the distress of the doctor and not the distress of the patient) is to translate the illness language of diseases that do not require objects available to the doctor's eyes, ears or hands. I am talking about psychiatric language.
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> [Sickness is] the external and public mode of unhealth. Sickness is a social role, a status, a negotiated position in the world, a bargain struck between the person henceforward called "sick," and a society which is prepared to recognize and sustain him. The security of this role depends on a number of factors, not least the possession of that much treasured gift, the disease. Sickness based on illness alone is a most uncertain status. But even the possession of disease does not guarantee equity in sickness. Those with a chronic disease are much less secure than those with an acute one; those with a psychiatric disease than those with a surgical one. The diseases of the old are less highly regarded than those of the young; I do not dare to suggest that diseases of women are inferior to those of men. Best is an acute physical disease in a young man quickly determined by recovery or death—either will do, both are equally regarded.

Given these definitions of disorders, we can now consider the definition of "health." According to the World Health Organization (WHO): "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."[4] It is obvious that a policy focus on *this* definition will yield different priorities than a policy that relies on the ones above.

These definitions invite the question: What *are* the priorities of the U.S. healthcare system? In other words, what is its mission? After reading the examples in Exhibit 1.1, it should be obvious that one of the principle problems is that the United States does not have a mission statement that guides health policy.

EXHIBIT 1.1. Examples of Mission Features for Healthcare Systems

1. *Universal Declaration of Human Rights*. Adopted and proclaimed by U.N. General Assembly Resolution 217 A (III) of December 10, 1948 Article 25. (1): Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.
2. *National Health Service*. When former British Prime Minister Gordon Brown was Chancellor of the Exchequer, he said that taxation to fund healthcare is fair compared to:

   User Charges. "[I]t does not charge people for the misfortune of being sick."

   Private Insurance. It "does not impose higher costs on those who are predisposed to illness, or who fall sick."

   Social Insurance. "[I]t does not demand that employers bear the majority burden of health costs."[a]

[4]Constitution of WHO: principles. Retrieved March 28, 2018 from http://www.who.int/about/mission/en

3. Policy and administrative objectives for Canadian healthcare.

   Public Administration. The provincial and territorial plans must be administered and operated on a nonprofit basis by a public authority accountable to the provincial or territorial government.

   Comprehensiveness. The provincial and territorial plans must insure all medically necessary services provided by hospitals, medical practitioners and dentists working within a hospital setting.

   Universality. The provincial and territorial plans must entitle all insured persons to health insurance coverage on uniform terms and conditions.

   Accessibility. The provincial and territorial plans must provide all insured persons reasonable access to medically necessary hospital and physician services without financial or other barriers.

   Portability. The provincial and territorial plans must cover all insured persons when they move to another province or territory within Canada and when they travel abroad. The provinces and territories have some limits on coverage for services provided outside Canada, and may require prior approval for non-emergency services delivered outside their jurisdiction.

   Also: Efficiency, Value for Money, Accountability, and Transparency[b]

4. Principles of the Servizio Sanitario Nazionale (Italian National Health Service)

   Human Dignity. Every individual has to be treated with equal dignity and have equal rights regardless of personal characteristics and role in society.

   Protection. The individual health has to be protected with appropriate preventive measures and interventions.

   Need. Everyone has access to healthcare and available resources to meet the primary healthcare needs.

   Solidarity. Available resources have to be primarily allocated to support groups of people, individuals and certain diseases that are socially, clinically and epidemiologically important.

   Effectiveness and Appropriateness. Resources must be addressed toward services whose effectiveness is grounded and individuals that might especially benefit from them. Priority should be given to interventions that offer greater efficacy in relation to costs.

   Equity. Any individual must have access to the healthcare system with no differentiation or discrimination among citizens and no barrier at the point of use.[c]

[a] From speech given at the Social Market Foundation in London on March 20, 2002. At: http://www.ukpol.co.uk/2016/01/page/22/

[b] Canada Health Act and Commission on the Future of Healthcare in Canada, 2001, Romanow Report. https://www.canada.ca/en/health-canada/services/health-care-system/reports-publications/health-care-system/canada.html#a4

[c] http://www.salute.gov.it/portale/salute/p1_4.jsp?lingua=italiano&area=ll_Ssn

We can even go further in this analysis if we consider a definition for a healthcare *system* that will deliver those services and products for our desired goals.

When we turn to the definitions of "system" in Exhibit 1.2, the sense is of an orderly whole, working synchronously for a common purpose or, hopefully, positively influencing other parts.

EXHIBIT 1.2. Definition of System

According to the *Oxford English Dictionary,* a system is

- A set or assemblage of things connected, associated, or interdependent, so as to form a complex unity; a whole composed of parts in orderly arrangement according to some scheme or plan; rarely applied to a simple or small assemblage of things.
- An organized scheme or plan of action, especially one of a complex or comprehensive kind; an orderly or regular method of procedure.

According to the British Journal of Sociology,

- The idea of "system" has been used to imply that its parts (organizations or institutions) are interdependent with each other: that the performances of the parts have consequences or functions, consequences for the "performing" part, consequences for other "parts," consequences for the whole system.

Roemer[5] explained a further ideal:

> The term *health system* or *system of health care* has been used with different meanings. Anthropologists use the terms systems of medicine to refer to various practices for healing the sick, according to diverse religious, philosophical, magical, and empirical doctrines. Many health observers analyzed the prevailing patterns of personal medical care in a country, defining these as the country's *health care system*. Government officials may describe the structure and functions of a country's ministry of health as its health system . . . we regard a health system as the *combination of resources, organization, financing, and management that culminate in the delivery of health services to the population*. (Emphases added.)

In contrast to this ideal, however, an accurate description of the U.S. healthcare system might be: an apparently ad hoc arrangement of small units, each with its own goals and incentives, whose purpose is treatment of acute diseases of insured populations. The deficiencies of focus, common purpose, and universality have significant implications for such tasks as structuring health insurance, building delivery organizations, designing continuity of care programs, aligning financial incentives, and choosing appropriate quality measures, among others.

The WHO provides a useful definition of a *healthcare system* as one that "encompasses all the activities whose primary purpose is to promote, restore, or maintain health . . . and include[s] patients and their families, health care workers and caregivers within organizations and in the community, and the health policy environment in which all health related activities occur."[6]

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[5]Roemer, M. I. (1991). *National health systems of the world* (Vol. *1*, pp. 3, 4, 31). New York: Oxford University Press.
[6]WHO. (2002). *Innovative care for chronic conditions: Building blocks for action: Global report*, p. 29. Retrieved from http://www.who.int/chp/knowledge/publications/icccglobalreport.pdf

The word "system" will be used in future references to refer to healthcare schemes that have varying degrees of internal consistencies and coordination with one another.

One final consideration is not a definition per se but defining the elements that comprise a healthcare system. Simply stated by Sir Michael Marmot: "Every sector is a health sector."[7] This relationship is presented graphically in Exhibit 1.3. While the interrelationships among

EXHIBIT 1.3. Factors Influencing Healthcare Systems

Source: Adapted and reprinted with permission of the Health Equity Institute, San Francisco State University. Retrieved March 30, 2018 from https://healthequity.sfsu.edu

[7]The original statement comes from M. Marmot (2005). Social determinants of health inequalities. *Lancet*. 365, 1099–1104. "A burgeoning volume of research identifies social factors at the root of much of . . . inequalities in health. Social determinants are relevant to communicable and non-communicable disease alike. Health status, therefore, should be of concern to policy makers in every sector, not solely those involved in health policy." Subsequently, Marmot shortened this assertion in a number of presentations, the earliest of which is perhaps: Taking forward action of the social determinants of health: WHO Commission on the Social Determinants of Health. Madrid, May 28, 2009. Retrieved from https://www.msssi.gob.es/profesionales/saludPublica/prevPromocion/promocion/desigualdadSalud/docs/presentacionEquidad.pdf

all these elements is extremely important, the scope of this book is limited to the healthcare inputs of such elements as provider and supplier organizations, professionals, and financing mechanisms.

HEALTH SYSTEM STRUCTURE AND FEATURES

First Lord.

The web of our life is of a mingled yarn, good and ill together . . .

—William Shakespeare, *All's Well That Ends Well*, Act 4, Scene 3

Deciphering the structure of any country's healthcare system can be a daunting and confusing task. Most approaches to understanding these complex systems use only the limited perspectives of economics and/or politics.[8] These approaches, however, often fail to include such important considerations as culture, politics, and underlying national demographics.

Exhibit 1.4 provides these additional dimensions in a systematic way to help you understand any nation's healthcare system. While this format may lead to some redundant questions and answers, it also ensures that you will not miss key aspects of a system. In order to better explain the use of this framework, some sample questions and comments

EXHIBIT 1.4. Features of Healthcare Systems

Domains for Analysis	Who Pays?	How Much Is Paid? (Costs/Budgets)	Who/What Is Covered?	Where Is Care Provided?	Who Provides Services and Products?
Political/regulatory/ judicial	1	6	11	16	21
Economic	2	7	12	17	22
Social/cultural	3	8	13	18	23
Technological	4	9	14	19	24
Population characteristics-demography and epidemiology	5	10	15	20	25

Source: Shalowitz, J. (2008). In P. Kotler, J. Shalowitz, & R. Stevens. *Strategic marketing for health care organizations: Building a customer-driven health system*. San Francisco: Jossey-Bass.

[8]Two classic views are those of Odin Anderson (Anderson, O. W. [1972]. *Health care: Can there be equity?* New York: Wiley) and Milton Roemer (Roemer, M. I. [1985]. *National strategies for health care organization*. Ann Arbor, MI: Health Administration Press).

for each numbered cell are presented. Users of this model are encouraged to ask additional questions and adapt its use to specific circumstances.

Who Pays?

Cell 1. Political/Regulatory/Judicial. The first question you can ask is: Where does the power reside to make decisions about payment for healthcare services and products? The answer depends on the degree of centralization or decentralization of the system. In the United States, except for strictly federal programs like Medicare, regulatory authority for health insurance resides at the state level. Even in countries with national health programs, there is often a regionalization of healthcare payment and delivery. For example, Canadian provinces and territories regulate their health insurance plans. (References to Canadian provinces below are also meant to include territories.) At the other extreme of local control, governmentally run healthcare systems in Sweden and Finland are managed at the level of municipalities.

Another question concerns the extent to which the public or private sectors pay for healthcare. In the United States, private insurance companies are largely responsible for healthcare payments. Most of this private insurance is purchased through employer and employee contributions at the workplace. At the opposite end of the spectrum is Cuba, where the entire healthcare system is publicly financed. Between these two limits there are a large number of variations. For example, in Canada, private insurance can provide coverage only for products and services that are not furnished by the provincial health insurance plans. In Chile, employees have the option to use the mandatory tax on wages to buy into either the state-sponsored health insurance plan (FONASA) or a private insurance company (ISAPRE). In yet another example, workers in Argentina (who purchase their health insurance with mandatory payroll deductions from their union) must use after-tax money if they want to enroll in a private insurance plan.

In all healthcare systems, private insurance can take on one of four roles vis-à-vis public insurance:

1. *Duplicate*. Public and private systems exist in parallel and cover same benefits (Chile)
2. *Substitute*. Private system replaces public system for certain population sectors (Germany)
3. *Complement*. Private system provides benefits the public sector does not cover (Canada)
4. *Supplement*. Private system extends benefits of the public sector in extent and/or payment (U.S., Medicare)

Cell 2. Economic. The state of a country's economy can also determine who pays for products and services, shifting the balance between government and private sources, such as employers and individuals. For example, in the 1990s, when the U.S. economy was rapidly expanding, many companies provided rich healthcare benefits for their employees. During the subsequent economic downturn, however, companies shifted more of the responsibility for payment to their workers. This pattern repeated itself after the market crash of 2008.

When the public sector is largely responsible for financing healthcare, during bad economic times it may withdraw considerable support, leaving individuals to shoulder substantial financial responsibility. Extreme examples of this latter situation are rural China and parts of the former Soviet Union. The opposite situation may also apply: When the economy is performing well and healthcare costs are rising, government often looks to increasing individual payments or enhancing the role of the private sector.

Cell 3. Social/Cultural. The social/cultural characteristics of a country can ultimately determine the mechanisms and sources of payment. In essence, these factors shape a country's healthcare "mission statement." (Please see Exhibit 1.1 and the Definitions section above.)

It is often difficult to determine which dimensions of culture are the most important in shaping a country's healthcare system. For purposes of comparing systems, however, analyzing measurable differences in culture can provide some guidance about which other countries may provide practical models for adoption. The most useful framework for such measurements is summarized in Exhibit 1.5. To demonstrate its utility, consider these two examples. Some American policy analysts advocate adoption of a Canadian model for the U.S. healthcare system; however, the two countries have substantial cultural differences. Specifically, the United States is distinguished from other countries as being the most individualistic nation. A pluralistic system with standard benefits is, therefore, not compatible with American culture.[9] Second, as Finland looks to other healthcare models for reform, it naturally studies Sweden. These countries share history (Finland was part of Sweden from the Middle Ages until 1809), language (Swedish is Finland's second official language), and structure of healthcare systems (Sweden and Finland base their systems at the municipal level). Also, in several cultural dimensions, Finland is similar to other Scandinavian countries. One important difference, however, is in the uncertainty avoidance index. Using this measure, Finland is very different from all other Scandinavian countries and is closer to Germany and Switzerland. If this dimension proves to be the most important cultural feature with respect to healthcare, the implication is that Finland needs to look to these latter two countries rather than (or in addition to) Sweden for healthcare system model reform. In fact, the recent Finnish reform proposal looks more like the Swiss system than that of Sweden.

Cell 4. Technological. In this context, technology incorporates drugs, devices, and procedures that are used in healthcare settings. The two key questions we must ask are: Who approves new technology? *and* How closely are safety and efficacy evaluations combined with cost considerations in determining whether a technology is approved and used? For example, in the United States, the Food and Drug Administration (FDA) will determine whether a pharmaceutical is safe and efficacious. This decision is totally independent of: (a) whether there are many similar pharmaceuticals in the same class already available in the marketplace or (b) if the newly approved drug is much more costly than similar ones, given

[9]For other views of cultural differences between the United States and Canada, see Adams, M. (2003). *Fire and ice: The United States, Canada and the myth of converging value*. Toronto: Penguin Canada.

EXHIBIT 1.5. Definition of Culture

According to Hofstede,[a] culture is defined "as the collective programming of the mind that distinguishes members of one group or category of people from another . . . culture is the human collectivity what personality is to an individual."

Dimensions of Culture (from Hofstede)

Power distance. The extent to which the less powerful members of institutions and organizations within a country *expect* and *accept* that power is distributed unequally.

Uncertainty avoidance. The extent to which the members of a culture feel threatened by uncertain or unknown situations.

Individualism/collectivism. Individualism stands for a society in which the ties between individuals are loose: Everyone is expected to look after him-/herself and her/his immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty.

Masculinity/femininity. Masculinity stands for a society in which social gender roles are clearly distinct: Men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life. Femininity stands for a society in which social gender roles overlap: Both men and women are supposed to be modest, tender, and concerned with the quality of life.

Long-term orientation. The fostering of virtues oriented toward future rewards, in particular, perseverance and thrift. Its opposite pole, short-term orientation stands for the fostering of virtues related to the past and present, in particular, respect for tradition, preservation of "face," and fulfilling social obligations.

[a] Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Thousand Oaks, CA: Sage.

equivalent benefits. Contrast the FDA approval process with England's National Institute for Healthcare and Clinical Excellence (NICE). The NICE approves pharmaceuticals based not only on safety and efficacy but also on cost-effectiveness. This disparity exists principally because, in the former case, the U.S. federal government does not directly pay for most pharmaceuticals, whereas the British government does have such fiscal responsibility. Even for the United States' Medicare insurance scheme for pharmaceutical payment (Part D), the federal government has repeatedly decided not to bargain directly with pharmaceutical companies.

Once the technology is approved, who pays for it depends on site of use. For example, in the United States, patients with private health insurance usually share the cost of outpatient self-administered pharmaceuticals with the insurance company; for inpatient medications, however, the insurance company pays the hospital a negotiated rate that includes those items. By contrast, in Ontario, while hospital medications are fully covered through governmental

payments, most individuals pay out of pocket for self-administered pharmaceuticals unless they have private insurance to cover that expense.

Cell 5. Population Characteristics. Demographic characteristics of the population will also determine who pays for products and services. For example, one of the key questions facing many countries is how they will care for their growing elderly populations. Who will pay for their care? How much will the elderly be expected to contribute themselves and how much will the public sector finance? While the United States is not among the world's most rapidly aging countries, due largely to past immigration policies, many other developed countries are facing changing demographics where covering elderly costs cannot be easily shifted to a young, working population.

How Much Is Paid?

Cell 6. Political/Regulatory/Judicial. In most countries, the political process is the origin of public healthcare budgets and fee schedules. Even in the United States, where most care is provided by the private sector, government-set global fees for hospitals (diagnosis-related groups [DRGs]) and per-service fees for physicians (resource-based relative value scale [RBRVS]) have been adopted by the private sector as benchmarks for paying those providers. (More will be said about those methods in later chapters.)

An example of judicial influence on costs comes from the debate on so-called gray markets for pharmaceuticals—the practice of importing drugs from lower-cost countries into higher-cost countries. While this issue has garnered much press and congressional attention in the United States (particularly with respect to importation of drugs from Canada), in Europe it has also been addressed by the European Union (EU) courts, where such practices were found to be legal.

Cell 7. Economic. Although politics will frame the debate about how much a country will spend on public programs, overall spending is most directly correlated with the state of a country's economy. Data from the Organisation for Economic Cooperation and Development (OECD) has consistently shown that globally, the highest correlative factor for per capita healthcare spending is gross domestic product (GDP) per capita.[10] (R^2 varies by year but averages about 0.9.) However, the United States is a conspicuous outlier, spending much more than the model predicts. The reason for this discrepancy is that prices have been higher than in other countries.[11] Another factor in this category is how much the government shifts payment responsibility to individuals. Not only do out-of-pocket amounts for each service vary widely by country, but so do the limits for how much an individual can be at financial risk. For example, in the United States, an individual covered by Medicare has unlimited financial responsibility for healthcare expenses beyond those covered by that program. In contrast, many countries put an upper limit on these amounts.

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[10]OECD (2017), Health at a glance 2017: OECD indicators, OECD Publishing, Paris. doi: 10.1787/health_glance-2017-enRetrieved

[11]Papanicolas, I., Woskie, L. R., & Jha, A. K. (2018). Health care spending in the United States and other high-income countries. *JAMA 319*(10), 1024–1039.

Cell 8. Social/Cultural. Given the political and economic determinants for healthcare budgets, the social and cultural characteristics of a country lay the groundwork for what is possible regarding such factors as the government's role in providing healthcare benefits, extent of government support, types of services covered by insurance (both public and private), and relative amounts of payments. For example, in the United States, procedures are valued relatively more than cognitive services and hence are paid at higher rates. By contrast, in Sweden, the government raised caretaker salaries when it recognized the need for higher-quality workers in the long-term care sector.

Cell 9. Technological. As mentioned above, countries other than the United States consider the cost of technology along with its efficacy. Depending on the country, this cost analysis may occur simultaneously with the safety and efficacy evaluation or subsequent to it. Examples of some pharmaceutical pricing frameworks and cost-containment strategies are explained in Chapter 7, "Healthcare Technology."

Once the technology is approved and budgeted, its effect on healthcare costs can be determined by answering the question: How much does technology add to the cost of care as opposed to helping reduce overall expenses? One of the most significant factors contributing to rising healthcare costs across many countries is expenses related to new technology. This new technology is, by and large, layered on to the old technology rather than replacing it. A good example is balloon angioplasty and stenting of narrowed coronary arteries. These relatively less invasive techniques were supposed to replace many coronary artery bypass surgeries; in fact, the overall effect was to add a large number of patients who would not have been eligible for the latter procedure. In contrast, introduction of medication to treat peptic ulcer disease has all but eliminated surgery for that condition.

Cell 10. Population Characteristics. Demographic characteristics of the population will also determine who pays for products and services. For example, as mentioned above, one of the key questions facing many countries is how they will care for their growing elderly populations. Who will pay for their care? How much will the elderly be expected to contribute themselves and how much will the public sector finance?

Who and What Is Covered?

Cell 11. Political/Regulatory/Judicial. The political process plays a significant role in determining who will be covered and what healthcare benefits they will receive. For example, although all Canadian citizens are covered by government-sponsored insurance, the exact benefits vary by province. In the United States, examples in this category include state laws (called *mandates*) that require health insurance companies to offer certain benefits to their members. The Affordable Care Act (ACA) and Medicaid rules list categories of essential health services that must be covered by federally sanctioned plans, but the details are left to the states.

Cell 12. Economic. In addition to determining the amount of money allocated for the healthcare system, the economic climate will also determine what benefits are offered. In good economic times benefits may be added, but during downturns even government benefits

may be withdrawn. For example, over several years of an economic pressure, Medicare limited the number of physical therapy visits; unlimited use was only reestablished in 2018.

Cell 13. Social/Cultural. These factors can have an important impact on whom and what is covered by public and private systems. For example, when economic conditions required benefit cutbacks in Germany, one of the most contentious programs that was eliminated was spa care—long a staple of that country's healthcare system. In the United States we would never consider eliminating pregnancy benefits; however, Japanese insurance usually does not cover such services.

Cell 14. Technological. The influence of technology in terms of coverage can be assessed by answering the following two questions: What technologies are lifesaving, life enhancing, or lifestyle enhancing *and* How are these technologies prioritized? An example is the U.S. government's decision to exclude drugs for erectile dysfunction as a covered benefit for Medicare's prescription drug plan (Part D).

Cell 15. Population Characteristics. Which populations require healthcare will also determine who or what is covered. The dilemma is: To what extent should the healthcare system focus on those with acute illnesses, those with chronic disease, and/or those who should receive preventive services? At this point, demographics intersect with epidemiology, and "what is covered" needs to reflect population disease patterns. For example, according to the Centers for Disease Control and Prevention (CDC), the leading causes of death in the United States are diseases of the heart, cancers, and chronic lower respiratory diseases.[12] Should we devote significant resources to treating these conditions or preventing them? Should we instead allocate these resources to other conditions that affect younger people, like accidents and mental illness?

Where Is Care Provided?

Cell 16. Political/Regulatory/Judicial. Governments may enact laws to ensure appropriate access to healthcare. These laws can promote establishment of healthcare facilities (e.g., by providing funding for community health centers) or restrict formation in areas of overabundance (e.g., by imposing certificate of need requirements for building or expanding hospital facilities). Other laws that affect access address portability of coverage across jurisdictions. For instance, the EU's courts have confirmed the rights of its citizens to obtain healthcare across the borders of member nations. In Canada, portability of coverage is guaranteed by the Canada Health Act. Another way access is guaranteed is through mandates for treatment. In the United States, the Federal Emergency Medical Treatment and Active Labor Act of 1986 (EMTALA) requires that a hospital with an emergency department provide "an appropriate medical screening examination" to any patient who "comes to the emergency department" for examination or treatment. Further, the emergency department (and hospital, in general) must provide ongoing care until the patient's condition is stabilized. It is important to note that the

[12]CDC. *Leading causes of death*. Retrieved March 31, 2018 from https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm

patient's insurance coverage status is not a factor that hospitals can take into consideration in accepting the patient for treatment.[13]

Cell 17. Economic. In countries with both public and private healthcare systems, during times of economic expansion, payers allow patients to receive care at and from nearly any licensed facility and provider. During more challenging economic times, however, payers tend to be more selective about where patients can receive their care. The example that epitomizes this concept is managed care, whereby a select group of primary care physicians will provide and coordinate services for members of such plans. This principle overlaps with the "who provides care" question below.

Cell 18. Social/Cultural. These considerations also have a strong influence on where care is provided. For example, many communities want a local hospital, even though regionalization would make more economic sense with respect to economies of scale. Also, in the United States, health insurers recognize that providing customers with freedom of choice of providers is an extremely important feature in marketing their plans.

Cell 19. Technological. In recent years, there have been two opposite major trends in technology with respect to location. The first has been consolidation to a single site for services to treat highly complex conditions. These sites have been commonly called *centers of excellence*. The simultaneous contrary trend has been a move away from centralized locations to points of care in the community. Technologies ranging from diagnostics to laser treatments have followed this latter pattern. In addressing the issue of where care is provided, one must also understand the extent to which technology *enables* care to be provided at "alternate" sites, such as in the home. A further trend is remote delivery of care, sometimes called *telemedicine*. (More will be said about this service in Chapter 8, "Information Technology.") Examples include consultations using audio and video conferencing over the Internet and robotic surgery performed by an off-site surgeon.

Cell 20. Population Characteristics. With respect to the demographic determinants of where care is provided, one must also address questions about physical access to care. For example, how do health-impaired elderly patients get to regular physician appointments? How are rural populations served when the closest healthcare facility or practitioner may be hours away? What is the role of telemedicine in providing care for the homebound and geographically remote populations?

Who Provides the Services and Products?

Cell 21. Political/Regulatory/Judicial. The first question one must ask in this category is: What are the regulations and laws defining who is allowed to care for patients and to handle and prescribe such products as pharmaceuticals and medical equipment? Related to this question is the matter of the scope of such practitioners; for example, what are nurse practitioners and physician assistants allowed to do vis-à-vis physicians? International

[13]CMS.gov Emergency Medical Treatment & Labor Act (EMTALA). Retrieved March 31, 2018 from https://www.cms.gov/Regulations-and-Guidance/Legislation/EMTALA/

examples demonstrate a great variance: The U.S. medical community makes extensive use of nurse practitioners and physician assistants, whereas these professionals are absent from the clinical scene in Japan (except for nurse midwives). Another related question is: Who licenses these professionals? In the United States and Canada, such licensure is conducted by states and provinces, respectively. With increased globalization, there is some pressure to make such licensure transnational. For instance, the European Economic Community Council Directive 93/16/EEC of April 5, 1993 states: "Each Member State shall recognize the diplomas, certificates and other evidence of formal qualifications awarded to nationals of Member States by the other Member States . . . by giving such qualifications, as far as the right to take up and pursue the activities of a doctor is concerned, the same effect in its territory as those which the Member State itself awards."[14]

Another major question in this category is: How is the supply of practitioners regulated, if at all? As an example, contrast the processes in the United States and Argentina for medical school admission. In the United States, admissions occur after a rigorous screening process; once students are admitted, however, few drop out. In Argentina, any student who can pass basic entrance requirements will be admitted to a public university, where tuition is free; however, the rigorous curriculum leads to a much higher dropout rate than in the United States. Further, the vast majority of medical school graduates in the United States go on to postgraduate residency training, whereas the numbers of such positions in Argentina are severely limited.

A related question is: Who accredits these training programs? In countries with public educational institutions, the government performs this function. In the United States, where most of these schools are in the private sector, a number of accrediting bodies review the quality of training. Ultimately, the U.S. Department of Education is responsible for oversight of these accrediting organizations.

Finally, what is the nature of the laws and regulations governing anticompetitive practices and fee sharing? For example, in some countries, it is perfectly legal and ethical for the referring physician to receive compensation from the specialist for sending patients. In the United States, this practice is considered both illegal and unethical. (This issue, of course, overlaps with the question of how much is paid.)

Cell 22. Economic. One could ask several questions to determine the extent economics influence who provides care. First, how are the fees for services and products determined (i.e., are they set by government regulation, subject to free market factors, or a combination of the two)? The payment structure is important, among other reasons, because it will determine equity between practitioners. For example, are procedural specialists (surgeons) and cognitive specialists (primary care doctors) paid at equal rates for similar services based on such factors as time, risk, and skill? Also, how are nonphysicians (such as nurse practitioners and physician assistants) paid compared to physicians for performing identical services? Finally,

[14]Council Directive 93/16/EEC of 5 April 1993 to facilitate the free movement of doctors and the mutual recognition of their diplomas, certificates and other evidence of formal qualifications. Retrieved April 2, 2018 from https://publications.europa.eu/en/publication-detail/-/publication/f211f687-d01e-42e3-b20a-2a224b2feb21/language-en

what is the role of the marketplace in determining the overall numbers of providers and their distribution both geographically and by specialty? In the United States, the marketplace largely determines the answers to these questions. In other countries, however, the government may have a more direct influence.

Cell 23. Social/Cultural. The two principal questions in this category are: How does a society determine and value who is accepted as a "legitimate" provider of care? *and* What are culturally valid treatments? For answers, one must look at who is allowed to provide nontraditional healthcare services in a country and how much of the overall care fits into the category of alternative and complementary medicine. One can also ask if these nontraditional providers and treatments are regulated or if there is any oversight by the government. For example, traditional Chinese medicine is regulated in Singapore, yet many nutritional supplements in the United States are not scrutinized in the same way. Also, how does the society view the integration of traditional and nontraditional practitioners and the services they provide?

Cell 24. Technological. The primary question here is: How do decisions about technology adoption and use affect who provides care? To answer this question, it is important to know who designs the educational content for training providers and who gets to use the technology based on training, licensure, or certification. For example, in some areas, interventional radiologists perform peripheral angioplasties (insertion of a balloon catheter into a blocked artery to restore flow), while in other locations, these procedures would be done by vascular surgeons. One must also know the process through which technologies are adopted, particularly when there is competition for resources. For instance, is the decision made based on population needs, return on investment, or political pressure from an individual or special interest groups?

Cell 25. Population Characteristics. The summary question one must pose here is: How do demographic and epidemiologic characteristics of the population determine who provides the care? Answering this question requires an assessment of where the providers are located, similar to the earlier question regarding *where* the care is provided. One also must look at the demographic characteristics of those who are delivering the care. Finally, the existing and projected population characteristics will determine the needed specialty mixes. For example, the aging population requires more practitioners who perform colonoscopies (gastroenterology), cataract removals (ophthalmology), and other geriatric services. Likewise, if diseases such as HIV/AIDS or other widespread infections occur, practitioners who focus on those conditions will be required.

While all of the above issues should be considered individually and expanded with follow-up questions, you should also consider how multiple categories interact simultaneously to uniquely define a healthcare system. As you read the remainder of this book, keep this defining framework in mind so you can apply principles to the healthcare system(s) you are studying, whether that of the United States or other countries.

Next we will assess how strategic planning can be applied to the above issues and consider how choices about multiple competing priorities simultaneously interact to uniquely define a healthcare system.

STRATEGIC PLANNING

Stakeholders

JAQUES.

All the world's a stage,
And all the men and women merely players;
They have their exits and their entrances;
And one man in his time plays many parts.

—William Shakespeare, *As You Like It*, Act 2, Scene 7

One of the most important changes in strategic thinking about the healthcare sector is a shift from selling volumes of goods or services to understanding and delivering customer value. In order to understand this shift, we need to consider a few more definitions. With respect to healthcare, the term "customer" refers to those who purchase a product or service after determining that its characteristics meet a need or desire. By comparison, a "consumer" is the one who actually uses the product or service.

A customer may or may not be a consumer. For example, a parent would be the customer for snack food companies while the child might be the consumer. The healthcare setting is more complicated than that of consumer products, so we need to define more terms based on the roles individuals play in certain situations. Consider the following example.

A visiting aunt (aunt = *influencer*) tells the mother that the mother's child looks sick and should be taken to a doctor. The mother (mother = *decider*) takes the child (child = *patient*) to an emergency room where he is evaluated and treated by a physician. The physician decides the child needs medication and sends a prescription to the pharmacy (pharmacy = supplier). The physician and hospital (physician and hospital = providers) request payment from the health insurance company (insurance company = *payer*) to pay for the service that was rendered.

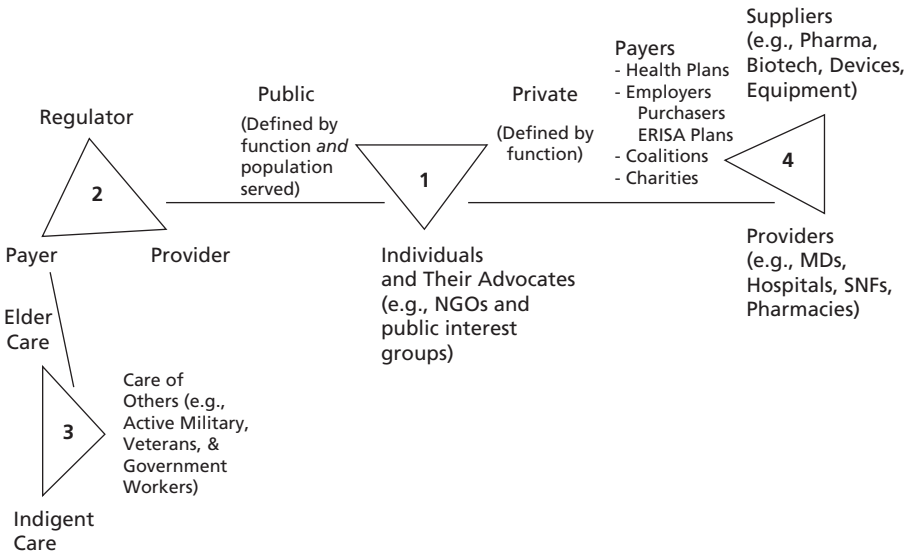
Aside from these direct participants in the scenario, other important participants are involved. For examples: Society as a whole might be interested if the child has a communicable infectious disease; the father may be involved if *his* health insurance is the one covering the child's care; whichever parent's insurance covers the cost, it is likely that insurance comes from an employer; and finally, all the products used to deliver the service (including the prescribed pharmaceutical) are manufactured by different companies. Further, the above designations depend on whose tale is being told. As presented, the story is one of the child receiving care. If, for example, the story were about pharmaceuticals, the decider would be the physician. Given these complex relationships, we need a term that encompasses all those persons and organizations having an interest in such matters as the funding, delivery, product development, and receipt of healthcare services and products. We call all interested parties *stakeholders*.

Following identification of its stakeholders, a healthcare business will inevitably confront conflicting needs and wants. For example, both payers and patients are important stakeholders for pharmaceutical companies and healthcare providers. Just as health plans may impose unreasonable constraints on the delivery of patient care, patients can express unrealistic demands for the provision of medical services and products. Balancing conflicting stakeholder requirements is a constant and difficult challenge.

From country to country, stakeholders vary in such important dimensions as power and scope. For example, in Cuba, physicians are employees of the state-owned and run system. By contrast, in Japan, the Japan Medical Association is a politically powerful organization that includes private practitioners. Given these broad disparities in health system designs, a descriptive model of stakeholders must be appropriately flexible. We can therefore divide stakeholders into three groups. (Please see Exhibit 1.6.)

The first set of stakeholders is individuals and their advocates in the private sector. Included in this group are not only the recipients of care (patients), but also other individuals who have an interest in these patients: family members, legal guardians, close friends, and community members. This category also includes private sector organizations that advocate on behalf of patients with similar characteristics, such as age, disease, or geographic location. For example, the Pediatric AIDS Foundation meets the first two criteria while the latter two criteria describe the American Lung Association of Metropolitan Chicago.

EXHIBIT 1.6. Stakeholders



The second stakeholder is the public sector. The public sector acts as a regulator of healthcare products and services (e.g., handling licensure and approval of medical products) and also provides services through such institutions as veteran and county hospitals. The third public function, as payer, is noteworthy because it differentiates programs not only by what they do but for whom they cover healthcare benefits. Even in countries with universal coverage, separate systems of funding and care frequently exist for subcategories of the population, such as the elderly and the poor. Sometimes these categories are combined; for example, the Programa de Asistencia Medica Integral (PAMI) in Argentina covers the elderly and poor. These categories are exemplified in the United States by Medicare, Medicaid, and governmental programs for those who serve it in various capacities (i.e., active military, veterans, or government employees).

The third category of stakeholders is the private sector. *Constituents of the private sector define themselves by what they do*. The traditional division is among payers, providers, and suppliers. Payers include insurance companies, employers (who may self-fund all or part of employee health insurance), unions (the oldest form of health insurance and still the predominant method in Argentina), business associations, and charitable organizations. Pharmaceutical, biotechnology, device, medical supply, and diagnostic companies are significant producers of healthcare products. Providers comprise such categories as physicians, hospitals, nursing homes, pharmacies, and independent diagnostic facilities (e.g., laboratory and radiology).

Stakeholder categories were once fairly distinct. In the past couple of decades, however, there has been an acceleration of cross-category mergers, acquisitions, startups, joint ventures, and outsourcing, so that clear sector definition in many cases is no longer possible. Consider these few examples:

- A group of large hospitals systems decided to start its own generic pharmaceutical company to combat high and rising costs.[15]
- Large provider health systems have been entering the health insurance business so that they now own 52% of such products.[16] At the same time, health insurers are buying providers, including medical groups.[17]
- Health insurers and pharmaceutical companies are partnering to develop drugs for the insurers' customers.[18]

[15] Abelson, R., & Thomas, K. (2018, January 18). Fed up with drug companies, hospitals to start their own. A group of large hospital systems plans to create a nonprofit generic drug company to battle shortages and high prices. *New York Times*, B1.

[16] Morse, S. (2016). 25 biggest provider-sponsored health plans include some of the nation's biggest systems. Health system–owned plans now represent 52 percent of health insurance products, AIS said. *Healthcare Finance* (September 13). Retrieved from http://www.healthcarefinancenews.com/news/25-biggest-provider-sponsored-health-plans-includesome-nations-biggest-systems

[17] Abelson, R. (2017). In shift to care delivery, insurer buys doctors unit. *New York Times*, B3 (December 7).

[18] Humana. (2013). Humana and Astellas form research collaboration to improve health care delivery for seniors (February 19). Retrieved from http://press.humana.com/press-release/humana-and-astellas-form-research-collaborationimprove-health-care-delivery-seniors

- A pharmacy company decided to purchase a large health insurer.[19]
- Medicare contracts with private insurers to furnish insurance for one third of its membership.[20]
- In a study of 104 large patient-advocacy organizations, 83% were found to have received financial support from drug, device, and biotechnology companies.[21]

Health System Trade-offs and Value Propositions

Given these diverse and overlapping stakeholders, how can you formulate a strategy to address the needs of one or more of them? In other words, how can you develop a value proposition for your healthcare customers and other interested stakeholders? Before exploring the answer to this question, we must consider one more key term: *strategy*. We highlight three important characteristics of strategy. First, while businesses are often involved in many small, day-to-day decisions, strategy considers approaches to handling *major issues* with which the enterprise must deal now or in the future. Second, strategy involves setting the organizational direction for the medium to long term. These time frames are, of course, relative and vary by firm and industry. Third, useful strategies take into account that short-term decisions *do* need to be made. Strategy, therefore, provides a framework for making those decisions within the context of the organization's long-range goals.[22]

While a number of strategic approaches exist for organizational and industry analysis—for example, SWOT (strength/weakness/opportunity/threat) analysis and Five Forces Analysis[23]—the one used here (please see Exhibit 1.7) provides a useful framework for understanding the healthcare industry.

This model posits that in a Pareto optimal state (explained below), stakeholders' value positions are shaped by choices among Cost, Quality, and Access; any desired changes for one of these elements require changes (trade-offs) in one or both of the others.

Simply stated, for an individual stakeholder in a Pareto optimal state, any change in preferences results in a less desirable value position.[24] In other words, a healthcare stakeholder's overall value preference exists in an equilibrium state. As mentioned above, the implication

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[19]de la Merced, M. J., & Abelson, R. (2017). CVS to buy Aetna for $69 billion in a deal that may reshape the health industry. *New York Times*, p. A1 (December 4).

[20]Henry, J. Kaiser Family Foundation. (2017). Medicare advantage enrollees as a percent of total Medicare population. Retrieved from https://www.kff.org/medicare/state-indicator/enrollees-as-a-of-total-medicare-population/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

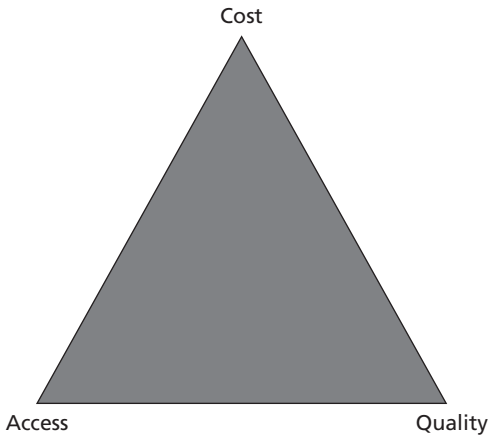
[21]McCoy, M. S., Carniol, M., Chockley, K., Urwin, J. W., Emanuel, E. J., & Schmidt, H. (2017). Conflicts of interest for patient-advocacy organizations. *The New England Journal of Medicine*, *376*, 880–885. Also see Kopp, E., Lupkin, S., & Lucas, E. (2018, April 6). Patient advocacy groups take in millions from drug makers. Is there a payback? *Kaiser Health News*. Retrieved from https://khn.org/news/patient-advocacy-groups-take-in-millions-from-drugmakersis-there-a-payback.

[22]For a good general strategy text, see: Besanko, D., Dranove, D., Shanley, M., & Schaefer, S. (2016). *Economics of strategy*, 7th ed. Hoboken, NJ: Wiley.

[23]Porter, M. (1980). *Competitive strategy*. New York: The Free Press.

[24]A more formal definition is: "... given the availability of information, neither agent's expected utility can be increased without decreasing the expected utility of the other agent." In Harris, M., & Raviv, A. (1978). Some results on incentive contracts with applications to education and employment, health insurance, and law enforcement, *The American Economic Review*, *68*(1), 20–30.

EXHIBIT 1.7. Strategic Choices to Deliver Healthcare Stakeholder Value



Source: Shalowitz, J. (2008). In P. Kotler, J. Shalowitz, & R. Stevens. *Strategic marketing for health care organizations: Building a customer-driven health system*. San Francisco: Jossey-Bass.

of this equilibrium is that if one wanted to lower cost, increase quality, and/or increase access, a trade-off in one or both other factors must occur. For example, if a stakeholder wants care at a lower cost, quality and/or access would need to be lowered.

The above explanation invites the question: Is it ever possible to improve one or more of these three elements *without* getting a worse overall value proposition? The answer is yes, but to do so requires health system restructuring or innovative technology. When either of these changes occur, a new Pareto optimal state results.

To illustrate this point, consider the portable glucose meter (glucometer) that helps diabetics measure their blood sugars with a finger stick. Blood sugars were originally only measured in hospitals or reference laboratories (freestanding centers where specimens were processed). If a physician saw a patient in the office and suspected diabetes, a blood sample would be drawn and sent to an off-site lab. The results would be available the next day. If the results were abnormal, the patient might be hospitalized for treatment to lower the sugars toward the normal range. During treatment in the hospital, blood could be drawn more frequently with results returning in about an hour rather than a day. Glucometer technology not only allowed faster in-hospital results but moved rapid testing into the physician's office. From there it quickly moved into the hands of patients. Overall, the cost was reduced (fewer hospital stays and lower test cost), the quality was improved (closer glucose monitoring led the potential for better diabetic control), and access was increased (the test can now be performed anywhere). The result of such technology implementation was a new Pareto optimal state. Further technological developments, such as glucose measurement without blood sampling,[25] have the potential to move the state again.

[25]Lipani, L., Dupont, B. G. R., Doungmene, F., Marken, F., Tyrrell, R. M., Guy, R. H., & Llie, A. (2018, April 9). Noninvasive, transdermal, path-selective and specific glucose monitoring via a graphene-based platform. *Nature Nanotechnology*. Published online. Retrieved from https://www.nature.com/articles/s41565-018-0112-4

For many years, academicians and policy makers have recognized these trade-offs. However, more often than not, stakeholders are not willing to make choices. They insist on having all three attributes simultaneously, putting tremendous stress on the system and causing periodic crises. To illustrate this point, consider the U.S. healthcare system, which is the most expensive in the world when measured by purchase price parity, spending per capita, and percentage of GDP. Technology is readily available and is not rationed. Further, as mentioned above, when the FDA evaluates technology (e.g., pharmaceuticals), cost is not a factor in the approval decision. What the United States sacrifices for access to this technology is its availability to those who cannot afford it. Although the passage of the Patient Protection and Affordable Care Act of 2010 (ACA) has helped with coverage, 12.2% of the population were still uninsured at the close of 2017.[26] Countries with national health systems, like England, spend less money on healthcare, not only because the service prices are lower but because healthcare is budgeted along with other governmental programs. Also, governmental agencies like the NICE incorporate cost into their analyses of technology approval. In such systems, all citizens are covered by public insurance, but the limited budget constrains the supply of providers, thus causing long queues and reduced access.

If these trade-offs were that easy to explain, healthcare marketing, strategy, and policy would be relatively simple; but each of these three characteristics must be further broken down into their components to fully appreciate them. These defining elements, in turn, can also require trade-offs, thus creating a cascade of interdependent attributes.

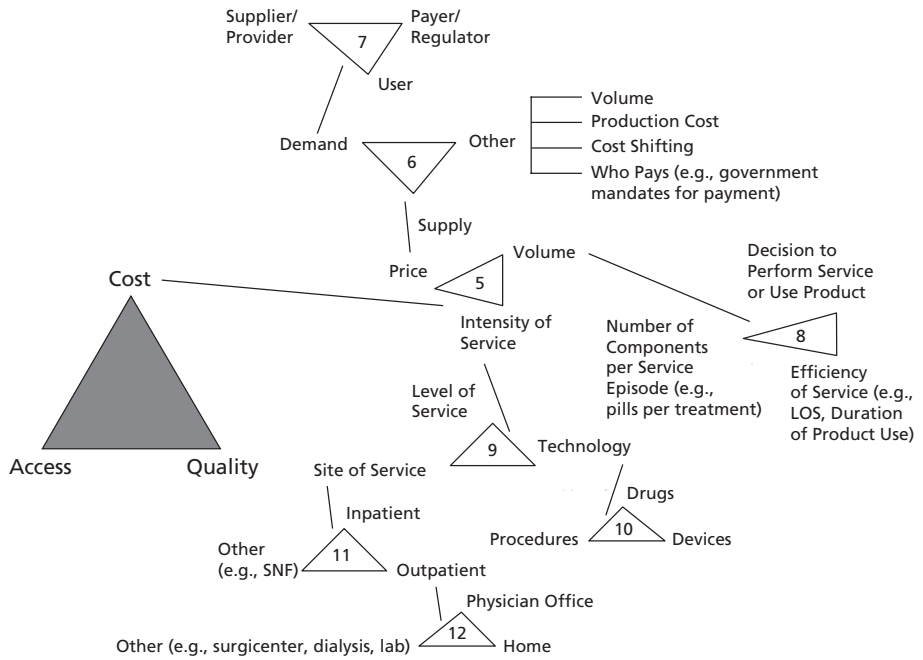
The remainder of this chapter will present a unified scheme after all system components have been explained. This scheme should be used as a heuristic device and not a rigid framework. For example, technology, which is presented in the cost section, could as easily be discussed under quality. Further, there is much overlap and many interrelationships among elements of different sections; a true representation would, therefore, appear as a complex web rather than elaborations of three discrete branches.

Cost. We will start by examining cost. (Please see Exhibit 1.8.) The word "cost" means different things to different people. Accountants often define the term as the *average* expenditure required to produce one unit of output (a good or service). Economists frequently refer to marginal costs, the resources required to produce *the next* unit of output. This latter concept leads to some unusual statements, such as: "The true costs of nonurgent care in the emergency department are relatively low."[27] There are other reasons for confusion over what we mean by the true cost of healthcare. For example, a provider lists an artificially high *charge* for a particular service; however, the *negotiated price* an insurance company pays is much lower. Further, the insurer will pay only a *portion* of the negotiated price determined by the contract with the purchaser of the insurance policy; the remainder of the bill is the patient's responsibility. To simplify the cost definition, in this book "cost" means *an actual payment* made by a specified stakeholder for a good or service.

[26] Auter, Z. (2018, January 16). U.S. uninsured rate steady at 12.2% in fourth quarter of 2017. *GallupWell-Being*. Retrieved from http://news.gallup.com/poll/225383/uninsured-rate-steady-fourth-quarter-2017.aspx

[27] Williams, R. M. (1996). The costs of visits to emergency departments. *The New England Journal of Medicine*, *334*, 642–646.

EXHIBIT 1.8. Components of Cost



Source: Shalowitz, J. (2008). In P. Kotler, J. Shalowitz, & R. Stevens. *Strategic marketing for health care organizations: Building a customer-driven health system*. San Francisco: Jossey-Bass.

The total cost of products or services are governed by the following relationship:

$$Cost = f(P, V, I)$$

where P = price of the service or product; V = volume or number of units; and I = intensity of service or product.

Two brief examples will illustrate the use of this formula.

- Each year, national pharmaceutical expenditures are announced and increases are attributed to three categories: increase in prices of existing drugs (Price), increase in use of existing medications (Volume), and introduction of new products or technologies (Intensity).
- On a more micro level, the total cost of a hospitalization for a patient can be broken down into: level of care, e.g., intensive care unit versus a bed on a regular medical/surgical floor (Intensity); number of days (Volume); and price per day at different levels of care (Price).

Understanding these components can lead to important insights not only for making strategic decisions but also for public policy. Theoretically, one can attempt to check high costs by tackling any or all of these elements; however, addressing one without also confronting the other two is futile. For example, the U.S. government has been dealing with rising physician payments by lowering the fees for their services. Doctors respond by increasing volume or, more importantly, by increasing the technology applied to care, such as using newer, more expensive medications when older ones are as effective. More will be said about this issue when provider-induced demand is discussed in Chapter 2, "Determinants of Utilization of Healthcare Services." We will now deconstruct each of these three elements.

Price. Classical economics dictates that price (please see 5, 6, 7 in Exhibit 1.8) is determined by supply and/or demand for a product or service. This principle is also true for healthcare, but only to a point. With regard to *demand*, user (or customer) demand for goods can influence price but, in healthcare, that is not the whole story. Suppliers and providers can also manipulate customer demand by such measures as physician-requested visits. Recall from the discussion on stakeholders that one of the unique features of healthcare is the presence of parties in addition to those who supply the goods and services and those who consume them. Payers and regulators (such as governments) can also influence demand through such direct or indirect measures as rationing services and regulating pricing, respectively. *Supply* may also influence price, but it is not always subject to free market conditions. For instance, in many countries, supply is centrally regulated. As an example, some governments regulate such items as the number of medical school places and/or advanced diagnostic imaging machines.

In addition to supply and demand, *other factors* also determine the price of healthcare goods. At least four of these other factors are involved in determining prices.

1. *Volume*. As in other fields, volume discounts are often available. But lower costs with volume should also come with experience (so-called learning curve). In many cases, however, healthcare prices do not display this experience-related price deduction. For example, coronary artery bypass surgery prices have not decreased commensurate with the experience and standardization of the technology.
2. Prices are often linked to *production costs*. An example from the governmental domain (Medicare) illustrates this point. The federal government determines physician prices based on computation of practice costs and the work that goes into providing the service. This method is called a RBRVS, about which more will be said later.
3. Prices often have nothing to do with the good itself but with *other items* consumed in the same setting. For example, one hears about such hospital charges as the $5 aspirin. Obviously, the aspirin's cost is nowhere near that amount, but other hospital services are often paid below production cost. The hospital therefore cross-subsidizes its products and services in a practice called *cost shifting*. Some of these services are "loss leaders," like maternity care. Other services are truly underpaid, but the hospital must offer them in order to fulfill its mission of providing comprehensive care to the community. In addition to this "internal" cost shifting, "external" cost shifting also occurs in the form

of charging some payers more than others for the same products or services to make up for lower payments. For example, private insurance payments are almost always more than Medicare payments, which in turn are more than Medicaid payments.

4. *"Who pays"* can greatly influence the price, regardless of supply or demand for the good. This category reflects "buyer power" as well as "non-market" forces. For example, Medicare has set its reimbursement for injectable pharmaceuticals at 6% over "average sales price (ASP)" and in-patient hospital payments based on the patient's diagnosis (DRG). Providers cannot negotiate these rates, and Medicare is such an important payer that providers do not turn away these beneficiaries.

Volume. We now turn to the *volume* input of cost. (Please see 5 and 8 in Exhibit 1.8.) Determinants of volume can be divided into three components. The first portion of volume concerns the decision about whether to use a product or deliver/receive a service. While this notion seems simple, much debate has occurred over a variety of related issues in healthcare, prompting questions such as: Is the comprehensive "annual physical" really necessary for all adults? When is "watchful waiting" better than aggressive treatment?; and Are particular screening tests worthwhile?

An important related question is: Once experts agree that action is generally indicated (an exam must be performed, a test ordered, and/or treatment administered), which among the options is the best choice? Obviously, choosing *one* may mean the other actions do not occur. For example, assume a patient has blockages in the coronary (heart) arteries that require invasive intervention. Is the appropriate action stenting or coronary artery bypass graft surgery (CABG)? Although the answer depends on the extent of the blockages, where they occur, and how many arteries are involved, experts may not always agree on the best method for treating individual patients.

These issues only deal with professional decisions. Patients and other stakeholders also determine whether actions are taken or not. For example, patients often pressure physicians for antibiotics for viral infections, when none are needed. Public policies also may determine whether something is done or not. For instance, in the past, England's National Health Service did not pay for hemodialysis for persons over age 55.

Once the decision has been made to act, two further inputs will determine the overall volume. The first is the efficiency of its execution. For example, once the patient and physician agree that surgery is an appropriate option, how long is the patient to remain in the hospital and how many resources are used for that episode of care? The second issue is the necessary number of units of care once a specific action is chosen. For example, there are various antibiotic regimens for treatment of certain bacterial infections, ranging from 30 pills (1 pill three times a day of amoxicillin) to one dose of a liquid (ZMAX® form of the antibiotic azithromycin).

Intensity of Service. The third determinant of cost is the *intensity of service*. (Please see 5, 9, 10, 11, 12 in Exhibit 1.8.) The first part of intensity is *level of service*. For example, does a hospitalized patient require intensive care or is a regular medical/surgical bed sufficient?

Another illustration of this point is choice of antibiotics. Does a patient require a short course of oral medication or prolonged intravenous treatment?

Intensity of service also comprises use of medical *technology*, which consists of drugs, devices, and procedures. Sometimes these modalities are used in combination, while at other times they are substitutes for one another. For instance, different preferred treatments exist for diverse heartbeat irregularities. Some are best treated by medication; others should be cared for by devices (implantable defibrillators or pacemakers); still others require surgery (where the source of the rhythm disturbance is surgically ablated). Each of these different technologies carries its own cost.

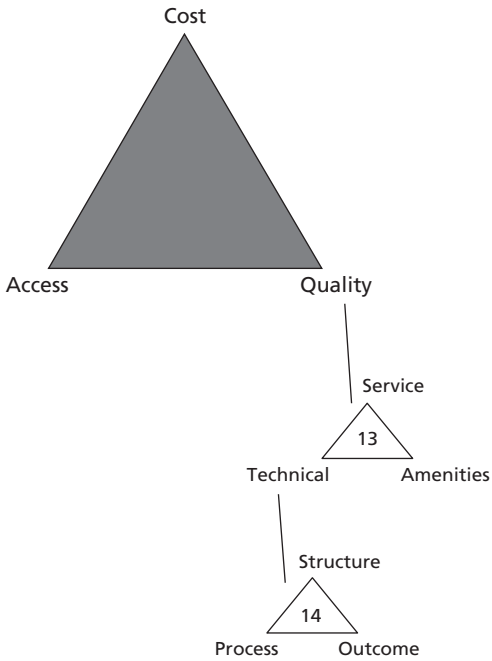
Finally, the *site of service* is an important determinant of intensity and, hence, cost. Sites of care can be divided into institutional and noninstitutional settings. In the former category, hospitals come to mind first. We refer to the acute care hospital setting as "inpatient" care. Other institutional settings consist of skilled nursing facilities (sometimes just called SNFs) or long-term care settings, such as chronic ventilator facilities or long-term care centers. We refer to noninstitutional sites as "outpatient" care. Common sites are the physician's office, the patient's home (with varying degrees of skilled home healthcare), and various other locations for freestanding diagnostic and therapeutic services. In this latter category, we include same-day (ambulatory) surgery (whether at a hospital or freestanding surgicenter), dialysis facility, diagnostic laboratory, radiology facility, and physical therapy setting.

The different types of sites can be substitutes for one another or appropriate sequential choices. For example, an elderly patient should be hospitalized for repair of a hip fracture. After this treatment, she may recuperate and receive physical therapy in an SNF and then be sent home with appropriate services there. On the other hand, the majority of surgical procedures are now performed on a same-day basis, substituting for inpatient treatment. Further, as mentioned above, many diagnostic and therapeutic technologies are moving from centralized medical centers to outpatient points of care. For example, many tests that were formerly only done in a hospital laboratory can now be performed with the same quality in physicians' offices.

Quality. Since the subject of quality will be discussed in a separate chapter, just an outline will be presented here. (Please see Exhibit 1.9.) The dimensions of quality can be divided into the amenities, service aspects, and technical components. To illustrate and contrast these elements, consider a hospital stay.

- The *amenities* may consist of the items that form a first impression about the facility (e.g., building style, landscaping, and ease and cost of parking). While the marketing implications of these items are clear, these features bear no relation to the actual desired outcome (e.g., success of a surgical procedure).
- The *service* aspects come closer to affecting outcomes. To continue our example, inpatient service may consist of meals, how quickly personnel respond to patient requests, and housekeeping services. While these functions support the actual business of delivering care and can more strongly influence opinions about the institution than the amenities, they are not part of the core activities in delivering treatment.

EXHIBIT 1.9. Components of Quality



Source: Shalowitz, J. (2008). In P. Kotler, J. Shalowitz, & R. Stevens. *Strategic marketing for health care organizations: Building a customer-driven health system*. San Francisco: Jossey-Bass.

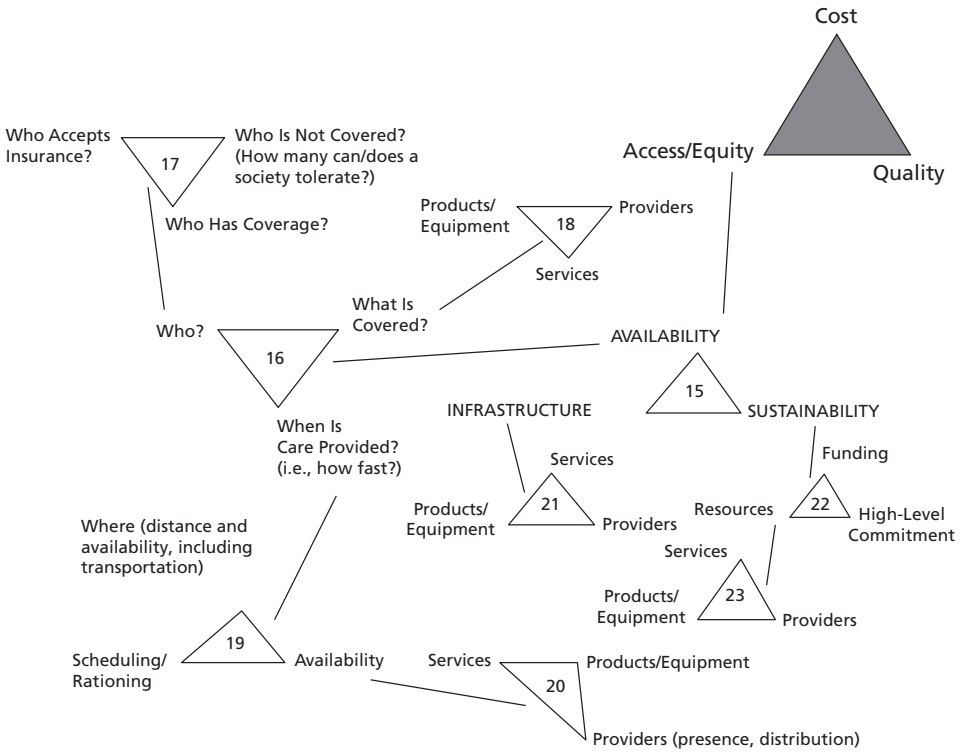
- The *technical* aspect is the work that is done that most directly affects outcomes. Examples of such activities are expertly performed surgery, choice of appropriate medication, and skillfully administered nursing care.

The technical component can be further divided into structure, process, and outcome. *Structure* refers to those items that are either present or absent and usually easy to measure. Examples include certification of specialists, presence of a piece of equipment, or adequate width of a doorway to accommodate a hospital bed. The meanings of process and outcome measures are self-explanatory.

Access and Equity. The third part of this strategic trade-off derives from a business model that can provide timely care of needed services and products. (Please see Exhibit 1.10.)

Availability. The first question regarding access/equity is whether certain resources are available. (Please see 15, 16, 17, 18 in Exhibit 1.10.) Availability can be assessed by answering the questions posed in 16 of Exhibit 1.10, starting with the question: *Who*? To expand on this

EXHIBIT 1.10. Components of Access/Equity



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inquiry, we can ask: Who has health insurance coverage and who does not? These two issues, while apparently different sides of the same coin, address different strategic purposes. As an example of the former question, a pharmaceutical company will target the insured population for sales of a new product. The latter issue raises the question: How many uninsured people can a society accept? In virtually all countries except the United States, the answer to this question is *none*.

The third aspect of this dimension concerns who will accept the patient's insurance. For example, in the United States, the joint federal-state program for the poor and other select populations (Medicaid) ensures that eligible persons have at least a modicum of health insurance coverage. Unfortunately, this program often pays physicians so little and so late (9 months in accounts receivable aging is not unusual) that few may choose to see

Medicaid-insured patients. Also, not every commercial insurance plan will contract with every provider; patients must then seek those practitioners and institutions with whom their insurance companies contract in order to expect maximum payment for care.

"*What* is covered?" is the next question that defines availability. (Please see 18 in Exhibit 1.10.) Even though an individual has insurance, not all services, products/equipment, or providers are covered. As an example, most insurance plans in the United States do not pay for strictly cosmetic procedures.

The third aspect of availability is *when* care is able to be provided. (Please see 19 and 20 in Exhibit 1.10.) *When* care can be provided depends on whether services, providers, and products exist and/or are close enough to patients to be useful. In some developing countries, some technologies and practitioners skilled in their use may not exist. If the technologies do exist, where they are located is extremely important. The same conditions can also exist in urban centers. For example, making free prenatal care available to inner-city women is a pointless gesture unless they have an affordable and easy way to get to these services. Finally, even if healthcare is close and easy to reach, some services are in short supply so they are explicitly or implicitly rationed. Queues in the United Kingdom for certain services are examples of this problem.

Infrastructure. In addition to availability, the two other dimensions of access we must consider are *infrastructure* (please see 21 in Exhibit 1.10) and *sustainability*. These two topics are of particular concern for developing countries as well as rural and inner-city populations in developed nations. While thinking about infrastructure can raise similar questions as the "where" and "availability" themes, this topic refers more to the *supporting roles* played by services, providers, and products/equipment rather than the primary activity or product. For example, think about a program to deliver immunizations to children in rural locations in a developing country. Assume that a pharmaceutical company donates the supplies and healthcare practitioners volunteer time to administer injections. The infrastructure dimension of this program includes not only the traditional items, such as roads to get to needy populations, but also medical support services, such as an information system that logs and tracks who received the shots and when they are due for booster immunizations.

Another example concerns HIV/AIDS. Supplying medication is necessary but not sufficient to successful treatment programs. The infrastructure must also include healthcare personnel who make sure patients take the medication as prescribed and are available for support when side effects inevitably arise.

Wealthy nations also have infrastructure problems. Consider the following examples:

- A hospital advertises an innovative program, only to find it cannot accommodate the volume of phone calls or schedule the service in a timely fashion.
- Shortly after a pharmaceutical company gets approval to market a new "blockbuster" drug, its production plants cannot keep up with demand; in the meantime, a competitor releases a substitute and garners significant market share.

- A producer of unique diagnostic equipment experiences quality problems in its factory that cause a lengthy cessation of manufacturing, reduced revenue, and a plummeting stock price.

Sustainability. Contemplating the infrastructure problem naturally gives rise to consideration of *sustainability*. (Please see 22 and 23 in Exhibit 1.10.) Experts often use the metaphor that affecting lasting change in the healthcare arena is more like a marathon than a sprint. Sustainability starts with high-level commitment by appropriately empowered authorities. (While grassroots activities are worthwhile, their purpose is often to convince decision makers to act in the first place.) Funding is also critical. Institutions are often reluctant to accept large donations for buildings or equipment because of the anticipated (and unfunded) ongoing maintenance costs. Finally, decision makers and funders must commit appropriate resources for the long run. These resources must not only exist for episodic interventions but provide continuity.

Putting It All Together

In combining all these concepts, a few further considerations emerge. First, consider that each stakeholder has different preferences among the cost/quality/access dimensions *depending on a given issue*. When two or more stakeholders are involved in a strategic decision (as is almost always the case), conflicts often arise. The initial strategic choices you will need to make will, therefore, require answers to these questions:

Who are your stakeholders?

What is their relative importance to you given . . .

a) The specific issue/product under consideration (short-term view)?

b) The overall relationship (long-term view)?

What are your stakeholders' value propositions?

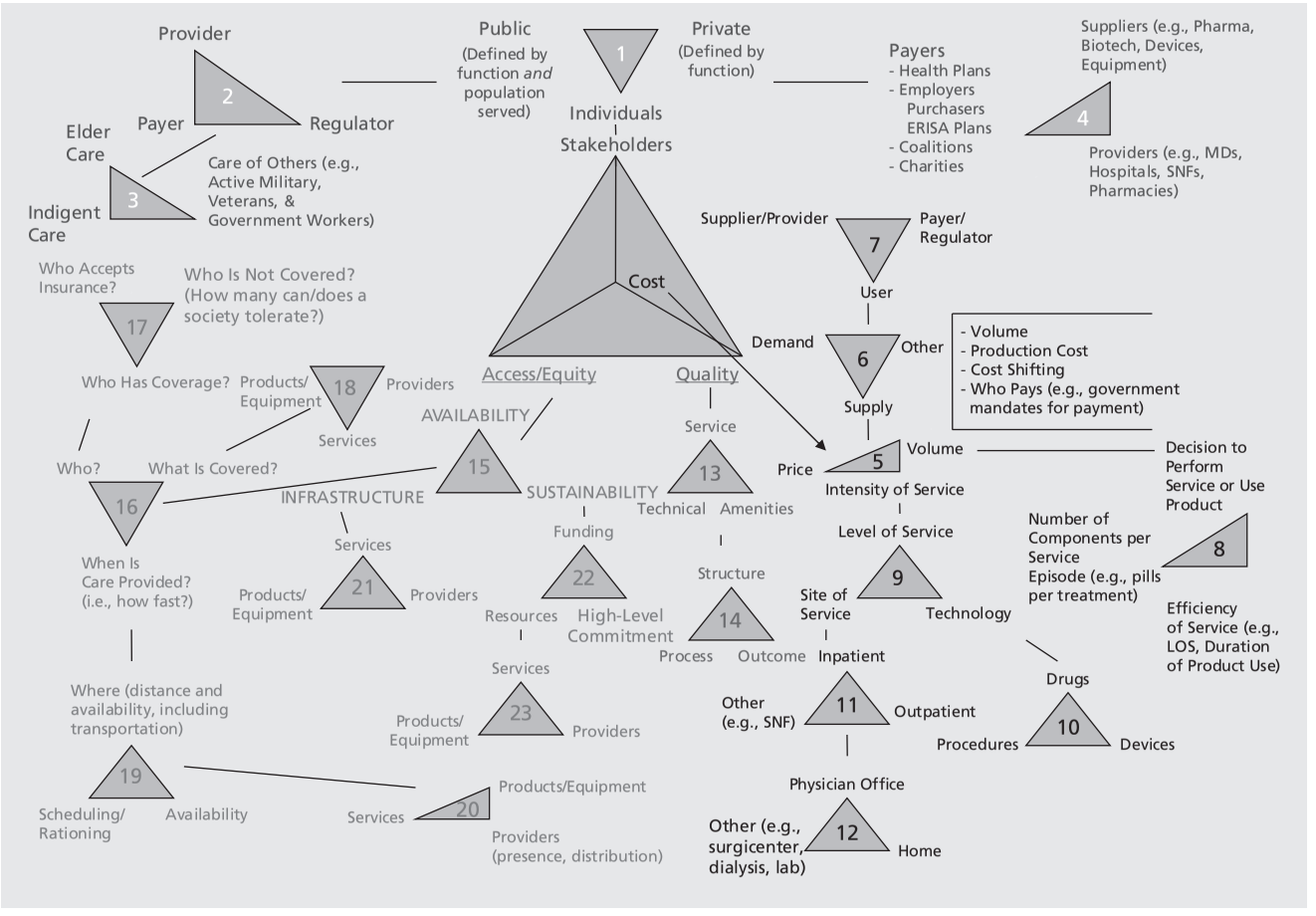
Who are your stakeholders' key stakeholders?

How can you help *your* key stakeholders deliver value to *their* key stakeholders?

How do your stakeholders prioritize your importance to *them*? (This question is asked last, since successfully acting on answers to the ones above will affect your importance.)

Another significant consideration is that when any one element in Exhibit 1.11 changes, it can have far-reaching effects on the entire system. For example, assume a state government lowers payment rates for physicians caring for Medicaid patients. How will that action affect the availability of physicians willing to care for those patients? As another example, consider a new diagnostic technology that can be used in the physician's office at the time of a patient's visit, providing quicker results. What are the implications of this test on volume, and hence cost, versus patient satisfaction?

EXHIBIT 1.11. Comprehensive View of Stakeholder Value Proposition Components



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SUMMARY

This chapter presents some initial definitions and two working models that will help you understand different healthcare systems, relevant stakeholders, and the effects of their strategic decisions on other elements of the healthcare marketplace. You are encouraged to think about how to use these models in your sector of the industry and to practice using them, especially when it comes to challenging technology management and pricing decisions that are discussed in later chapters in this book.