How do people choose to allocate resources when it is not possible to pay for all desired goods and services? In principle, the invisible hand of the market guides resource use; with regulators, generally governmental agencies, assuring a level playing field and preventing various forms of abuse, but otherwise trying to stay out of the way. Free markets are guided by a principle called willingness-to-pay, which economists define as that price, governed by supply and demand, which consumers are willing to pay for a service (1). Services in society that are deemed a “right,” such as education, are not governed by free markets, as society may view that all people have a right to those services, independent of their ability to pay. At the level of the individual consumer, Medicine is largely, although not entirely, in the class of a “right,” more like education than a good governed by willingness-to-pay such as automobiles. From the larger point of view of society, there is intense concern over the price of medical services since there is a perception that it is not priced by willingness-to-pay. The concern for value in medicine is a major societal issue. We can define value in health care as good care at a fair price. Whether society is achieving value in health care is a major issue all over the world.

Health care expenditures in the United States have risen dramatically in the last half of the 20th century. Between 1960 and 2000, federal health care expenditures rose from $2.9 billion to $411.5 billion and total national expenditures from $28.65 billion to $1.30 trillion (2). This represents an increase in percent of gross national product over this period from 5.1 to 13.2%. This unprecedented and unparalleled increase in expense for one sector of the American economy is placing American medicine in considerable peril. The Centers for Medicare & Medicaid Services (formerly Health Care Financing Agency) expects expenditures to double in the next 10 years, reaching 17% of the gross national product (Fig. 1) (3).

An understanding of the critical issues involved in health care economics can be understood by assessing the role of Medicare, the federal government health program for the aged and disabled and the largest payer for medical services in the United States (4). The Medicare program is comprised of two parts. Hospital Insurance (HI), or Medicare Part A, pays for hospital, home health, skilled nursing facility, and hospice care for the aged and disabled. The Supplementary Medical Insurance (SMI), or Medicare Part B, pays for physician, outpatient hospital, home health, and other services for the aged and disabled. The HI trust fund is financed primarily by payroll taxes paid by workers and employers. Current tax revenues are used mainly to pay benefits for current beneficiaries. The SMI trust fund is financed primarily by transfers from the general fund of the US Treasury and by monthly premiums paid by beneficiaries. Income not currently needed to pay benefits and related expenses is held in the HI and SMI trust funds, invested in US Treasury
Fig. 1. National health expenditures as a share of gross domestic product (GDP). Between 2001 and 2011, health spending is projected to grow 2.5% per year faster than the GDP, so that by 2011 it will constitute 17% of the GDP (Source: CMS, Office of the Actuary, National Health Statistics Group).

Fig. 2. Medicare spending in the United States. Overall Medicare spending grew from $3.3 billion in 1967 to nearly $241 billion in 2001. Overall spending includes benefit dollars, administrative costs, and program integrity costs. Represents federal spending only (Source: CMS, Office of the Actuary).

securities. The growth in expenditures in recent decades is shown in Fig. 2(3). Although revenue and expenses are currently in balance, this is only maintained by transfer from general revenues. In approximately 13 years, expenses are projected to exceed revenues, which will ultimately exhaust the Medicare trust fund, with a current estimated date of 2030. Current policy does not address the critical issues in health care financing that our society will face over the next several decades if current projections prove correct.

Cardiovascular disease consumes substantial societal resources in economically advantaged countries, and thus is responsible for a considerable part of the projected economic challenges in the future. In the United States alone, the American Heart Association estimates that the cost of cardiovascular disease in 2002 will total $329.2 billion
(4). Of this total, $199.5 billion will be related to direct consumption of medical resources and an additional $129.7 billion will be related to lost productivity resulting from early death and disability. Costs related to coronary artery disease lead the other categories at $111.8 billion, but this is just a little over one third of the total. Given its magnitude, there is a strong societal interest that the $199.5 billion in direct costs be spent wisely and that the $129.7 billion in lost productivity be minimized.

The field of health care economics has developed as a discipline to address these enormous societal issues. It is not the purpose of this book to address policy. It is the purpose of this book to show how services may be rationally valued, that is, how outcomes may be assessed, how cost can be derived, and how choices can rationally be made. *Cardiovascular Health Care Economics* is divided into two sections; the first concerning methods and the second concerning various cardiovascular health care services. The information in *Cardiovascular Health Care Economics* is not designed on its own to be the sole text to guide health services researchers. It is designed to assist health services researchers by being the first place to look for economic studies in cardiovascular medicine and methods in health care economics and as a guide for further reading. It is also designed to be an introduction and reference to cardiovascular health care economics for health care professionals. Health care economics has grown in recent years, partly to help society make better decisions currently and partly in response to the looming crisis ahead. All people in industrial societies face the issues and decisions presented in this book. Thus, *Cardiovascular Health Care Economics* is a book for all those concerned about making good choices and assuring continuing access to high-quality health care in the decades to come.

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