What Macroeconomists Should Know about Health Care Policy

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Abbreviations

CMH	Commission on Macroeconomics and Health (WHO)
DRG	Diagnostic related group
GDP	Gross domestic product
GNI	Gross national income
HIV/AIDS	Human immunodeficiency virus/acquired immune deficiency syndrome
IFI	International financial institution
IMF	International Monetary Fund
LICUS	Low Income Countries Under Stress
MDG	Millennium Development Goals
MSA	Medical savings account
NHA	National Health Account
OECD	Organization for Economic Cooperation and Development
PAYG	Pay-as-you-go
PPP	Purchasing power parity
SARS	Severe acute respiratory syndrome
SI	Social insurance
UN	United Nations
WHO	World Health Organization

Preface

Economic policymakers often measure their success solely by their country's economic growth. As a result, they devote most of their time and efforts to thinking about macroeconomic policy issues, overlooking the way in which macroeconomic policy is influenced by and influences the social sectors—education, health, and income security. Over the past decades, structural adjustment policies have had a profound impact on the social sectors and on social development in low-income countries. And in many industrial countries, policymakers are increasingly aware that developments in the health and pension areas will create fiscal pressures that have implications for the macroeconomic policy framework.

Although incorporating health concerns into macroeconomic policy (and vice versa) requires an understanding of health economics, macroeconomics and health economics are two distinct fields. Seldom does a specialist in one field have more than a modest understanding of the other. More important, macroeconomists and economic policymakers frequently assume that social sector policies should follow the free market strategy that has worked so well in fostering economic growth. This leads them to simply apply efficient market theory in devising policies related to the social sectors, thus ignoring the ways in which various market failures make such an approach undesirable.

This primer is a step toward bridging the divide between macroeconomic policy and health policy. It aims to acquaint macroeconomists with some fundamental facts about the economics of health care and the major health issues confronting countries. It provides a perspective for examining a country's health care system by suggesting some broad parameters that macroeconomists can use to evaluate a country's health policy and the performance of its health system.

This Special Issues paper has been made possible by the generous contributions of many people. The authors benefited greatly from discussions with Sanjeev Gupta of the IMF, and in particular from his insights into macroeconomic policy and social development. Other IMF economists offered insightful comments on the earlier version of this primer, including Juan Pablo Cordoba, Luis Cubeddu, Philip Gerson, Robert Gillingham, Thomas Richardson, Markus Haacker, and George Tsibouris. Philip Musgrove also provided valuable comments. Alexander Preker, George Schieber, and Kei Kawabata of the World Bank helped the authors focus on the major issues facing low-income and middle-income countries and contributed to the paper's substance and empirical evidence. Finally, Yessica Alvarado provided superb secretarial skills in putting this paper to bed.

CHAPTER

1 Introduction and Guide to the Primer

A. The Need for a Guide for Macroeconomists

Whether working on a low-income country or an advanced economy, it is important that macroeconomists be aware of issues in health economics and health policy. Health care has gained prominent recognition in development. The United Nations (UN) Millennium Development Goals (MDGs) set 10 specific targets to be achieved by 2015, of which three explicitly pertain to health. Research studies document that millions of households in developing nations are impoverished each year by health expenditures, retarding poverty alleviation efforts, and an emerging body of research shows that investments in health can have a significant effect on economic development (Bloom and Canning, 2000; Fogel, 2004; and Bloom, Canning, and Sevilla, 2004). HIV/AIDS has undermined the development prospects of a number of African countries and threatens to weaken the growth momentum of several important Asian economies. For middle-income economies, transition economies, and industrial countries, the challenge posed by the health sector for macroeconomists differs, but is no less daunting. Increasingly, pressures emerging from the health sector—in part owing to the aging of populations and in part due to the rapid pace of technological change in the medical sector—are affecting fiscal sustainability, inflation, and possibly even the current account of the balance of payments.

For those working in the health sector, it is also obvious that macroeconomic policies can have a measurable impact on health care. Macroeconomic guidelines relating to public expenditure targets, inflation control, tax policy, and exchange rates will affect the provision of health care and ultimately the health status of the population (see Glied and Remler, 2002). Because a large share of health funding comes from the government, fiscal targets will constrain how much a government can spend on health. Tax policies relating to tobacco, alcohol, and firearms will influence people's demand for these products and ultimately their health (see Jha and Chaloupka, 1999). And the exchange rate will be a factor in the cost of vaccines and drugs. Macroeconomists concerned with the fiscal balance will also influence

decisions on the respective roles to be played by government and private markets in the health sector. Such decisions will influence the pace of health cost inflation, the efficiency and quality of health care, and the degree of equity associated with its financing.

This primer represents an effort to bridge the divide, enabling particularly macroeconomists (such as those who work at the IMF) to obtain at least a basic understanding of the key health policy and health system issues that may arise, which are integral to their understanding of the macroeconomy. For those macroeconomists with limited time who want to have only the most basic grasp of health economics and health policy, the major points of this primer are briefly summarized in this introductory chapter. Section B describes the unique characteristics of health and the health sector that have implications for policy. Section C follows with a discussion of the major challenges facing the health sector. Section D characterizes some key empirical research findings with important policy implications. Finally, Section E provides a road map to the different chapters of the primer for those who wish to go further. The primer recognizes that the key health policy issues of concern to policymakers or macroeconomists in low-income countries will not be the same as those faced by their counterparts working on advanced, middle-income, or transition economies.

B. Unique Characteristics of Health and the Health System

Put simply, there are a few important facts that are fundamental to an understanding of the role of health and the functioning of the health system.

- *Good health, broadly shared, is intrinsically valued in all societies.* The concept of equity in health and equal access to health care is based on an ethical notion of fairness. Inequities are intrinsically repugnant; disproportionate illness and suffering by selected groups of people offend our innate sense of justice. From this perspective, we can infer that, at the minimum, every individual should have access to basic services and medicines to relieve pain and suffering and to avoid untimely death. The most ambitious goal would be for every individual to be able to attain his or her full health potential regardless of age, gender, or socioeconomic status.

- *Health care as a good differs from other essential goods and services, such as nutrition, education, and housing.* The likelihood of illness or the incurring of health expenses is subject to uncertainty. Individual households face only a small probability of having a major accident or illness. But most households would have difficulty affording the cost of treatment for a major illness. As Kenneth Arrow (1963) and John Nyman (2006) show, providing health insurance increases a society's welfare. Insurance, however, causes moral hazard and results in a loss in economic efficiency.

- *Serious market failures exist in the health sector.* The supply side dominates the demand side in the health services market. Professional dominance prevails because of the asymmetry of information between physicians and patients. If left unchecked, the medical profession can exercise its monopolistic power to induce demand and set high prices, leading to rapid health cost inflation and a deterioration in the quality of services. Insurance markets also experience serious market failures. Adverse selection poses a serious problem for voluntary health insurance and deters the pooling of risks between the healthy and less healthy. On the supply side, private insurance companies select the healthy and younger people to insure and leave the less healthy and poor uninsured. Thus, the good risks are not pooled with the bad, and government is left with a serious social problem and a large fiscal burden if it must provide for the uninsured.
- *The cost of serious illness can be a major factor causing poverty for households in many low-income countries.* The cost of modern medicine (for example, diagnostic tests, surgery, and hospitalization) is simply not affordable for most low-income-country households. For example, the average cost of a hospitalization typically exceeds the annual median household income. Studies have found that for several low-income countries, each year 20–30 percent of households have had to borrow or sell assets in order to pay for medical expenses (Liu and others, 1995; Gu and Tang, 1995; Russell, 1996; and Sauerborn, Adams, and Hien, 1996). Households need either medical insurance or access to subsidized health services to prevent financial bankruptcy.

C. Challenges and Issues

Across the world, one can identify the following key challenges facing the health sector.

- *Spending on health care strains both household and government budgets throughout the world.* In many countries, health expenditure per capita has risen faster than the rise in GDP per capita. Consequently, health care costs have taken an ever-increasing share of government, employer, and household budgets and put pressure on those financing the burden of health care (through taxes or insurance contributions). Looking ahead, there are concerns in many industrial countries that an ever-increasing share of the government budget spent on health care (OECD, 2006) will crowd out resources for other important public goods and publicly provided services.
- *The aging of populations is a development now confronting both advanced economies and a number of emerging market countries* (notably China, Korea, Thailand, and Singapore) (see Bryant and others, 2005; Australia Productivity

Commission, 2005; OECD, 2006; and Economic Policy Committee and the European Commission, 2006). Illness and health expenses increase with age. The rapidly aging populations in advanced economies will further exacerbate the pressures associated with a high health expenditure inflation rate.[1] China in particular will, within the next few decades, face an increasing share of its population becoming elderly. Yet few countries have a coherent policy strategy to deal with the fiscal problems arising from an aging population.

- *A "double disease burden" and equity issues face middle-income countries.* The epidemiological transition confronts most middle-income countries. Such countries have to fund and deliver services to address not only the communicable diseases affecting the poor but also the chronic diseases facing middle- and upper-income groups (see Reddy and others, 2005). This will inevitably force these countries to reform their health care financing and delivery systems. Equity in health also gains greater attention politically as a middle-income country becomes more affluent. Typically, only the rising number of upper-income households can obtain and afford to pay for expensive sophisticated health care, whereas others go without. Such disparity creates social and political tensions that governments recognize the need to confront. But they may not have the knowledge or resources to do so.

- *Low-income countries challenged by human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) are now the beneficiaries of a rising tide of donor assistance for prevention and treatment.* But many countries are having difficulty absorbing this assistance and most confront a severe shortage of human resources. HIV/AIDS has weakened the economies of several low-income countries and strained their health care and social service capacity. Most simply lack the absorptive capacity—health care infrastructure and human resources—to prevent HIV/AIDS and treat patients. Perversely, the large inflows of donor assistance targeted to these diseases (through so-called vertical disease programs) have weakened the infrastructure and drained the human resources required for preventing and treating common diseases (such as diarrhea and upper respiratory infections) that may kill many more people. Furthermore, multiple donors, each with their own priorities, bureaucratic requirements, and supervisory structures, have created waste and confusion within recipient nations. Last, an important concern is the sustainability of these vertical programs, because donors' funds may not prove stable or long lasting. For recipient countries, these inflows have created difficult challenges in the management of the health sector.

[1]The term "health expenditure inflation rate" refers to the real rate of increase in health expenditure per capita.

D. General Findings and Policy Actions

Sound public policy should be based on scientific information, evidence, and solid analysis. Economic policymakers can glean several major lessons from research and from countries' varied experiences in organizing and financing health care. This accumulated knowledge has taught us which policies are sound and which are not. The following general findings and actions can be applied in most countries to improve health care.[2]

- *The good health of a population significantly contributes to human capital development and economic productivity.* Numerous micro studies have found that a child's health has a large impact on his or her ability to learn and retain knowledge (Novello and others, 1992; Jackson, 1993; and Kramer, Allen, and Gergen, 1995). Adult health status affects the size of the labor force, worker absenteeism, and worker efficiency (Mushkin, 1962). Recent macro studies have found that the health of a population can significantly influence a country's rate of economic growth (Bloom and Canning, 2000; Fogel, 2004; and World Bank, 2004).
- *Health resources should be allocated to achieve three objectives*: (1) an optimal level of health status distributed equitably; (2) an adequate degree of risk protection for all; and (3) the highest possible level of public satisfaction for the entire population. Achieving these objectives will require making difficult decisions about trade-offs, especially between equity and efficiency.
- *One size does not fit all.* Nations are at different stages of socioeconomic development and have different epidemiological patterns. They differ in their resource capacity, knowledge base, human resources, and institutions. What works in the United Kingdom would not likely work in Kenya. Few general health policy guidelines can apply to all nations, and a universal performance standard does not exist.
- *Governments should establish institutions to finance health care and pool risk, rather than relying only on the free market.* However, the way in which the market and government can work efficiently and appropriately varies by function, for example, financing versus the provision of health care. Although many countries have tried regulatory remedies to correct the market failures in the voluntary private insurance market, no country has succeeded. On the other hand, international experience shows that government-managed "free" public health services tend to be inefficient

[2]A useful collection of papers in Musgrove (2003) covers many policy issues relating to health economics.

and nonresponsive to patients' needs. Market mechanisms can provide services that are more efficient and higher in quality than government-managed free services.

- *Because market competition is capable of addressing only the efficiency issue, the government has to be responsible for the equitable financing and distribution of essential health goods.* At a minimum, the government should (1) finance and provide public and merit goods—for example, health education, immunizations, and maternal and child health services; (2) target and subsidize primary care and hospital services for the poor; (3) establish national or regional health risk-pooling (for example, insurance) mechanisms for formal sector workers and their families; (4) establish regulations to remedy market failures and monitor market performance; and (5) educate the public to be informed consumers of health services. In carrying out these responsibilities, the government may have to increase its health budget, build its institutional capabilities, and strengthen its human resources.

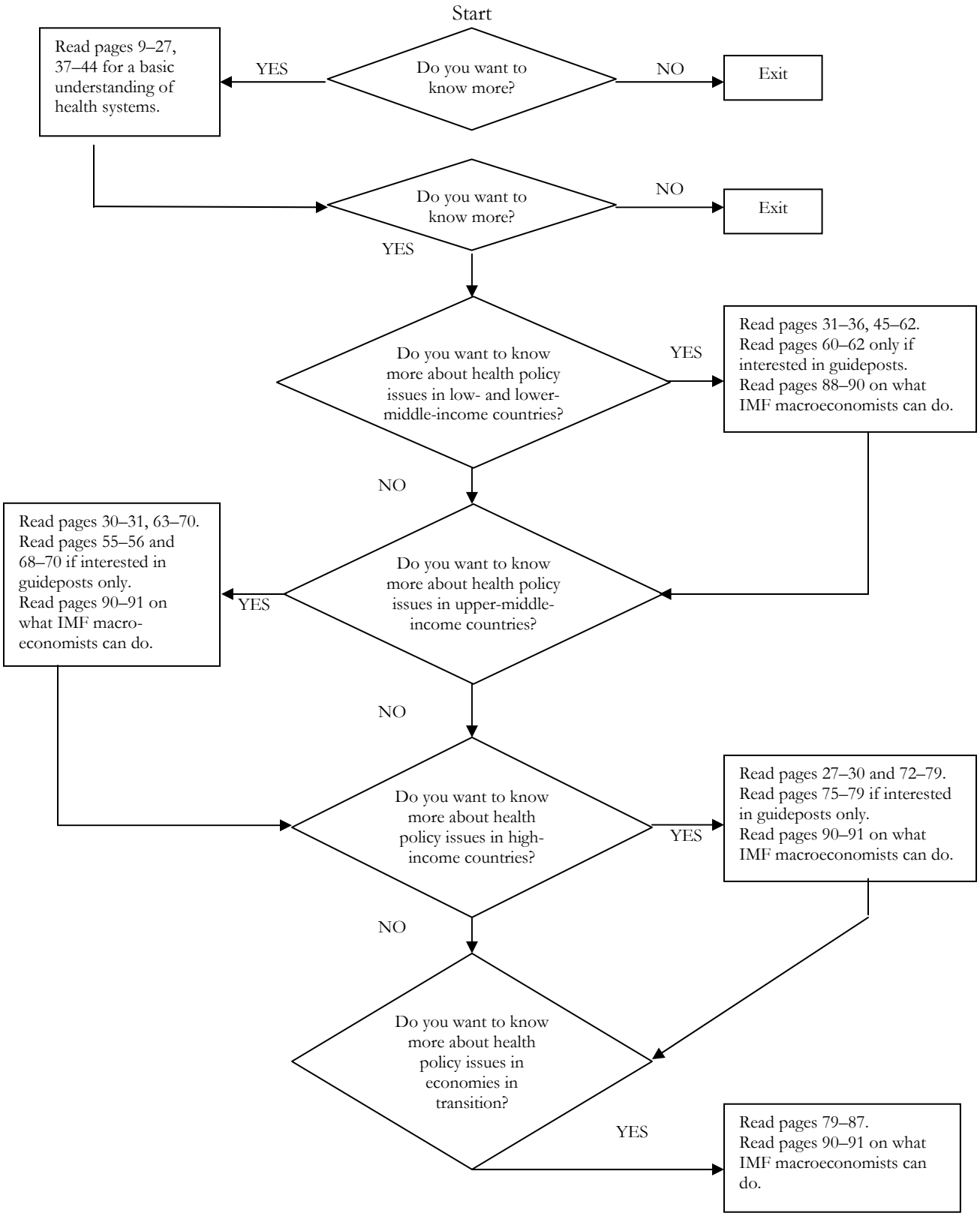
- Because publicly financed health benefits in developing economies usually favor higher-income households, *governments should shift their resource allocations to target their subsidies to the poor and to those in the greatest need.*

- Costly technology used by advanced economies to provide sophisticated medical treatments as well as clean water and sanitation is often unaffordable for low-income countries. Yet the potential for developing affordable technology is not exploited by industrial country researchers or pharmaceutical firms because it is not glamorous or profitable. *To increase social benefits for the poor, international organizations should promote the use of affordable technologies and support investment in international public goods, such as the development of vaccines for malaria and HIV/AIDS.*

E. Road Map to the Primer

This primer aims to provide macroeconomists with the essential information they need to understand the economics of the health sector. They need to know which health policies may improve the equity and efficiency of health care, as well as which policies will improve the level of health status, reduce poverty, and enhance social and political stability. As a primer, it does not provide in-depth information or complete evidence for the arguments made, but offers an extensive bibliography for those who desire further information. It also highlights situations in which macroeconomists should engage health sector specialists in policy formulation exercises.

Figure 1. A Road Map for Reading the Primer



In particular, subsequent chapters address six basic questions. Chapter 2 examines why it is critical for macroeconomists to understand health policy issues. Chapter 3 discusses the basic facts (and myths) that macroeconomists should know about the health system and the financing of the health care market. Chapter 4 examines both the common health policy challenges confronting all countries as well as the challenges particular to countries at different stages of development. Chapter 5 explores what analytical framework should be used to assess the health care system.

Chapter 6 provides ideas on guideposts that can be used in considering health policy options for countries at different stages of development. This particular chapter is lengthy because health issues and their economic considerations vary significantly across countries, and to be relevant, it is necessary to discuss the health issues and policy separately for each stage of development (see Figure 1). Finally, Chapter 7 offers concluding thoughts on what specific advice macroeconomists can provide, given their typically peripheral role in health policy, to ensure that health policy issues are taken into account.

CHAPTER

2 Why Is It Critical for Macroeconomists to Understand Health Issues?

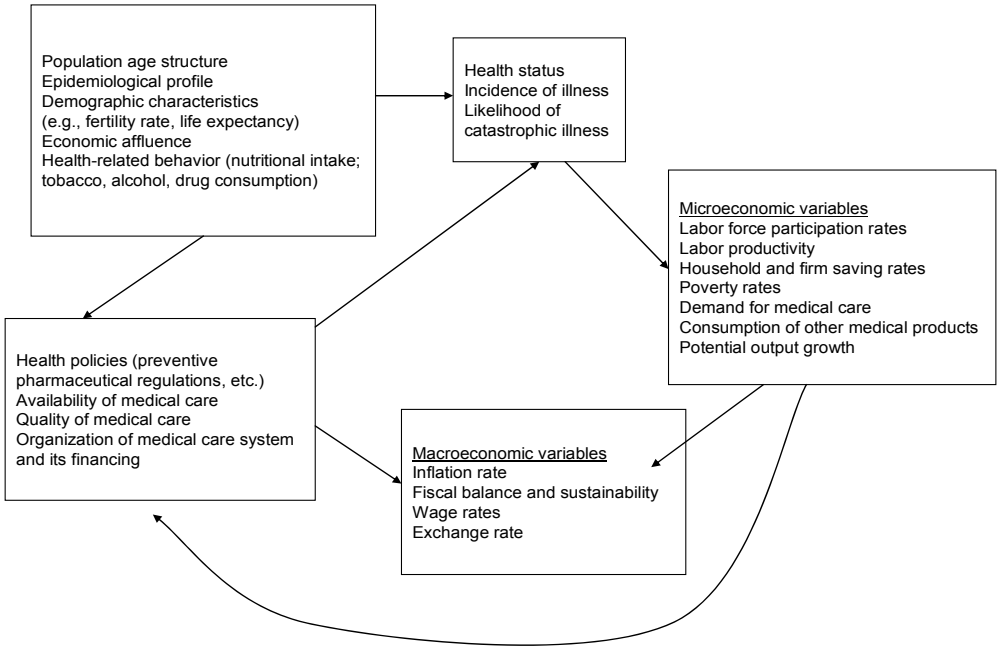
As a general rule, issues of health care policy have not generally been seen as the domain of macroeconomists. Only in recent years, with the report of the World Health Organization's (WHO) Commission on Macroeconomics and Health (CMH) (WHO, 2001, 2002), has there been a greater focus on why health issues are relevant to macroeconomic policymakers and, in particular, ministers of finance. That report also provided further support for the prominence of health goals (for example, reduced infant and maternal mortality rates as well as reduced prevalence rates for HIV/AIDS, malaria, and tuberculosis) in formulating the MDGs. The CMH initiative principally sought to demonstrate that progress in improving health in low-income countries could be a critical factor influencing the growth potential of a country. In particular, the CMH report explored the various ways in which better health status could improve the quality of the labor force; enhance productivity, in both the short and the long run; limit the extent to which catastrophic illnesses can lead to households falling into poverty; raise household saving rates; and reduce fertility rates.[3]

In what follows, a broader set of arguments is laid out to further strengthen the case for macroeconomists to put issues of health care policy on their agenda as they seek to understand the functioning of the macroeconomy. Such arguments pertain not only to low-income countries but to middle-income and advanced economies as well. The principal focus will be on how issues of health influence the macroeconomy.

A shorthand version of the argument is shown in Figure 2. One starts with the recognition that the health status of a population is fundamentally influenced by its age structure, its exposure to various epidemiological vectors (in part owing to geographic factors), its degree of affluence, its behavior (concerning nutrition and exposure to adverse epidemiological

[3]These points were developed principally by the report of Working Group I of the CMH (WHO, 2001, 2002).

Figure 2. Channels through Which Health May Influence Macroeconomic and Microeconomic Variables



factors), and its demographic characteristics (for example, high or low fertility rates). This starting point will obviously influence the demands placed on a country's health care system. And, as noted by the CMH, the population's health status is likely to have an important influence on various microeconomic labor market and saving variables, which can influence the state of the macroeconomy.

But the health status of a population is also influenced in part by the nature of the health policies pursued by a government—the provision of public goods (such as immunizations and vaccinations), the quality of the regulatory policies with respect to pharmaceuticals, and the extent of activism in the control of public "bads" (such as antidrug or anti-tobacco policies)—and by the quality and quantity of the medical services available to the population (whether from the public or private sector). In general, it is reasonable to assume that the health status of individuals is positively influenced by the activities of a country's health care system.

Yet how a society organizes itself in terms of the implementation of its health policies and in the financing of the provision of health care is also likely to have a direct and *independent* impact on macroeconomic variables, recognizing that the extent of the impact will differ across countries (depending on the

size and relative importance of the health care sector). And of course, the state of the macroeconomy—the level and distribution of income in particular—will influence the capacity of a government and the private sector to provide health care and implement health policies.

The channels through which health policies, and the organization of the medical sector and its financing, can influence macroeconomic variables include but are not limited to the following relationships.[4]

- *Pressures for the introduction of new medical technologies and drugs:* As new technologies and drugs become available to address medical problems, it is likely that doctors and medical practitioners will wish to prescribe them and that patients will demand their availability. In a government-financed health system, or one under which third-party payers (employer-financed insurance systems) bear the cost of health care, there will be pressures from the public or insured populations to accommodate these demands, which will give rise to budgetary pressures. The higher cost of such new products and procedures may ultimately be reflected in the consumer price index (see Lubitz, 2005).
- *Other underlying demand pressures for increased health spending:* Whether from the impact of an aging population or the effects of a high prevalence of a specific disease (for example, HIV/AIDS), pressures from increased demand for health care will develop. Again, particularly when the government intermediates the financing of health care, pressures on the budget will emerge. Recent projections by the Organization for Economic Cooperation and Development (OECD, 2006) of rising fiscal outlays on the health sector illustrate this phenomenon. For example, the OECD projects that for Korea and Mexico, health and long-term-care spending will rise from 3.3 percent of GDP in 2005 to 11.9 percent by 2050 in the absence of cost-containment policies (and as high as 9 percent of GDP even with the implementation of such policies). Smaller but nevertheless substantial increases (on the order of 40–100 percent) in the share of health spending in GDP are projected for many other industrial countries.[5]

[4]There are obvious questions to be raised concerning the relationship between the set of health policies and health care organization prevailing in a country and its impact on the health status of the population. Does the health care system actually deliver results in terms of improving the population's health status (often measured in terms of either quality-adjusted or disability-adjusted life years)? What factors determine the composition of spending on health care? Who in the society decides what is provided in the way of health care, both in terms of curative and preventive interventions?

[5]Also see Follette and Sheiner (2005).

- *The "Baumol effect" on the relative cost of the health care sector:* If there is less capacity in the medical sector for increased productivity relative to that in the rest of the economy (given its labor intensity), one would observe relative price increases in the sector, as sectoral wages, rising at the rate of national productivity growth, outpace sectoral productivity gains.
- *Pressures on health financing may give rise to a need to raise tax or insurance rates or product prices:* Governments may seek to address the fiscal imbalances associated with higher health spending by raising tax rates (for example, the payroll tax rate), with potential adverse effects on efficiency (reflecting the excess burden created by higher tax rates). Companies that provide insurance coverage for their employees or retirees may find that rising health care costs constitute an increasingly large share of compensation costs, putting pressure on product prices and raising competitiveness concerns. This may also lead to an increase in the copayment rates borne by employees.
- *Organization of the financing of health care will influence key macroeconomic variables:* The relative balance struck between out-of-pocket financing by households, social health insurance (with alternative copayment provisions, such as among employee, employer, and government), and publicly financed provision (through general tax revenues) can have obvious differential effects in terms of the level of tax rates and the saving rate. It can also influence the potential for health care costs to influence whether serious health incidents cause households to fall into poverty (because the cost of care depletes assets or from the loss of income experienced as a consequence of the illness episode).
- *Prospects of higher medical costs may be a factor influencing household saving decisions:* There is some evidence in the United States suggesting that the elderly may be saving more than would be expected, given their stage in the life cycle, to ensure the availability of resources to finance catastrophic or long-term care in later years. In countries reliant on household savings to finance health care, one may observe the introduction of 401(k) types of saving incentive schemes or even compulsory saving mechanisms (for example, Medisave in Singapore).
- *"Externality effects" of spending in the health sector:* Many low-income countries are now the recipients of significant external grants to finance expanded health service delivery in relation to HIV/AIDS treatment. In the short run at least, the need to substantially increase salaries to attract and retain medical sector workers may create pressures for higher wages for skilled workers in other parts of the public sector.
- *Capital market issues:* If a country's future fiscal sustainability appears to be jeopardized by the prospect of the coincidence of an aging population and rising health care costs, sovereign risk questions may arise in financial markets, leading to a higher risk premium on government borrowing.

- *Possible current account effects of spending in the health care sector:* There are a number of ways the health sector may affect the current account of the balance of payments. For some advanced countries, the health care and pharmaceutical sectors may be a source of export receipts (through the export of drugs or the purchase of health care services from local providers). Medical tourism and the export of medical personnel may also be a source of foreign exchange receipts for some low- and middle-income countries. For countries where medical sector spending is a significant share of GDP, one could speculate as to whether it is more or less import-intensive than other forms of spending.
- *Political economy dynamics arising from the health care sector:* Policies in the health sector may give rise to important political economy effects. In countries with social health insurance mechanisms, businesses may attempt to shift a higher share of the cost of financing health care provision to the government.
- *Health status issues may limit the capacity of government to implement other policy reforms:* If there is a high incidence of disability among the older members of a country's workforce, this may constrain a government's capacity to raise the formal retirement age of its public pension system.

It is not easy to be definitive about the strength of the respective roles of government and the private sector in the financing and provision of health care in terms of intermediating these relationships. On the one hand, if the government is heavily engaged, there may be political economy pressures for higher spending on health care. In contrast, it might be thought that if the private sector is the principal source of financing of health care (with only a limited role for government), then, although there may be pressures for higher spending, these may be constrained by the capacity of the private sector to bear these costs. But the empirical evidence suggests otherwise because of market failure. Certainly in low- and middle-income countries, where the private sector plays a dominant role, the pressures for spending remain strong. Households go into debt or deplete both their own and their relatives' assets to finance the purchase of medical care. For example, in China, less than 15 percent of national health expenditure is financed by tax revenue. Yet that has not prevented real health expenditures from rising by 15 percent annually, substantially in excess of GDP growth.

The role of macroeconomists in relating to government policies in the health sector is also a challenging question. The above discussion suggests that both the health status of a population and health care delivery systems can influence key macro variables—the fiscal balance, tax rates, wage rates and competitiveness, prices, and possibly even interest rates and the current account. Again, one could argue that in a system where the government does not intermediate in the financing of the health sector, the decision of households regarding the share of their income devoted to health care should

not be distinguishable from the decision of households to allocate their income to other forms of consumption. If individuals attach a high value to being healthy, to living a longer and healthier life, and if health care interventions can deliver these "goods," it should be a matter of indifference to macroeconomists whether the share of national income devoted to health care is 10 percent or 25 percent (see Cutler, 2004). Yet the role of market failure in the health sector suggests that the pressure for higher spending derives from more than demand factors, such that any adverse macroeconomic effects from the expansion of the sector cannot be downplayed as simply an unfortunate consequence.

But in most advanced countries, and indeed in many middle-income countries, governments *do* heavily intermediate the financing of health care. Therefore, it does matter who bears the burden of financing of health care (particularly if it leads to impoverishment of families). It also matters that such spending may have macroeconomic effects. These are particularly problematic issues because the benefits of health care will inevitably accrue to some segments of the population (say, retirees) as opposed to those who bear a disproportionate share of the financing (say, wage earners or general taxpayers) or to those who may be affected by the macroeconomic effects of higher spending on health care. These issues become even more difficult in light of the relative effectiveness of alternative approaches to organizing health care delivery or financing, or of the value of different interventions in influencing health status. Macroeconomic policymakers (or the IMF, in the context of exercising its surveillance responsibilities) cannot be wholly indifferent to the question of why some countries allocate significantly greater shares of their output to health care and yet do not observe commensurately better levels of health status (say, as measured in quality-adjusted or disability-adjusted life years).

CHAPTER

3 Facts and Myths about Health Care and the Health Sector

A. Basic Facts about the Health Sector

Certain basic facts about the health sector and health care are not widely known. This section explains what macroeconomists should know on this subject as they participate in the formulation of health policies.

- *There is a trade-off between equity and efficiency.* Equity becomes a paramount consideration when everyone needs basic health care to maintain life and relieve pain and suffering. Without insurance, health expenses can also be a primary cause of falling into poverty. Therefore, basic health care and risk protection have to be equitably distributed, and price should not be used as the primary rationing tool. This implies a significant trade-off between equity and efficiency. A society's social values and political philosophy influence how a country approaches this trade-off.
- *Resource allocation within the health sector also involves complex trade-offs.* The trade-off goes beyond equity and efficiency. Health systems are developed to achieve multiple outcomes. Contrary to simplistic belief, the allocation of resources in the sector cannot be based solely on cost-effectiveness, with effectiveness measured only as health gains. The uncertainty of potentially large financial burdens arising from serious illness creates a legitimate demand for insurance against expensive hospital services. In public and private financing of health care, resource allocation has to aim at three common objectives: improving the population's health, protecting people from financial catastrophe, and meeting the public's expectations regarding the availability of health care services. These multiple goals inevitably imply difficult trade-offs.
- *Markets alone cannot produce efficient outcomes in the health care sector.* The health care sector consists of more than a dozen markets, most of which suffer serious failure owing to an asymmetry of information, imperfect agency relationships, barriers to entry, and moral hazard. Evidence shows that the supply side (technology and induced demand) drives health cost inflation more than consumer demand. Specific market failure examples

such as adverse selection (Rothschild and Stiglitz, 1976; and Cutler, 1996) and risk selection[6] (Luft, 1986; and Holahan, 1997) seriously impair the efficient operation of insurance markets. Moral hazard from insurance also produces inefficiency. In the service-provision market, physicians have the market power to practice price discrimination (Kessel, 1958) and induce demand (Yip, 1998). In factor markets, patent law protections offer monopolistic profits for pharmaceutical products. Licensing laws restrict free entry and competition. These market failures cause inefficiency, high health expenditure inflation, and inequity. International experience has taught us that some of these market failures can be corrected, but others are beyond our current capability to address. In summary, a blanket policy to allow the health sector to operate fully on a free market basis will not yield efficient outcomes. Market competition can be used only selectively for the benefit of a country's health and welfare.

- *The distribution of health expenditure is highly skewed.* In rich and poor countries alike, approximately 20–25 percent of a country's total health expenditure in any year is spent on 1 percent of the population, and approximately 50 percent of expenditure is spent on 5 percent of the population. For 20–25 percent of the population, there is no spending for health care in a given year. Table 1 gives the contingency table of U.S. health expenditure (that is, percent of health expenditure by percent of the population), which is fairly typical of most countries. One-third of expenditure is concentrated on only five medical conditions (Table 2). But our ability to predict which individuals are at highest risk in any given year is very limited. Thus, this skewed distribution has at least three important economic implications: (1) health insurance is necessary, as shown in the seminal paper by Kenneth Arrow (1963); (2) adverse selection inhibits the establishment of a stable health insurance market, as shown by substantial empirical evidence (Rothschild and Stiglitz, 1976; and Cutler and Zeckhauser, 2000); and (3) risk selection by insurers leaves the burden of covering the high-risk population to the government (Davis, 1975) and reduces the quality of medical services (Newhouse, 1992).

- *The supply side has a greater impact on health care efficiency, quality, and spending than does the demand side.* Moral hazard on the demand side is well known. What is less understood and measured is the fact that monopolistic power on the supply side has a greater impact on efficiency, quality, and spending. A U.S. government–funded ($100 million) study by the RAND Corporation in the early 1970s measured the price elasticity of demand for medical services in the United States and found the elasticity of health

[6]This refers to situations in which insurance companies select among potential insurees.

Table 1. United States: Contingency Table of Health Care Expenditure, 2002
(All age groups)

Percent of Total Population	Percent of Total Health Care Expenditure
1	22
5	49
10	64
50	97

Source: Yu and Ezzati-Rice (2005).

Table 2. United States: Health Expenditure for Five Most Costly Conditions, 2002

	Condition	Health and Expenditure (In Billions of Dollars)	Percent of Total Health Expenditure
1	Heart disease	70.0	8.3
2	Trauma	55.8	6.9
3	Cancer	48.4	6.0
4	Mental disorder	47.5	5.9
5	Pulmonary conditions	45.3	5.6
	Total	267.0	32.7

Source: Olin and Rhoades (2005).

expenditure to be about 0.2 (Newhouse, 1977). Other studies have found an elasticity range of 0.1 to 0.4 for low-income countries. It is, however, important to note that the elasticity could be greater than 1.0 for poor families in low-income countries (Gertler and van der Gaag, 1990; and van der Gaag, 1991).

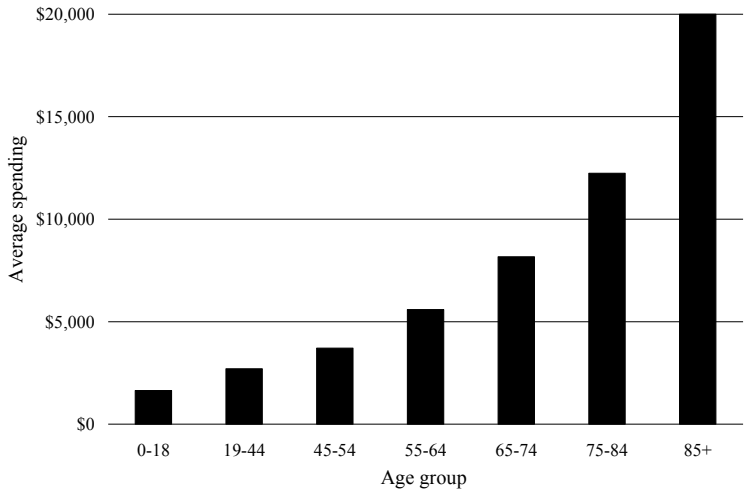
- On the supply side, the asymmetry of information between the physician and the patient as well as the urgency of some medical conditions give physicians the power to *induce* demand and set prices. The elasticity of *induced* demand (that is, the elasticity of prescribed demand to price) has

not been rigorously measured because of data limitations. Nonetheless, the U.S. government accepted the value of 0.5 for policy planning purposes. For low-income countries, the stylized facts show that this elasticity is much higher than in the United States, because professional ethics and quality regulations are less developed. It is well known that physicians in low-income countries can drastically change the types of drugs prescribed, tests ordered, and length of hospital stay ordered, in response to price changes that affect their income. The vast number of case studies indicate that the elasticity of *inducement* would be near 1.0 in these countries. In summary, the elasticity of *induced* demand is comparatively larger than the price elasticity of demand.

- In advanced economies, where there is an adequate stock of physicians, an increase in the aggregate supply of physicians raises total health expenditure. This is because disease etiologies provide almost endless opportunities for specialization. An increase in the number of physicians usually leads to growth in subspecialties, which leads to a greater number of referrals. Consequently, the quantity of services and health spending rises. This has happened, for example, in the United States, further fragmenting health care with questionable benefit for many patients. In summary, to promote efficiency and manage expenditure inflation, it is more important to control the supply side than to regulate demand.
- *Per capita health spending increases with age.* Figure 3 shows that, in the United States, individuals between ages 65 and 74 typically spend three times more on health care than those aged 18–64. This ratio increases to four times for the group aged 75–84. Other advanced economies show similar relationships.[7] By 2010, most advanced economies will begin to experience an accelerated rate of increase in the elderly dependency ratio, with the ratio tripling for many by 2030. Middle-income and low-income countries are experiencing similar demographic transitions, though starting a decade or two later (Heller, 1998). As a country's population ages, pay-as-you-go (PAYG) methods of public financing for health care will place an increasing tax burden on the working-age population. This burden will have an impact on both the labor market and the national saving rate.

[7]This relationship may be moderated somewhat to the extent that increased life expectancy is associated with improved health status, but the extent to which the elderly delay the point at which higher medical costs are borne remains an important source of uncertainty (see Heller, 2004; and Economic Policy Committee and European Commission, 2006).

Figure 3. United States: Average Health Care Expenditure by Age Group, 1999
(In dollars)



Source: U.S. Government, Center for Medicare and Medicaid Service (2005).

B. Myths about Health Care Systems

As discussed, health policy deliberations are hampered not only by ignorance about the basic facts, but also by the prevalence of several widely held myths. Some of these are based on standard neoclassical economic theory that is itself unsupported by empirical evidence. Nonetheless, these myths have strongly influenced policy debates around the world, particularly in the United States. Five such myths are debunked below, in the hope that policymaking can be based on solid evidence.

- Myth #1: National or social insurance restricts patients' choice of providers; private insurance gives much greater choice.

This myth is widely held in the United States and has distorted the public's understanding of social insurance. In fact, Canadians, covered under social insurance, have total freedom to choose providers under their national health insurance, and Germans have much greater freedom of choice under their social insurance than do Americans under private insurance and managed-care plans.

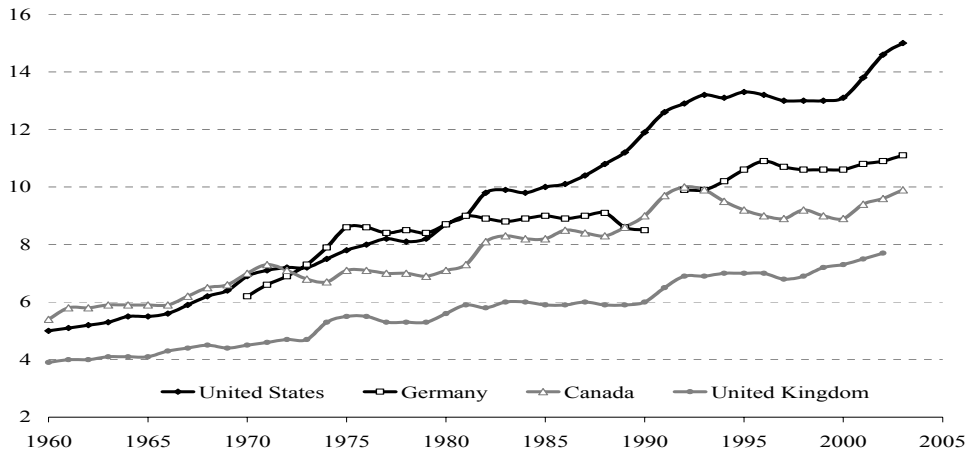
- Myth #2: Health expenditure inflation cannot be managed because it is driven by the demand for services produced by new, cost-increasing technology.

Health expenditure inflation rates have indeed increased since the late 1960s. Economists have hypothesized two reasons for this trend. First, three decades ago, most U.S. economists believed that expenditure inflation was caused by the moral hazard arising from increasing insurance coverage. This hypothesis turned out to be unfounded when insurance coverage in the United States remained level or declined in the 1980s and health expenditure inflation continued unabated. Second, many argue that high health expenditure inflation can be attributed to the rapid advance in, and increasing availability of, expensive medical technologies. Economists argue that new technology is endogenously determined by health insurance (Weisbrod, 1991). This hypothesis is not valid for all types of health insurance, though it might be valid for the United States, which relies largely on private insurance. In OECD countries with extensive insurance coverage, however, wide use of new medical technology still coexists with much lower rates of expenditure inflation.

Evidence shows that all major advanced economies except the United States have been able to manage their health expenditure inflation since the mid-1970s. Prior to the mid-1960s, advanced economies spent 4.0–5.5 percent of GDP for health care and experienced similar health expenditure inflation. In the late 1960s, all advanced economies experienced rising rates. Countries have tried different methods to control and manage this problem. By the mid-1970s, all major advanced economies except the United States were able to keep the total share of national health expenditure in GDP under control. As shown in Figure 4, the rise in expenditure share for the major advanced economies became less steep, whereas the slope of that for the United States remained basically unchanged. These other advanced economies have, however, been adopting new medical technology just as rapidly as the United States. Thus, international experience demonstrates that the main cause of health expenditure inflation is not new medical technologies. The cause is something more fundamental.

Other advanced economies have been able to manage health expenditure inflation pressures by establishing an effective budget constraint over the entire health sector. A "closed" budget encourages greater efficiency, including the curtailing of less cost-effective medical practices. Health expenditure inflation rates differ because most major advanced economies have been able to break the endogenous link between medical technology and health insurance by deciding exogenously on the level of overall health insurance expenditure. The U.S. health financing system provides an "open" budget to the health sector. This gives providers the ability to shift costs from one plan to another. In other words, the United States does not have a hard budget constraint for its health sector.

Figure 4. Selected Countries: Total Health Care Expenditure, 1960–2003
(Percent of GDP)



Source: OECD (2005).

Americans argue that other countries have been able to manage their inflation rates by underinvesting in health care, which has resulted in long waits for certain tests and surgical procedures. However, patients in most advanced economies—the United Kingdom and Canada are the two exceptions—have not had to wait long for nonemergency tests and surgeries. Recently, the United Kingdom has sought to eliminate long waiting lists by increasing its health spending from 6.8 percent of GDP to about 8 percent of GDP (see Aaron, Schwartz, and Cox, 2005). Canadians have had long waits since the late 1980s, owing to the drastic cuts made in health budgets during the economic downturn, but that situation is improving since the economy has revived and the federal government has increased the health budget.

- Myth #3: Government-financed health services inevitably become underfunded, resulting in shortages, inferior quality of services, and long waits.

Besides the public-good elements of the health sector, most countries use general revenue to finance health services for reasons of equity and risk protection. Most countries also accept the principle that health care is a basic need—that it is inappropriate to use price to ration health care according to people's ability and willingness to pay. Because governments of low- and middle-income countries are financially unable to meet all demands, their public health services are usually underfunded. Consequently, these services are rationed by other means, such as long waits for treatment. However, this is not the case for advanced economies. Most have been able to balance

supply with demand. The notable exception is the United Kingdom, which relies on the political process at the central government level to set its national budget for health. U.K. health care has to compete with other national priorities, such as education, social security, and national defense. The public, acting through the political market, seems to be willing to accept wait-rationed treatment.

- Myth #4: All preventive care is cost-effective.

Policymakers often make the erroneous assumption that the cost of preventing a disease is always less than the cost of treatment. This is not so. Besides the cost of supplies, effective prevention programs often require the identification of the population at risk and compliance by a high proportion of that population with the preventive regimen. These efforts can be very costly. For example, studies show that it is more cost-effective to treat tuberculosis than to prevent it (Borgdorff, Floyd, and Broekmans, 2002). The influenza vaccination is not cost-effective for healthy working adults (Bridges and others, 2000). In addition, some preventive measures produce serious side effects that result in permanent disability. Preventive policy should thus be judiciously based on cost-effectiveness analysis, not on impressions.

- Myth #5: All private sector providers are more efficient than public sector providers.

Similarly, macroeconomists often assume erroneously that private sector production of health insurance and health services is more efficient than public sector production. This is not so. Studies consistently have found that the cost of private insurance is higher than public insurance because of the difference in marketing cost. In the provision of health services, studies in the United States have found that private sector production could be more efficient if there were sufficient competition. On the other hand, Singapore has found that private sector hospitals charge much higher prices for hospital services that are roughly of the same quality as those provided by public hospitals.

C. Basic Health Economics: Health Markets and Market Failures

As noted above, empirical studies of the past three decades have confirmed the presence of serious market failures in the health sector. Most of these failures are caused by factors pervasive in the various markets of the health sector—that is, an asymmetry of information, imperfect agency relationships, and moral hazard.

- In the *financing market*, the asymmetry of information between the consumer and insurer about the former's health condition results in significant adverse selection. The fact that health risks are concentrated in

a small portion of the population results in serious risk-selection efforts by insurers. Although insurance is needed to cover the uncertainty of future illness, insurance creates moral hazard.

- In the *health service provision markets*, one would not expect competition to work when patients suffer from urgent or life-threatening medical problems. In such situations, patients are unlikely to "shop around," given the absence of sufficient information to discriminate among sources of supply. Moreover, asymmetry of information gives health practitioners strong monopolistic power to set prices and induce demand. Regarding the supply of health practitioners, to ensure patients' safety, the government and the medical profession have erected high barriers of entry regarding who can practice medicine.
- In the *pharmaceutical and medical-device markets*, patent laws give monopolies to new drugs and new medical technologies in order to encourage research and development. Although these barriers to entry and monopolies have been established for sound social and economic reasons, they have nonetheless impaired the competitiveness and efficient operation of markets.

Recognizing these serious market failures (or the absence of the prerequisite conditions for a workable competitive market), many countries have turned to the government to finance and provide health services. The past 50 years have shown both the benefits and limitations of state action, especially in the promotion of health. Governments have helped to deliver substantial improvements in education, health, and economic security. Without this government role, sustainable development, both economic and social, would have been impossible (see World Bank, 1997b). However, not all experiences with state action in the health sector have been encouraging. Government decisions are, of course, based mostly on bargaining among political alliances. Thus, the relative powers of different interest groups can greatly affect decisions on resource allocation and on those who benefit from and pay for public programs. Often, a disproportionate amount of public health services goes to the affluent and the urban middle class rather than to the poor. Moreover, curative hospital services are favored over cost-effective primary and preventive services.

Because most governments operate by "command and control"—using bureaucratic rules to manage operations—and public facilities usually operate as a monopoly, even the best intentions of bureaucrats can atrophy from a lack of information and insulation from patients. Health practitioners' interests often begin to supersede those of patients and the general welfare. Politics can then dominate public health services, turning them into major centers for patronage employment, particularly when labor unions become bases of political support. In many low- and middle-income countries, because of the absence of appropriate checks and balances, corruption,

fraud, kickbacks, and under-the-table payments to physicians and nurses have become widespread. Hence, public health services often become unresponsive to the needs of patients, and the efficiency of public health services deteriorates.

How a country finances and provides health care depends on the objectives that country pursues. Because there are serious market and government failures, the policy question is not one of either market or government, but rather the *relative* degree of each and how to harmonize them. The respective roles of the government and of the market are ultimately decided by societal objectives set for the health system, with these objectives shaped by the values embraced by the society. For instance, markets normally cannot produce equitable health or health care because of income, gender, and racial inequalities in a society. If a country gives priority to equity, then the government has to take a primary and strong role in financing health care. In sum, a country's social values and priorities determine the extent to which that country relies on the market as opposed to the government. Nonetheless, it will enhance rational policymaking if objectives are clearly set forth and both market and government failures are well understood.

When there are serious failures of both market and government, sound public policy becomes much more difficult to develop. Policymakers may then choose a strategy that will produce a better, but not the *best*, outcome—in essence, a second-best solution.

CHAPTER

4 Health Policy Challenges and Issues Confronting Nations

Although specific issues confront nations at different stages of development, several issues confront all nations throughout the world. We first present the universal issues, then the ones for each stage.

A. Major Issues Confronting All Nations

Most nations, rich or poor, face the problem of per capita health care costs rising faster than per capita GDP. Consequently, health care outlays are absorbing an increasing share of government, employer, and household incomes. This constant fiscal pressure forces nations to confront two basic questions: how to finance this rising burden and how to contain the pressures for health expenditure growth.

Several common factors on the demand and supply sides have caused the rapid rise in health care costs globally. On the demand side, the HIV/AIDS pandemic and people's heightened expectations and demands are the principal causes. Influenced by worldwide distribution of medical news, sensational headlines on medical breakthroughs, and aggressive drug advertisements by pharmaceutical companies, people are bombarded with new information about diseases and their treatments. We have become much more conscientious about our health and illnesses, and expectations are raised about medicine's ability to treat and cure. Some new expensive technologies may yield only marginal benefits, but news of their discovery distorts consumer perceptions. On the supply side, medicine and the medical profession itself have become more commercialized. Profit has also become a strong motivating force in biomedical research. Driven by the profit motive and protected by patent laws, new medical science and technology produce mostly cost-increasing new treatments. Concomitantly, hospitals and physicians who adopt new sophisticated medical technologies gain in both reputation and profit.

Another driver increasing costs involves the socialization of medical practices throughout the world. The United States has become the dominant force in

medical education and research. Its emphasis on specialty medicine and expensive high-technology treatments has profoundly influenced global medical practices, and this is reinforced by regular education and continuing education programs, role models, and tele-medicine. In effect, foreign physicians have been socialized to adopt the "American practice standard," regardless of whether their country has the resources to pay for it.

The need to balance demand and supply for health services and drugs is another critical issue confronting all nations. Few nations have the resources to satisfy people's needs and wants in health care. Consequently, health care has to be rationed. Instinctively, economists would argue for a rationing by price. However, reasonable health care is a necessity of life, so that equity concerns must also be a key factor in policy decisions. Also, illnesses are uncertain and income is inequitably distributed in most countries. Thus, price rationing favors the affluent, whereas lack of insurance impoverishes most families that have large medical expenses. For these reasons, most nations provide nearly free basic health services or cover their citizens under social health insurance programs. As a result, price is not used as the primary rationing tool. Long lines, waiting time, travel distance, lower quality service, and outright unavailability frequently serve as effective rationing tools. But when carried too far, rationing can generate public dissatisfaction and political whiplash. This was the experience in the United Kingdom and Canada and, more recently, in the United States with respect to managed care. Bedside counseling by physicians to induce patients to demand fewer services has been used successfully in many advanced nations, but the Internet and the popularization of medical information have weakened this constraining influence. Most recently, the followers of free market ideology have continued their push to ration by price, labeling this as "consumer-driven" health plans. This approach is not likely to work, because the asymmetry of information places providers in a dominant market position and individual patients' choice is not likely to exert much competitive force. Rapid health cost inflation is unlikely to be contained under this strategy. How to ration scarce health resources will thus remain a critical issue.

Finally, a health system is a dynamic organism. All nations confront the medium-term challenge of adjusting their health systems to meet changing epidemiological and demographic conditions. Disease patterns do change with socioeconomic development, with demographic change (for example, with aging, the prevalence of chronic diseases such as Alzheimer's will increase), and, in the future, possibly with climate change. New infectious diseases can emerge, as illustrated by the recent outbreaks of SARS (severe acute respiratory syndrome) and avian flu. The prevention and health service delivery systems will thus have to change accordingly. New, more effective technologies and drugs, typically more costly, present a continuing challenge to governments and insurance companies forced to decide whether to sanction (and finance) their use.

Are these insoluble problems? To deal with health cost inflation, authorities may consider the following: (1) setting an effective global budget for the health service sector so providers have to lower costs and compete for patients, including by adopting new cost-reducing technologies and new management tools, and reforming their organizational structure for efficiency gains; (2) mandating that households save a portion of their wages annually in order to prefund the high costs of health care that will be incurred later in life; (3) offering incentives with public funding to develop cost-reducing technologies; (4) altering payment systems to promote cost-reducing technologies; (5) evaluating new drugs and technologies in terms of their cost-effectiveness, including compared to established technologies and drugs; and (6) establishing an effective long-term budget for the prevention of HIV/AIDS, and allocating a specific portion of the budget for this goal.

To control the pressures of new technologies, medical education programs of advanced economies should seek to take into account the differences in the economic status of countries by (1) developing medical standards varying by nations' economic status and introducing these different standards into the medical curriculum, and (2) identifying role models who practice appropriate medicine for different stages of socioeconomic development and promoting them to the public.

Authorities may seek to influence the expectations of and demand for health care by (1) promoting truth in advertising for drugs and medical devices; (2) providing government funding for social marketing programs to balance the role of private advertising; (3) establishing standard protocols of treatment that take into account resource constraints; (4) capping medical insurance benefits to exclude coverage for "heroic" and experimental medical services; (5) establishing mandatory medical saving accounts (MSAs) for long-term care and catastrophic medical expenses after a given age (such MSAs could be used to purchase insurance in order to pool the risk); and (6) establishing reverse-mortgage and low-interest loan programs for catastrophic medical expenses.

B. Challenges Facing Advanced Economies

Advanced industrial countries also face several issues of their own. First, most high-income countries confront the prospect of an aging population. People are living longer and fertility rates are declining. The elderly dependency ratio is projected to increase rapidly in the next two decades. Under a PAYG system for health insurance, population aging will have profound implications for the fiscal burden placed on future generations of workers, labor market conditions, and saving and consumption patterns.

Table 3. Selected Countries: Projected Shares of Elderly People and the Support Ratio, 2006–50

	Percentage of Total Population over Age 60		Percentage 80 Years or Older		Potential Support Ratio	
	2006	2050	2006	2050	2006	2050
Asia						
China	11	31	10	23	9	3
Japan	27	42	19	37	3	1
Republic of Korea	14	41	10	31	7	2
India	8	21	10	16	12	5
Indonesia	8	24	7	14	12	4
Singapore	13	38	12	37	8	2
Thailand	11	28	8	21	10	3
Europe						
Turkey	8	23	7	15	12	4
Denmark	21	28	20	30	4	3
Ireland	15	32	17	24	6	2
Norway	20	30	24	32	4	2
Sweden	24	31	22	31	4	2
United Kingdom	21	29	21	30	4	3
Greece	23	37	16	26	4	2
Italy	26	41	21	37	3	1
Portugal	23	36	17	27	4	2
Austria	23	37	20	35	4	2
Belgium	23	33	21	32	4	2
France	21	33	23	33	4	2
Germany	25	35	18	35	3	2
Netherlands	20	31	19	32	5	2
Switzerland	22	34	21	37	4	2
North America and Pacific						
Canada	18	32	20	31	5	2
United States	17	26	21	28	5	3
Australia	18	30	20	29	5	3
New Zealand	17	30	20	31	5	3

Source: United Nations, Department of Economic and Social Affairs, Population Division (2006).
Note: The support ratio is defined as the ratio of the population aged 15–64 to the population aged 65 and over.

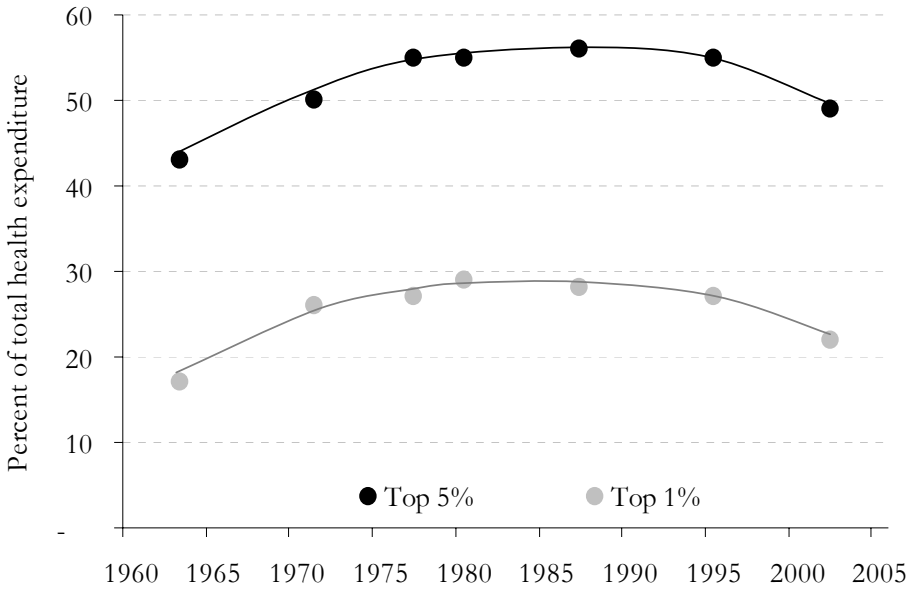
Table 3 shows how the population shares of the elderly and support ratios will evolve through 2050 for selected advanced and middle-income economies.

Population aging, combined with a changing epidemiological pattern, will pose two other challenges: pressures for a change in the health care delivery system and the likelihood of a more rapid rise in health care costs. Chronic

diseases have increased dramatically and these particularly afflict the elderly. The elderly also require different kinds of health services, especially for those who suffer from functional disability, dementia, or Alzheimer's disease. The organization of health care delivery will inevitably have to be reformed. Housing, social services, and nursing home care will need to be integrated with medical services. Also, as noted above, the growing share of the population that is elderly may lead to a more rapid increase in health expenditure, because health spending rises with age.

A new pattern of medical expenditure has also emerged from changes in the prevalence of chronic illnesses and their treatments. Medical expenditure is becoming less concentrated on a small number of acutely ill patients (Figure 5). Previously, researchers found, the last episode of illness consumed a huge share of an individual's lifetime health expenditure, because costly medical technologies were used to prolong lives (though for only a short time). As a result, aging may have had only a modest effect on the rapid rise in health care costs. Recent trends now suggest that the concentration of medical expenditure on a minuscule group of the population has been reduced, perhaps because new, though costly, medical technologies have been developed that prolong lives rather than rescue patients from immediate death.

Figure 5. United States: Concentration of Health Care Expenditure over Time



Sources: Berk and Monheit (2001) and Yu and Ezzati-Rice (2005).

Moreover, affluence has changed diets and lifestyles. As a result, obesity has emerged as a serious health problem and may prove to be a factor leading to widespread and serious long-term chronic medical problems, such as diabetes, high blood pressure, and cardiovascular illness (see Olshansky and others, 2005; Olshansky, 2005; Daviglus, 2005; and Lakdawalla, Goldman, and Shang, 2005).

C. Challenges Facing Middle-Income Countries

Most middle-income countries are faced with a "double-disease" burden. As a nation's economy develops and matures, it has more knowledge and resources to address clean water, sanitation, malnutrition, communicable diseases, and basic health care. As infectious diseases and infant and maternal mortality decrease in a nation, middle- and higher-income urban households suffer more from chronic illnesses, while lower-income households and the rural population continue to suffer primarily from infectious diseases. Moreover, as a nation's economy grows, policymakers and the public become more aware of the disparity in the availability of health care and the reality that the burden of unforeseen health expenditure is a critical factor leading to impoverishment.

Middle-income countries thus increasingly recognize that they have to confront this double-disease burden. They must transform their preventive and curative care delivery systems to deal with chronic diseases, while at the same time maintaining vigorous efforts to address the burden of infectious diseases. The double-disease burden has serious implications for resource allocation, health costs, medical education, and the organization of health care delivery.

Also characterizing developments in middle-income countries is the increasing demand by formal sector workers and upper-middle-class citizens for health insurance. There is growing pressure to rationalize and reform the fragmented health financing schemes that normally characterize low-income countries. There is a demand for the elaboration of a more universal system under which all citizens can have access to basic health care and equitable risk protection. To meet these demands, middle-income countries will have to increase their investments in health care. Tax revenue can be a source of financing. However, most nations will probably look to social health insurance as a potentially more desirable and politically viable approach. Either approach will have macroeconomic implications.

Another critical issue confronting middle-income countries is that public health facilities are increasingly seen as inadequate, as a consequence of the emergence of for-profit private sector providers. Public health service providers tend to be slow in responding to socioeconomic change and in raising the quality of health services to meet the demands of a rapidly

emerging middle class. Typically, such facilities are underfunded, with resources allocated more on the basis of planning formulas than demand factors. Management operates under outdated bureaucratic rules, and health workers are often organized in strong public service unions (for example, in Latin America). Consequently, a quality-of-service gap develops between supply and demand.

For-profit private providers move in to deliver services that meet the demands of the middle class. Besides high returns to investor-owned private facilities, physicians in private practice can earn much higher incomes from fee-for-service payment paid by upper-income and middle-class patients. As a result, many public-sector-employed physicians set up a dual practice, operating private clinics during off-duty hours. This can lead to a further decline in the quality of the public health service as physicians' absenteeism rises to a high level and many highly qualified senior physicians leave for full-time private practice. Health care becomes a markedly two-tiered system, with public health services losing the political support of the upper and middle classes. The inequity in the health system becomes apparent, creating social and political unrest.

Aging is also likely to pose a problem for some middle-income countries in Asia, particularly China. The demographic transition—longer life expectancy and a lower fertility rate—would eventually create an aging problem for any nation in the long term. When a nation goes through an accelerated demographic transition, the time horizon of the aging process becomes considerably shortened. By adopting a one-child policy, China created an aging problem, which should intensify by 2030. China and other accelerated-aging Asian middle-income countries now have to begin planning for how to finance the future high costs of long-term care and transform their health care delivery systems to meet the needs of the elderly (see Heller, 2006a).

D. Challenges Facing Low-Income Countries

Low-income countries are not progressing very well in the health area. Prospects are poor for meeting the MDGs. To meet the MDG of reducing under-age-five mortality would require mortality rates to fall on average by 4.3 percent a year, in contrast with the recent experience of annual reductions of 2.3 percent. The maternal mortality rate in low-income countries is falling by only 2.4 percent a year compared with the 5.4 percent annual reduction that would be required to achieve the MDG target.[8] In sub-Saharan Africa,

[8]The targets of reducing under-age-five mortality and maternal mortality rates by 4.3 and 5.4 percent annually, respectively, are equivalent to the annual rates of reduction that need to take place to achieve the MDG of reducing under-age-five mortality by two-thirds between 1990 and 2015, and reducing maternal mortality by three-fourths between 1990 and 2015. See Wagstaff and Claeson (2004).

no country appears on track to attain the MDG targets for under-age-five mortality or maternal mortality. Low-income countries face several common problems. Among them are HIV/AIDS, inadequate "fiscal space," and limited human resources for health.

Many low-income countries have been particularly affected by HIV/AIDS, with profound macroeconomic effects on labor supply, human capital, foreign investment, and economic growth. Currently, African nations suffer the most from HIV/AIDS (Haacker, 2004; and UNAIDS, 2005, 2006). A human tragedy, the HIV/AIDS pandemic has created havoc in the health system of many nations, particularly in Africa. Financial and human resources have been drawn away to treat and prevent this disease, and the emphasis on the illness has in some cases severely diminished countries' capacity to provide basic health care services to their populations. A summary of studies describing the macroeconomic impact of HIV/AIDS is provided in Table 4.

Because of low per capita incomes, low-income country governments lack the financial resources to provide a minimal package of health care services. The CMH report (WHO, 2001) sought to establish a reasonable estimate for the minimum amount of spending required to provide basic preventive and curative services and came up with an estimate of roughly $30 per capita; however, few low-income countries spend even half this amount annually on health on a per capita basis, and most governments spend only $6–$10 per capita annually. Although there may be some room for additional government spending on health—by rationalizing unproductive expenditure, commercializing some government services, raising the government revenue share to at least 15–18 percent of GDP, and undertaking some additional borrowing—the amount of effective fiscal space for health created by such measures is limited because of competition with other pressing priorities in other sectors (Foster, 2005; and Heller, 2006b).

The stark reality is that to provide minimal basic health services, most low-income countries will need external assistance for some time (preferably through long-term sectoral budget support in the form of grants). Recent years have seen a dramatic increase in funding for health by the donor community, but much of these resources have been targeted to vertical disease programs—through the efforts of bilateral donors to finance the Global Fund to Fight HIV/AIDS, Malaria, and Tuberculosis as well as from recent U.S. government initiatives with respect to HIV/AIDS and malaria. As noted above, these vertical initiatives have, if anything, actually reduced the available fiscal space for spending on other preventive and basic curative services.

The recent surge in funding for HIV/AIDS has also highlighted the severe limitations of low-income countries in terms of available human resources for health. The recent report of the Joint Learning Initiative (2004) suggested

Table 4. Summary of Studies of the Macroeconomic Impact of HIV/AIDS in Africa

Study	Countries and Period of Economic Data	Period of Most Recently Used HIV/AIDS Data	Results (Compared with Non-HIV/AIDS Scenario)	
			Growth of GDP	Growth of GDP per capita
Dixon, McDonald, and Roberts (2001)	41 countries (1960–98)	Late 1990s	GDP growth rates reduced by 2–4% per year; large variation across countries, in line with prevalence of HIV	
World Bank (2001b)	Swaziland	Early 1990s	Average annual growth rate of GDP during 1991–2015 will be 1.3% lower	Average annual growth rate of GDP per capita during 1991–2015 will be 0.2% higher
World Bank (2001a)	Namibia	Early 1990s	Average annual growth rate of GDP in 1991–2015 will be 0.8% lower	Average annual growth rate of GDP per capita during 1999–2015 will be 0.1% higher
World Bank (2000)	Lesotho	Early 1990s	Average annual growth rate of GDP during 1999–2015 will be 1.4% lower	Average annual growth rate of GDP per capita during 1999–2015 will be 0.3% lower
Bonnel (2000)	About 50 countries (1990–97)	Mid-1990s		Rate of growth of GDP per capita in Africa reduced by 0.7% per year in the 1990s (1.2% for a country with HIV prevalence of 20%)
Quattek and Fourie (2000)	South Africa	Mid-1990s	Average rate of GDP growth over next 15 years will be 0.3–0.4% lower per year	
Arndt and Lewis (2000)	South Africa	–	Annual growth rate of GDP is lowered by about 0.5% in the late 1990s, rising to 2.5–2.6% during 2008–2010	GDP per capita will be 8% lower in 2010 than in the absence of AIDS; implies that AIDS lowers average annual growth rate of GDP per capita by 0.7% during 1997–2010
Greener, Jefferis, and Sifambe (2001)	Botswana	Late 1990s	During 1996–2021, annual growth rate of GDP reduced by 1.1–2.1%; 1.5% in the scenario considered most likely	Little effect—annual per capita GDP growth rate between 0.6% lower and 0.4% higher owing to AIDS; 0.1% lower in the scenario considered most likely

Table 4 (*concluded*)

Study	Countries and Period of Economic Data	Period of Most Recently Used HIV/AIDS Data	Results (Compared with Non-HIV/AIDS Scenario)	
			Growth of GDP	Growth of GDP per capita
BIDPA (2000)	Botswana	Late 1990s	Average rate of growth of GDP in 2000–2010 reduced by 1.5% per year	
Cuddington and Hancock (1994)	Malawi	Early 1990s	Average rate of growth of GDP in 1985–2010 reduced by up to 1.5% per year	Average growth of per capita GDP reduced by up to 0.3% per year[1]
Cuddington (1993a, 1993b)	Tanzania	Early 1990s	Average annual rate of growth of GDP in 1985–2010 reduced by up to 1.1%	Average annual growth reduced by up to 0.5%
Kambou, Devarajan, and Over (1992)	Cameroon	–	GDP growth rate over 1986–91 reduced by 1.9% per year	
Over (1992)	30 sub-Saharan countries	Early 1990s	Average annual growth rate of GDP during 1990–2025 reduced by 0.9% on average (up to 1.5% in 10 worst affected countries)	Average annual growth rate of GDP per capita reduced by 0.15% per year (up to 0.6% in 10 worst-affected countries)

Source: UN Economic and Social Affairs Department, Population Division (2004).
Note: References to effect on GDP growth or per capita GDP growth rates refer to average annual growth rates for the period mentioned, expressed as percentage-point differences from a "no-AIDS" scenario.
[1]For "extreme" assumption about future AIDS prevalence.

that sub-Saharan Africa is short approximately 1 million health workers (largely doctors, nurses, and midwives, but also laboratory workers, pharmacists, and trained community health workers) to provide basic health services. Low-income countries are bedeviled by limits in their capacity to train doctors and nurses as well as by poor conditions of services—low salaries, poor opportunities for medical training, severe and risky working conditions in health clinics (in part because of the AIDS epidemic), and difficult living conditions for doctors and nurses posted with their families to rural health clinics. In addition, many of the doctors they have trained emigrate either to industrial countries or to externally funded clinics in other low-income countries (to work at higher than public service salaries in AIDS clinics).

Table 5. Progress on Millennium Development Goals in Fragile States Compared with Other Poor Countries, 2000

	Low-Income Fragile States	Other Low- and Middle-Income States
Population (in millions)	871	4361
MDG1: Number living on less than $1 a day (in millions)	343	821
MDG2: Primary education enrollment	33%	15%
MDG3 Primary education: female-to-male enrollment ratio	84%	92%
MDG4: Child mortality rate per 1,000 (2002)	138	56
MDG5: Maternal mortality rate per 100,000	734	270
MDG6: Number of people living with HIV/AIDS (in millions)	17.1	21.4
Malaria death rate per 100,000	90	7
MDG7: Percent of population without access to safe water	38%	18%
MDG8: Telephone and cell phone subscriptions per 100 people	4.5	18.8

Source: United Kingdom, DFID (2005).
Note: DFID's definition of fragile status covers those countries where the government cannot or will not deliver core functions to the majority of its people, including the poor.

Besides these common issues, there are many fragile states among the low-income countries. The World Bank identifies 34 such countries as "Low Income Countries Under Stress" (LICUS), representing 418 million people. The populations of these countries suffer from poor health, and the failed health systems of these countries typically result in households that, when struck by serious illness, are forced into impoverishment as they deplete their meager resources in seeking health care. The causes for their health problems and policy remedies defy generalization, but include the following:

(1) countries in armed conflict or in the early stages of a peace process; (2) countries with a history of political instability and military coups; (3) new or emerging states; (4) countries under international sanctions; or (5) countries with closed political systems.

Not only are these countries failing to meet MDG targets but, as conveyed in Table 5 (see p. 35), they are about 25–35 percent worse off than low-income countries in terms of per capita income, per capita total expenditure on health, infant and maternal mortality rates, and the incidence of tuberculosis.

CHAPTER

5 Conceptual Framework for Classifying Health Systems

Like other socioeconomic systems, a health system is structured by state action or inaction to serve certain social purposes. A state makes conscious decisions in structuring the system to achieve certain objectives or takes no action, allowing the system to become a laissez-faire free market system. Simply put, *a health system is a means to an end.* It exists and evolves to serve societal needs. Under this paradigm, a health system is a set of relationships in which the means—structural elements of the system—are *causally* connected to the ends or goals.

A health system can be conceptualized on at least two levels: macro and micro. At the macro level, the focus is on the *overall dimensions* of health sector performance. These dimensions include the extent of equal access to basic health services, the improvement in the quality and distribution of the population's health status, the adequacy of protection for all against impoverishment caused by catastrophic medical costs, and the efficiency of the system in producing these aggregated outcomes. In other words, this level looks at the total size, shape, and functioning of the "elephant" that is the health sector, rather than at microlevel behavior and the dynamics of individual firms and households (Ackley, 1961). Ideally, a microeconomic theory of individual households and firms would explain macro level phenomena, and the aggregated behavior of individual households and firms would add up to the overall result. That has not, however, been the case. Moreover, microeconomic theory has not been able to offer adequate explanations for major structural features that are common to most health systems and that influence macro outcomes.

In what follows, a simple conceptual framework is elaborated that can be used to describe and analyze the functioning of a health system. This framework is used in Chapter 6 in characterizing the different types of health systems prevailing at different stages of development.

A. Ends: Objectives

The objectives of a national health system can be ascertained from a country's legislative history and policy documents. There is a convergence of views around the world about the goals; namely, to improve people's health, prevent health-related impoverishment, and gain public support and satisfaction. The equitable distributions of these benefits have to be considered along with their average levels. At the same time, because resources are scarce and nations are constrained to optimize these goals subject to budget constraints, affordability is often stated as an important health system goal. These objectives can be decomposed into their equity and efficiency dimensions, in effect going beyond the usual economic concerns that exclusively focus on efficiency (Okun, 1975). Table 6 provides a summary of these multiple objectives and also illustrates the possible trade-offs between them.

Achieving multiple goals under a budget constraint requires difficult trade-offs. Each nation has to wrestle with two types of trade-offs: intersectoral and intrasectoral. In deciding how much to spend in total on health (that is, the budget constraint for the whole sector), governments also have to consider the relative benefits produced by spending on nonhealth sectors—education, housing, environmental protection, research, and defense—in terms of improved health outcomes as well as other societal objectives.

Intrasectoral trade-offs must also be considered in choosing how to achieve different goals within the health system. For example, at the margin, there is a trade-off between improving the average level of a country's health status and achieving an equitable distribution of health status. Often the major policy debate may overlook key trade-offs. For example, the common argument given by economists—that increasing direct out-of-pocket financing by patients will improve economic efficiency—ignores the possible consequence of a greater inequality in health status for the poor. But rarely are these trade-offs explicit or obvious to citizens of a country. The implicit boundaries to trading off among different objectives exist in deeply rooted historical processes as well as in fundamental social values, which limit the range of available reform options. The health systems of European countries, for example, are deeply rooted in egalitarian traditions, and policy proposals violating this basic foundation of equity have little overall appeal regardless of how much they would enhance efficiency (Saltman and Figueras, 1997). On the other hand, the health care system of the United States is rooted in libertarian traditions. Compulsory health insurance to cover all Americans remains elusive after more than 60 years of public debate (Marmor and Barr, 1992).

Table 6. The Objectives of a Health System

	Objectives (Outcomes)		
Dimensions of Outcomes	Health status	Risk protection	Consumer satisfaction
Average level			
Degree of equity in the distribution			

The most frequent debate is about the trade-off between efficiency and equity *within* the health system. For example, at the margin, every nation has to find a balance between excluding co-insurance to advance equal access to health care and imposing co-insurance to promote efficiency, or between investing in the most advanced expensive cancer treatments to improve the average level of health and building hospitals in remote areas to improve equity in health.

B. Means: Structural Elements

In the architecture of a health system, there are five major causal structural elements (the means), as identified by previous research, to achieve these goals: financing, organization, payment, regulation, and persuasion (Hsiao, 2000; and Roberts and others, 2003). We provide a brief summary of each.

1. Financing and Its Institutional Organization

Financing refers to the way in which money is mobilized and how it is used. It is a major structural element that affects outcomes, such as health status and its distribution, and risk protection. Financing consists of at least four principal instruments: financing methods, allocation of funds, rationing, and institutional arrangements for financing (see Gottret and Schieber, 2006).

There are five financing methods for health care, of which a national (or social) health insurance system is one. Other methods include general revenue, private insurance, community financing, and out-of-pocket payment. The choice among the major methods of financing determines the amount of funds available for health care, who bears the financial burden, and who controls and allocates the resources.

The method chosen to finance health care largely determines the type of organization (that is, public, quasi-public, nonprofit private, or for-profit private) that has to be established to administer the financing programs and allocate the resources. The transaction costs, political influence, and governance vary by the different forms of organization. For instance, public organizations (for example, national health service agencies) are influenced more by politics, whereas quasi-public organizations (for example, independent social insurance fund agencies) are less so. The allocation of resources and chances for corruption are affected accordingly.

Once mobilized, financial resources then have to be allocated for different types of health care. Allocation criteria consider factors such as equal access to health care for all citizens, health gains, insurance protection, and satisfaction of the public's demands. Whatever reasonable health services a publicly or community-provided health system cannot offer free of charge (or supply in sufficient quantity to satisfy patients' demand because of the budget constraint) have to be rationed through such methods as price, waiting time, or inferior quality.

2. Organization for Delivery of Health Care

Organization refers to the broad structure used to organize health care provision. It primarily affects how individual health providers are organized and managed. International experience shows that decisions on organization significantly impact the efficiency and quality of health services and availability. These outcomes in turn affect health status, total health expenditure, and the level of public satisfaction.

The organization of how services are provided involves four choices: competition, ownership, decentralization, and integration. Perhaps the most critical choice is whether to rely on publicly funded government facilities or to allow private providers to play a major role in health care delivery. International experience tends to show that public health service facilities are, in general, less efficient and less user friendly. Alternatively, a nation can create competition among public and private providers. However, as noted above, serious market failures are common in the health services market. For-profit facilities can engage in cream-skimming, price gouging, and demand inducement. Remedying these market failures and maintaining effective competition require sound payment systems and regulations.

3. Payment or Incentive Structure

Payment refers to the methods by which the resources raised by financing are paid out to individuals and organizations. Payment is the principal instrument

for establishing incentives, and can thus have a measurable impact on the efficiency and quality of the health services provided. A payment system for health providers has two parts: the method of payment and the amount of payment per unit. The former creates two different kinds of incentives for patients and providers—financial reward and risk bearing. Different payment methods shift financial risk to different players in the system (see Gottret and Schieber, 2006).

The incentive structure established for providers affects cost, efficiency, and the quality of health services. Providers can be paid by different methods (for example, fee-for-service, salary, capitation, or per admission adjusted for case mix), and each method affects providers' behavior differently. How physicians (or nurses) are paid also influences what treatment modality physicians will select, how services will be produced, how many hours practitioners will work, and how many qualified physicians will enter the market to supply services. Payment also has a powerful impact on hospitals in terms of how they organize and manage their activities and staff; whether they combine preventive, primary, and tertiary services; and the quality of the health care they provide.

4. Regulation

Regulation refers to the government's use of its coercive power to impose constraints on organizations and individuals. An effective regulation requires good design and wording as well as the ability of a government to ensure enforcement. There can be many failures in establishing and executing regulations. In addition, regulators can be captured—instead of advancing the public interest, the "captured" regulatory agency can promote the interests of the regulated.

In health systems, regulations are established for four major purposes: (1) to provide safety protection to improve the health of the general population; (2) to set the rules of the game for transactions and exchanges in order to improve efficiency and quality of health services; (3) to enhance social equity by ensuring that everyone has access to basic health care; and (4) to correct market failures in order to enhance efficiency and the quality of health care and insurance products.

5. Persuasion

The private sector and the government have one additional and powerful means to achieve health system goals: influencing people's beliefs, expectations, lifestyles, and preferences through advertising, education, and information dissemination. Private commercial firms have long used advertising to inform the population and to sell their products. Our beliefs

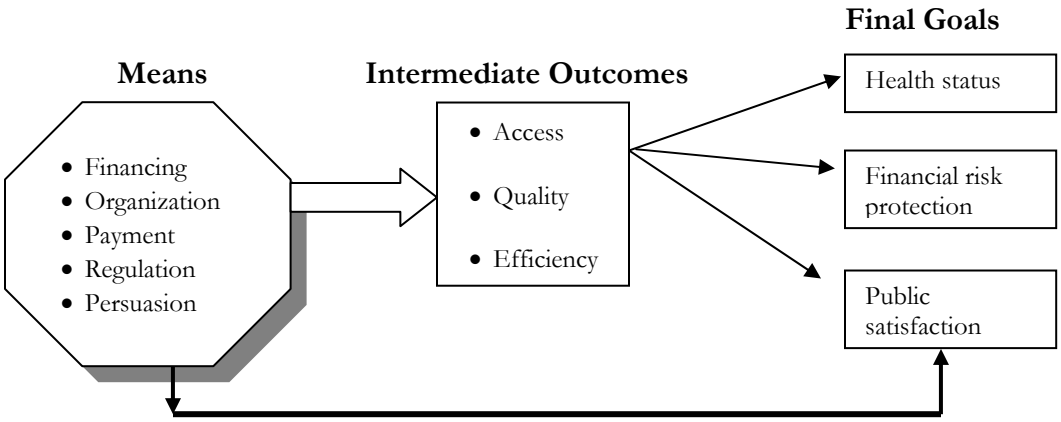
and preferences are shaped substantially by these advertisements (Galbraith, 1967). Governments also influence our beliefs, expectations, likes, and dislikes through education, information, and indoctrination. Good examples are the anti-tobacco campaign pursued by governments around the world and nutrition and exercise campaigns in the United States. Similarly, the government of Taiwan Province of China carries out major public education programs in health education, prevention, and promotion. Their impacts, however, have not been systematically evaluated with evidence.

Persuasion also has a powerful impact on the supply side. Professional ethics is taught in medical schools and instills the belief that physicians should balance social benefits with their self-interest. The Internet is proving to be a powerful means for persuasion, both actively by governments and the private sector and passively, as individuals learn about health risks and treatment possibilities.

6. Summary of Ends and Means

Figure 6 illustrates the relationship between structural elements (means) and outcomes (ends). We can use this framework to analyze and explain how the changes in outcomes arising from the introduction of a national health insurance system are likely to be influenced by the characteristics of its structure in terms of the five means described above.

Figure 6. Means, Intermediate Ends, and Final Ends of a Health System



C. Control Knobs for Policy

1. Control Knobs for Equitable Health Care

Many factors determine the health status of a population and its distribution. Health care is only one of these factors, albeit a major one. Several other determining factors lie outside the dominion of health care, for example, the education level of women, the degree of environmental pollution, and the availability of sanitation. However, the relative impact of the multiple determining factors is still unclear. Moreover, we do not know the relative effectiveness of policy instruments in producing equitable health. In contrast, we do have some understanding of how to alter people's access to health care and how to provide risk protection.

Equity in health care has four parts: equity in financing, equity in access to health care, equal levels of health status, and equitable risk protection. Equity in access to health care is largely determined by the financing method. The method chosen determines who bears the cost and how it is distributed among income groups. The financing method chosen vests different parties with financial power and decides how the funds will be used and allocated. For example, the targeting of public funds through the budget determines who receives health benefits. The design of insurance benefits and how risks are pooled affect who can afford expensive medical services. The rationing method chosen determines who has access to which services. For example, rationing health care by price means the poor have less access than the rich, whereas rationing by waiting time means the rich will be less favored because their opportunity cost of time is generally higher.

2. Control Knobs for Efficiency (Cost-Effectiveness)

There are two kinds of efficiency to consider: allocative and technical. *Allocative efficiency* depends on who controls financial resources and has the power to allocate them. This allocation has to balance at least two objectives—the cost-effectiveness of improving risk protection and the level of health status. Allocative efficiency is also affected by the incentive structure. Patient demand for health care is affected by the amount patients have to pay when they demand services, both in monetary terms and in terms of time. Similarly, payment mechanisms for physicians create incentives that determine whether they provide the most cost-effective services.

Technical efficiency is affected by how health services are organized and by the incentive structures facing the provider organization. For example, an organizational arrangement in which the government finances and directly manages hospitals has been shown to be relatively inefficient. Technical

efficiency is further influenced by regulations, such as those governing the use of generic drugs.

3. Control Knobs for Consumer Satisfaction

Consumer satisfaction depends in part on the quality of service delivered and the price consumers have to pay. Health care quality is measured in two ways: technical and personal. The technical quality of health services is affected largely by organization, regulation, and incentives. Although the technical quality of service depends on the education and training of health practitioners, these inputs are not sufficient to ensure good technical quality of services. The actions of health practitioners are also significantly affected by professional ethics, the standards of practice in a community, the effectiveness of peer review, and payment incentives. International experience shows that ensuring the technical quality of medical services may be the most complex and difficult challenge in health care. Self-regulation has seldom worked adequately. External regulations have not fared much better and often are legally complex and expensive to administer. It appears that the most effective way forward may be to organize health practitioners into practice groups with internal peer review and external accountability.

The factors that affect the personal quality of services (that is, quality as assessed by patients) include the organizational structure, payment incentive structure, methods of rationing (such as rationing by waiting time), and choice of physicians or medical practitioners.

4. Control Knobs for Managing Health Expenditure Inflation

Steadily rising per capita health expenditure, which has exceeded the growth rate of per capita GDP, has exerted pressure on government budgets and household incomes. In the past 25 years, all advanced economies have tried to constrain the level of health expenditure inflation to a socially acceptable level. With the exception of the United States and Switzerland, the major advanced economies have, at least to date, found effective ways to manage health expenditure inflation. The methods of financing and organizing health care seem to be the key. Two approaches have proven effective when financing is through multiple insurance plans. One is to establish a global budget covering all the plans, with a single channel of payment to providers. The other approach is to finance health care with general revenue. General revenue financing requires the health budget to compete with other social and economic priorities in the political arena. At present, the advanced economies are principally wrestling with the question of how to control expenditure inflation in such a way that demand and supply are in reasonable balance, while improving the efficiency of services and the quality of care.

CHAPTER

6 Stages of Health System Development and Health System Performance

A. Characterizing Different Stages of Health System Development

This chapter presents an analytical framework to help macroeconomists understand health systems and assess health policy for countries at different stages of development. To state the obvious, the same health system structure cannot be applied to all countries. Systems differ enormously among countries, owing to variations in socioeconomic development. What works in the United Kingdom, say, may not work in Kenya. On the other hand, must every country be treated differently? Or can they be grouped into somewhat homogenous categories, and general conclusions drawn for each?

Using cluster analysis, we can identify three distinct groups of countries. For ease of understanding, we distinguish the groups of countries by per capita GDP. Of course, the boundaries between these groups are artificial, because the distribution of countries by income is continuous. Thus, although we designate each grouping a "stage of health development," this term should not be misinterpreted as referring to discrete stages. The health system also evolves because as income and disease patterns change, the health system gradually changes as well. Table 7 presents examples of countries in each of the four stages of health development and summarizes the financing and service provision in each stage. A more detailed description for each stage follows the table.

For each stage of development, it is important to understand the history behind the variations in level of health status and risk protection. Most non-Western countries' governments paid little attention to health care until the introduction of Western medicine—largely by missionaries and colonial governments. After World War II, colonial powers (the United Kingdom, France, Germany, the United States, and the USSR) introduced their systems of health care financing and organization into their colonies and spheres of influence.

Table 7. Health Care Financing and Service Provision, by Stage of Economic Development
(Percentage shares relate to proportion of population in each category of coverage)

	Stage I	Stage II	Stage III	Stage IV
Country classification	Low-income	Lower-middle-income	Upper-middle-income	High-income
Per capita GNI[1]	Below $826	$826–$3,255	$3,256–$10,065	Above $10,065
Financing sources				
General revenue and donor aid	50–60%	40–50%	20–40%	Countries with a high share of general revenue: National Health system (United Kingdom, New Zealand), Medisave and catastrophic insurance (Singapore)
Social insurance	Only for civil servants and formal sector employees	10–20%	30–60%	Direct provision: National health insurance (Canada & Australia). Indirect provision: Bismarkian (Germany, Japan)
Private insurance	Little	5–10%	15–40%	Managed care plus Medicare (United States), or supplementary in many countries
Self-pay	35–45%	20–40%	15–25%	15–25%

Source: Prepared by the authors.
[1]2004 gross national income, using the World Bank's Atlas method, which smoothes exchange rate fluctuations by using a three-year moving average, price-adjusted conversion factor.

However, these systems were used only in the application of Western medicine (for example, in the training and certification of health practitioners, the regulation of drugs, and the provision of government-financed services). Patients continued to use indigenous medicine in combination with Western medicine.

B. Stages I and II: Low-Income and Lower-Middle-Income Countries

Low-income countries (per capita GDP below $826). The 59 countries in this group include, among others, Bangladesh, Haiti, India, Kenya, Mali, Nigeria, Peru, Senegal, Tanzania, Vietnam, and the Republic of Yemen.

Lower-middle-income countries ($826–$3,255 per capita GDP). The 54 countries in this group include, among others, China, Ecuador, Egypt, Indonesia, Morocco, Peru, the Philippines, and Tunisia.

In the early stage of health system development, before state action, people rely on their own knowledge of hygienic and preventive practices. When they become ill, they rely largely on self-care, including self-medication. Patients also seek services from indigenous health care practitioners and pay out of pocket. As Western medicine enters a country, the government plays an ever-increasing role in health care. Stage I countries share many of the following characteristics—with, of course, several glaring exceptions.

1. General Description

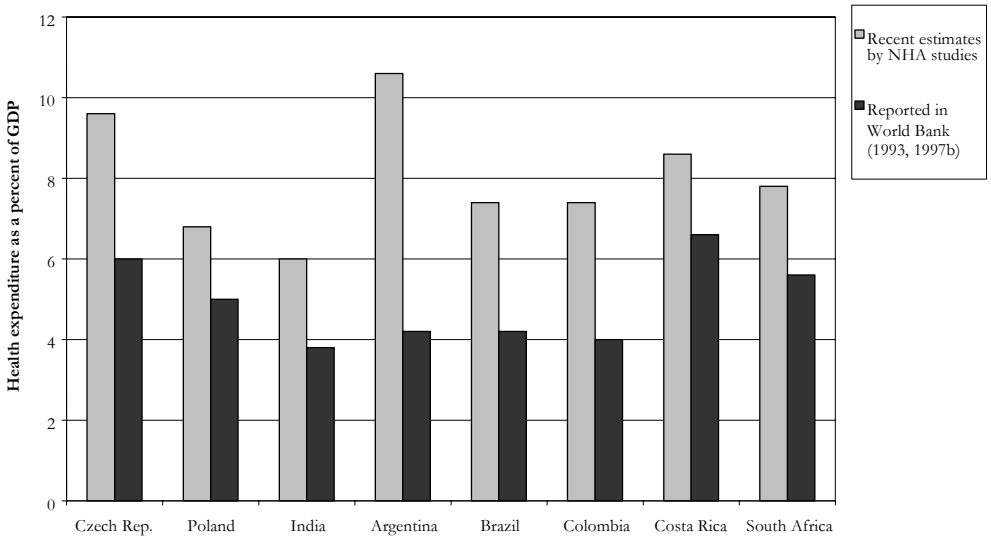
Disease patterns

- For low-income countries, communicable and infectious diseases are prevalent and are the major cause of death. A large portion of the population has no access to clean water and latrines. A high percentage of infants and children suffer from malnutrition, and many pregnant mothers are anemic. Other characteristics include a high rate of infant mortality (ranging from 70 to 130 per 1,000 live births) and a low life expectancy (ranging from 45 to 65 years).
- For low-income countries, the urban population begins an epidemiological transition; limited public resources have to deal simultaneously with communicable and chronic diseases.

Health spending, the use of resources, and health outcomes

- In low-income countries and lower-middle-income countries, the government finances a large portion of national health expenditure, but a significant share—often close to half—is paid directly by patients. However, government statistics on national health expenditure usually *understate* the amount spent, because they omit or underestimate private spending. Figure 7 shows the difference between actual national health expenditure and official government statistics.
- In general, Stage I countries allocate only a small portion of their government budgets (less than $2 per capita, on a 1997 purchasing power parity basis) to public health and prevention. Two-thirds or more of the public health budget is spent on hospital services. The principal medical center, which is usually located in the capital city, receives half the total hospital budget. Although most of the population lives in rural areas, most of the public health budget is spent on services used by the urban population.

Figure 7. Selected Countries: Comparison of Actual National Health Expenditure and Government Statistics on Health Expenditure
(As percent of GDP)



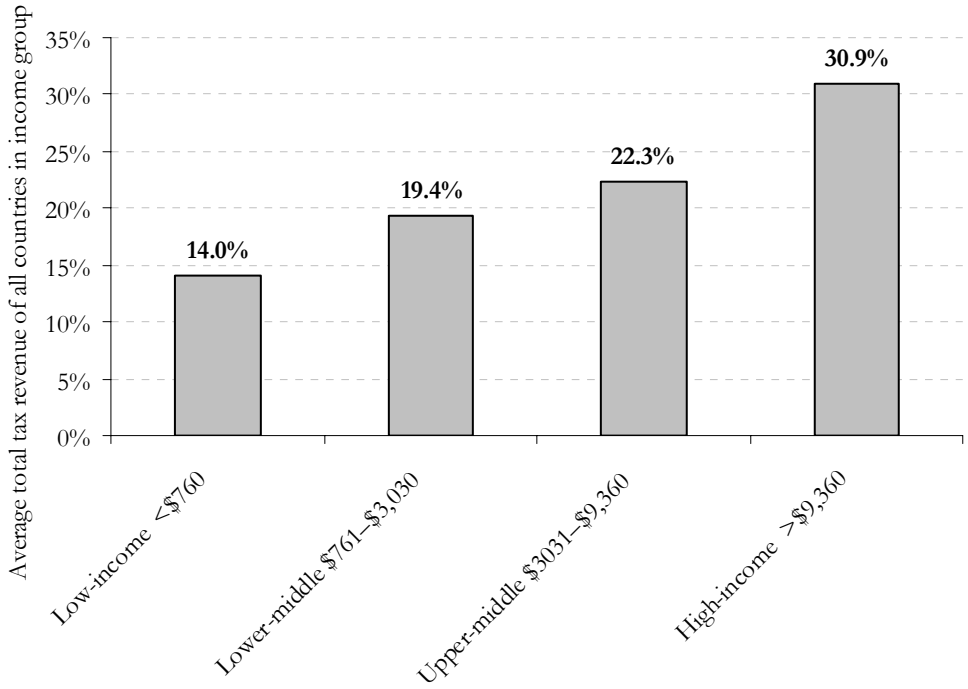
Source: Berman and others (1999).

- Health outcomes vary greatly among these countries. For example, although India and Sri Lanka are neighbors, their infant mortality rates are, respectively, 73 and 17 per 1,000 live births. The difference does not reflect the level of health spending because Sri Lanka spends less of its GDP on health than India. China also spends less of its GDP on health than India, yet its rate of 42 per 1,000 live births is substantially lower than that of India.

Government capacity and performance

- In all Stage I countries, central government revenue (as a percent of GDP) is relatively low—typically below 15 percent. These governments, therefore, have very limited resources to fund health care (see Figure 8).
- Health issues are usually given a low priority by Stage I countries, resulting in a lack of national strategy for health development. For example, governments usually divorce their policies with respect to medical education and the pharmaceutical industry from their policies for the health sector. Health spending by ministries of education is often as large as that by ministries of health, because the former funds and manages the medical centers that provide clinical training to medical graduates. This spending, however, may have little impact on improving a population's health status.

Figure 8. Government Revenue as a Fraction of GDP, by Average per Capita Income Level



Source: IMF internal data.

- Public health services are inefficient: excess capacity is often found at lower-level facilities. Using quantitative and econometric models, studies of several low-income countries have found the inefficiency to be between one-third and one-half of spending (Osei and others, 2005; and Zere and others, 2006).

Supply and use of services

- Although public health and disease prevention programs sponsored and funded by donors may be especially effective, other public health programs are often underfunded and poorly managed.
- For minor illnesses, most of the population relies on self-care and self-medication. In rural areas, most of the governments in these countries establish and fund health stations, staffing them with modestly trained health practitioners or recent medical school graduates. However, in fact, these primary care services exist primarily on paper. Those that do exist offer a poor quality of service, inadequate drug supplies, and inconvenient clinical hours. Many health stations are staffed with two health practitioners and see only three or four patients on an average day.

Patients often prefer to go to an indigenous medical practitioner and pay out of pocket. In urban areas, patients generally go to private practitioners. Surveys commonly find that urban patients obtain more than half their outpatient services from the private sector.

- For serious illnesses, the affluent seek hospital services from the private sector, when available. Most, however, use the free (or heavily subsidized) government hospital services. These serve as de facto health insurance for most people but they are rationed by waiting time and by poor service quality. Frequently, the experienced hospital medical staff hold two jobs—in a hospital and in a private fee-for-service practice. In many of these countries, physicians earn the vast majority of their income from private practice, spending only a modest amount of time at the public hospital and the rest at their private practice. In public hospitals, physicians self-refer the more affluent patients to their private clinics.

2. A Three-Tier System in Terms of Access

This section describes the common characteristics of health care for countries in the first stage of development in order to give policymakers and macroeconomists a general understanding of health care systems. However, as with any generalization, there are exceptions and variations.

Stage I governments accept responsibility for providing all necessary health care for their citizens. But do these governments allocate sufficient funds for health programs? And how effectively are these services delivered?

Most of these countries attach insufficient priority to the allocation of budgetary resources to public health, disease prevention, and maternal and child health services. When international donors support these programs, most governments establish vertical programs to deliver the specified services. Common donor-funded preventive or primary services include programs for extended disease prevention and immunization, maternal and child health, family planning, and treatment for malaria, tuberculosis, and HIV/AIDS. Each vertical program creates its own bureaucracy, clinics, and supply system. These programs often overlap, competing for a limited number of trained health practitioners and equipment. The sustainability of these programs is therefore in jeopardy once the donors withdraw their funding.

On paper, many of these governments also take responsibility for organizing, managing, and delivering primary, secondary, and tertiary curative services to all citizens. However, few governments can fund and deliver these services adequately. Consequently, the financing and provision of health services is effectively segmented across three tiers of the population, depending largely on a patient's ability to pay for services.

The *first tier* consists of affluent households who pay directly and demand services from better-qualified, private sector physicians.[9] These affluent households also demand secondary in-patient hospital services from private hospitals (both for-profit and not-for-profit). Because private physicians and hospitals charge high fees for their services, these services are therefore rationed by price. However, affluent households demand sophisticated and expensive tertiary services from public teaching hospitals, which charge very low fees. These services are delivered by public hospitals partly because of the lack of private capital to invest in this level of facility and partly because the few qualified medical specialists are on the faculty of the medical schools. For other services, affluent households demand care from private sector providers rather than obtain the almost-free services from public providers, because the private sector offers greater availability of drugs and supplies, shorter waiting times, more choice of physicians, and better personal attention and other amenities.

The *second tier* consists of middle-income households, which are covered by the government's essentially limited pay-as-you-go social insurance system. This insurance system typically covers only civil servants and workers employed by large enterprises. The social insurance plan selects and contracts with public and private facilities to provide services. These facilities charge the plan on a fee-for-service basis. The fee schedule may be negotiated between the parties or set by the insurance plan. Tertiary services are contracted from medical centers. Services are rationed by waiting time and poor service quality (for example, unfriendly health practitioners). Some large enterprises have their own hospitals and clinics, which are built to ensure cost control and the availability of high-quality services.

The *third tier* consists of poor and low-income households (most of the population), which rely on public facilities for health services. Most poor households reside in rural areas or in urban slums. Although public health services are nearly free, the waits are often long, physicians are not on duty, clinic hours are inconvenient, facilities are dilapidated and crowded, drugs and other supplies are unavailable, and providers are unfriendly.

Therefore, when the problem is not life-threatening, such households often resort to self-care, self-medication, or indigenous practitioners. As a result, household expenditure surveys consistently find that poor and low-income households spend a significant portion of their income on drugs and indigenous medicines. Table 8 summarizes this three-tier system.

[9]Most private sector physicians are employed by public sector hospitals, but have a private practice on the side, although a few high-reputation physicians may have only private practices.

Table 8. Economic Development Stage I: Three-Tier Health Care System

	Source of Financing	Services Provided
Affluent households	Self-pay	Disease prevention and drugs, primary care, and secondary services from the private sector
	Government	Tertiary services, public health
Middle-income households, civil servants and formal sector employees, others	Social insurance	Disease prevention and drugs, primary care, and secondary services from the private sector
	Self-pay	Disease prevention and drugs, primary care, and secondary services from the private sector
	Government	Tertiary services, public health
Poor and low-income households	Self-pay	For minor illnesses: self-care, self-medication, and indigenous and private practitioners
	Government	Primary care, public health, and disease prevention. For serious illnesses: specialist services and in-patient hospital services

3. Generic Models of Health Care Financing and Organization

Three generic models of health care financing and organization can be observed in Stage I and II countries: government-oriented, market-oriented, and central-planning. A three-tier health care system is prevalent in countries that follow the government-oriented and market-oriented models. A two-tier system typically operates in countries that follow the central-planning model (reflecting the absence of a middle class in communist societies).

a. Government-oriented model (for example, Bangladesh, India, Kenya, Nigeria, and Sri Lanka)

Financing. Under this model, the government focuses almost exclusively on the financing and delivery of public health services. It takes a position of benign neglect toward other forms of health financing, such as social insurance or community financing, which are free to develop on their own without government policy and support. As a result, these other forms of health financing are usually insignificant and underdeveloped.

Macro-organization. The government organizes, funds, and operates a network of health facilities at three levels: subdistrict, district, and provincial. Health practitioners, employed by the government as civil servants, are assigned to the facilities, the number and staffing of which are based on "needs" criteria that ignore demand considerations. The facilities at each level have specific assigned duties to provide preventive services, primary care, and hospital services. Everyone has equal access to these services.

In most countries, government facilities are underfunded, poorly managed, and short on drugs and supplies. Public health and preventive services are also poorly managed. Therefore, for primary care services, most patients either resort to self-care or make use of indigenous providers on an out-of-pocket basis. As a result, the supply of public health services usually far exceeds demand at the subdistrict level. In contrast, the hospital services provided at the district and provincial levels are typically overcrowded, with demand far exceeding supply. These services are rationed by waiting time, poor service quality, and supply shortages. Patients often have to buy their own drugs and surgical supplies for operations. In many cases, services are rationed by under-the-table payments.

Incentives. At the district and provincial levels, underpaid physicians supplement their government salaries by establishing private practices, to which they self-refer affluent patients from the public facilities. Physicians can charge high fees in the unregulated private market. The more qualified physicians earn most of their income from their private practices. The high financial reward offered by a private practice leads to high absenteeism and other abuses.

Regulation. With a limited capacity to establish and enforce reasonable regulations, the government usually adopts a laissez-faire policy toward private sector providers, leaving them to practice without having to be licensed or regulated. Private pharmacies dispense (often potent) drugs without a prescription, and pharmacists' assistants advise patients on which drugs to take. Private insurance also operates in a laissez-faire environment. However, few private insurance plans survive in Stage I and II countries, because there is little protection against fraud and abuse by patients and providers.

b. Market-oriented model (for example, Indonesia, Morocco, and the Philippines)

Financing. Under this model, the government still finances a large share of health expenditure, but plays a more active role in developing social and private insurance. The government establishes, through legislation, a compulsory social health insurance program for formal sector employees and civil servants. The government may use tax incentives to promote private

insurance and subsidize private hospitals directly or through tariff policies on imported equipment and supplies.

Private insurance companies usually charge high premiums, which are affordable only by the affluent. Equally, only the affluent and privately insured populations can afford private hospitals.

Macro-organization. The state plays the major role in organizing, funding, and operating a network of health facilities at three levels, based on "needs criteria." Everyone has equal access to services provided by government-funded facilities. However, as with the government-oriented model, these facilities are usually poorly managed and underfunded, provide poor-quality services, and suffer a pervasive imbalance between supply and demand.

Frequently, private insurance plans establish their own clinics, employing physicians and selecting and contracting with private hospitals to service their insurance coverage. This form of integrating the financing with the provision of services is akin to staff model health maintenance organizations (HMOs) in the United States (where the HMO employs its own physicians). In low-income countries, they are called prepaid medical plans. The private insurance plans employ their own physicians and operate their own clinics to prevent fraud and abuse. There is little competition between private and public hospitals because they serve different client groups. In essence, the private hospitals serve a niche market.

Incentives. As under the government-oriented model, underpaid physicians in the public sector hold two jobs. In the private sector, private insurance may pay its contracted general practitioners by capitation and establish a fee schedule for specialists and private hospitals. Many private providers "balance-bill"; that is, they charge patients an additional amount beyond what the private insurance plan pays.

Regulation. The government often uses regulations to promote private insurance and hospitals. For example, in the Philippines, the government allows private prepaid medical plans to form an informal cartel to set prices and inhibit new insurance products.

c. Central-planning model (for example, China before 1985, Cuba, and Vietnam)

In this model, the government emphasizes public health and disease prevention. It promotes community initiatives and mobilizes resources at the community level, deploying modestly trained health practitioners to deliver health education and primary care to rural communities. It also makes essential drugs available at modest cost.

Financing. Under this model, countries typically spend a smaller portion of their GDP on health care than under the other two models yet deliver significantly better health outcomes for their populations. The government directly finances only a small portion of national health expenditure, but organizes and manages social insurance for formal sector workers and community financing for primary care in rural areas. The government deploys trained personnel to provide health education and primary care services, and makes available essential drugs at modest cost. Public hospitals are funded by payments from social insurance and community health funds, user fees, and government subsidies.

Macro-organization. Health care is delivered by a three-level network, with the government subsidizing and managing only the two upper levels of services—at district health centers and hospitals. The local communities fund and manage the lowest level, usually at primary care stations. The government also operates a centrally controlled vertical program for public health, disease prevention, and family planning. Programs such as health education, immunization, and maternal and child health are often quite effective. A central drug distribution system ensures the availability of essential drugs for most people. Private practice is forbidden, except for retired physicians. Private hospitals, pharmacies, and insurance plans are also prohibited.

For most of these countries, demand exceeds supply for hospital services. In contrast, at the two lower levels—health centers and primary care stations—supply exceeds demand. Tertiary hospitals are extremely crowded, whereas lower-level facilities frequently are idle.

Incentives. All government physicians and health practitioners are salaried and given lifetime job guarantees. Promotions are based on seniority. As a result, the personal quality of service is usually abominable and patients are put on long waiting lists to see senior specialists. Because under-the-table payments and private practice are forbidden, political power and personal connections are often relied on to bypass queues.

4. Differences between Low-Income Countries and Lower-Middle-Income Countries

The major differences between low-income countries and lower-middle-income countries relate to (1) the size of the affluent population, (2) the share of the population employed in the formal sector, and (3) the ability and capacity of the countries to manage social insurance efficiently. These differences influence public resource allocation and the effectiveness of social insurance.

As development occurs, the growing influence and size of the affluent population affects the allocative efficiency and equity of the health sector.

The impact is most pronounced for countries that adopt the market-oriented approach (for example, the Philippines, Morocco, and Indonesia). The affluent and powerful populations—most of whom live in the capital—demand the most modern medical services from the public hospitals. They also demand that the government fund new medical centers—heart institutes, transplant centers, and oncology centers are the most requested—and provide high-technology treatments. On the supply side, U.S. medical schools are eager to export their latest knowledge and technology, partly because of the country's surplus of specialists.

The global market for new medical technologies has placed a particular strain on the treasuries of both groups of countries, resulting in reduced public funding for the poor and for public health services, and implying a decrease in the quality of services. The private market for primary and secondary services expands rapidly to meet the demand of an increasing number of affluent and middle-income households. This thus leads a greater number of public sector physicians to establish private clinics and laboratories, charging high fees for their services. The high cost of private medicine leads affluent households to demand insurance coverage. At this point, most market-oriented countries offer tax incentives for the development of private insurance. Large corporations also begin to provide self-administered health insurance benefits to their employees.

With development, the growing number of formal sector employees offers an opportunity for a country to expand the scope of its social insurance system. Most Latin American countries established their embryonic Bismarkian social health insurance systems at this stage. At the same time, with an increasing knowledge base and managerial expertise, the social insurance plans of low- and lower-middle-income countries frequently establish direct provision of health services. Under direct provision, the insurance plan organizes and manages its own hospitals and clinics, employing physicians on salary and centralizing the purchase of drugs and other supplies. Insured patients must obtain their health services from the facilities run or contracted by the insurance plan. Usually, these facilities offer a relatively high quality of services—lower than what is offered in the private sector but higher than that offered by government facilities. The direct provision of services for the insured creates a clearly definable new tier of financing and provision of health care. By establishing a separate institution to finance and deliver health services, the social insurance plan also creates a new political interest group.

5. Comparison of Performance

Table 9 shows the outcomes by model for selected low- and lower-middle-income countries. In terms of cost-effectiveness, the central-planning model

Table 9. Selected Low- and Lower-Middle-Income Countries: Health Expenditure and Results by Model

	Per Capita GNI (2004 World Bank Atlas method)	Per Capita GDP (2004 PPP $US)	Percent of GDP Spent on Health		Health Status Indicators (2004)			
			Total (2003)	Government (2003)	Life expectancy	Infant mortality rate (per 1,000)	Under-age-five mortality rate (per 1,000)	Risk protection
Government-oriented model								
Bangladesh	440	1,875	3.4	1.1	63.5	56.4	77.0	Medium
India	620	3,115	4.8	1.2	63.5	61.6	85.2	Medium
Kenya	460	1,063	4.3	1.7	48.4	78.5	119.5	Low
Nigeria	390	1,113	5.0	1.3	43.7	101.4	196.6	Low
Sri Lanka	1,010	4,173	3.5	1.6	74.4	12.0	14.1	High
Market-oriented model								
Indonesia	1,140	3,583	3.1	1.1	67.4	29.6	38.4	Low
Philippines	1,170	4,558	3.2	1.4	70.8	26.0	34.4	Medium
Central-planning model								
China	1,290	5,495	5.6	2.0	71.4	26.0	31.0	Low
Vietnam	550	2,704	5.4	1.5	70.3	17.4	23.2	Medium

Source: World Bank (2006).

Table 10. Low- and Lower-Middle Income Countries: Comparison of Health Care System Performance

	Equity in						Cost-Effectiveness	
	Level of health status		Access to basic services		Degree of risk protection			
	Rating	Strategy and results	Rating	Strategy and results	Rating	Strategy and results	Health	Risk protection
Government-oriented model	L	F: General-revenue financing O: Minimum intersectoral coordination Government-operated programs and facilities ↓ • Inadequately funded, poorly managed public health services • Poor nutrition and public health ↓ Large differences in level of health status between rural and urban populations, and between rich and poor	M	F: Rationing by quality of service. Budget allocation by formula, not by need I: Budget for public facilities based on plans Salaried civil service health practitioners ↓ • Poor quality of services • Shortages of drugs and supplies ↓ Equal access to public health services. Some patients have to pay for own drugs and supplies	L	F: Government-funded free health services ↓ Protection for large hospital expenditures, but varies depending on whether supplies and drugs are available	High spending for health, low efficiency, poor outcome, except for a few countries such as Sri Lanka	High spending, modest protection for most of the population
Market-oriented model	L	F: General revenue + social insurance + prepaid medical plans Subsidize private sector facilities O: Minimum intersectoral coordination Government-operated programs and facilities ↓ • Inadequate funding, poorly managed public facilities • Poor public health and nutrition • Misallocation of resources ↓ Large differences in level of health status	L to M	F: Rationing by price and quality Budget allocation by formula Private insurance serves narrow market I: Budget for public facilities based on plans Salaried civil service health practitioners ↓ More adequate funding for public health services • Large quality difference between public and private sector services ↓ Equal access to public hospitals, unequal access to (price-rationed) primary care	L to M	F: *Government funded free hospital services.* Social insurance for some formal sector workers ↓ Protection for large hospital expenditures but varies according to the availability of drugs and supplies. Insurance for those covered by social insurance	High spending, poor outcome, except for a few countries	High spending, modest protection for most of the population

Central-planning model	H	F: General revenue + social insurance + community financing + user fee Better intersectoral coordination O: Government operated hospitals Community-operated primary care Social mobilization ↓ • Better public health, health knowledge, and nutrition • Availability of essential drugs and primary care ↓ Medium differences in level of health status	H	F: Rationing by quality and price at different levels of service O: Community-level control of primary care Social mobilization R: Low price for drugs and services ↓ Equal access to primary care, essential drugs, and public hospitals	H	F: Government-funded public hospitals charging low user fees R: Low prices for essential drugs ↓ Protection for large hospital expenditures and drug outlays	Low spending, good health outcome	Low spending, medium protection for most, modest protection for the poor

Notes: F, O, I, and R denote financing, macro-organization, incentives, and regulations, respectively. L, M, and H denote low, medium, and high, respectively.

clearly outperforms the other two models. The countries that adopted the central-planning model spent less of their GDP on health care but achieved better health outcomes and risk protection for their citizens. Table 10 (see p. 58) shows how well the three models performed in attaining health objectives.

6. Guideposts for Macroeconomists

In general, macroeconomists should rely on the guidance of the World Bank and WHO in appraising the performance of a country's health care system and should support the policy advice offered by these institutions. A particularly useful source is the work of the Disease Control Priorities Project, which has drawn on the expertise of a team of researchers from the World Bank, academia, and the U.S. National Institutes of Health. Their recent report (Jamison and others, 2006) examines the key intrasectoral policy choices in the health sector of low-income countries, the choice of interventions to be delivered to the target population based on cost-effectiveness criteria, and the relevance of policy choices in other sectors.[10] Macroeconomists, however, should consider the following broad guidelines:

- *In assessing a health care system's performance*, macroeconomists can compare a country's input and output indicators with those of a best-performing country and a median-performing country. The input indicators could be health care spending, available facilities, and human resources. The output indicators could be the level of health status, risk protection, and the equity and efficiency of both. Table 11 gives a benchmark for Sri Lanka—which we characterize as a "best"-performing country (see also Box 1), and Table 12 gives a benchmark for Belize, which is more of a "median"-performing country among these two stages of development.
- *Broad recommendations*: A country should take the following important policy steps in order not to repeat other countries' mistakes:
  - Formulate a rational and coherent overall health sector policy, so that the allocation of resources can be rationalized and health-related programs in various ministries coordinated;
  - Establish a cabinet-level committee, chaired by the deputy prime minister, to review and monitor health policy implementation;
  - Formulate a list of essential drugs, so bulk purchases can be made through an international bidding process, and so that an organized, nationwide distribution system can be established;

[10]See WHO (2006) for a discussion of the challenges that arise as countries seek to formulate coherent policy frameworks following the CMH initiative.

Table 11. Input and Output Indicators of a Best-Performing Low-Income Country: Sri Lanka

Input Indicators	
Health expenditure per capita (2003, $US)	31
Health expenditure, total (2003, as percent of GDP)	3.5
Hospital beds (1999, per 1,000 people)	2.2
Physicians (2004, per 1,000 people)	0.5
Output Indicators	
Aggregate	
Level of health status	
Infant mortality rate (2004, per 1,000 live births)	12
Life expectancy (2004)	74.4
Risk protection	High
Equity in:	
Net benefits	High
Access to health care	High
Risk protection	Medium/High
Efficiency in:	
Health care	High
Risk protection	High

Source: World Bank, World Development Indicators (2006).

Box 1. Sri Lanka: A Country with Exceptional Performance

Among the Stage I countries, Sri Lanka stands out for its health achievements under the government-oriented health service model. In 1996, other countries in this category had infant mortality rates of 61–114 per 1,000 live births, whereas Sri Lanka had a rate of 17 per 1,000 and a life expectancy of 73 years, and spent only $2 per capita (on a 1996 purchasing power parity basis) for health care. These enviable accomplishments seem to be the result of two key factors. First, Sri Lanka has created a professional culture for its health care practitioners: they place professional commitments first, self-interest second. Despite low pay and poor working conditions, they are dedicated to their public health duties. Although most experienced public sector physicians have private practices on the outside and earn most of their income from these, they still work their full shift for the public facilities and perform their duties faithfully. They do so voluntarily, without close oversight. Second, Sri Lanka has established a well-organized system at the village level, staffed by midwives who provide effective health education and basic primary care for mothers and children.

Table 12. Input and Output Indicators of a Median-Performing Low-Income Country: Belize

Input Indicators	
Health expenditure per capita ($US 1997 PPP basis)	158.0
Health expenditure, total (as percent of GDP)	4.7
Hospital beds (per 1,000 people)	2.7
Physicians (per 1,000 people)	0.6
Output Indicators	
Aggregate	
Level of health status	
Infant mortality rate (per 1,000 live births)	44.6
Life expectancy	73.2
Risk protection	Medium
Equity in:	
Net benefits	Medium
Access to health care	Low
Risk protection	Medium
Efficiency in:	
Health care	Medium
Risk protection	Low

Source: World Bank (1999).
Note: PPP = purchasing power parity.

- Avoid a fee-for-service payment system for social and private insurance because this type of payment system increases health care cost inflationary pressures;
- Be cautious about accepting donor assistance for tertiary hospitals, because the operations and maintenance costs at this level can absorb a significant portion of a country's health budget, and a careful assessment of the costs and benefits of accepting such assistance should be made; and
- Avoid situations in which a ministry of health and/or social insurance plan funds and manages its own facilities because ministries can easily become "captured" by ministry-employed health practitioners, resulting in their interests dominating those of patients.

- *Some elementary policy strategies*—certain policy strategies will improve health care system performance, including the following:
  - Introduce or increase excise taxes on tobacco;

- Avoid across-the-board cuts in health programs; if cuts are necessary, they should be made in tertiary and university hospitals, which are less cost-effective and do not offer risk protection to low- and middle-income households; and
- Develop a coherent health financing plan that includes developing social insurance to fund tertiary and hospital services for the urban population; shifting current government funds in order to subsidize the urban poor and rural populations; developing community-level financing for rural residents; targeting hospital subsidies to ward services; charging users the full cost of fees of A-class services, based on their full cost plus a profit margin; and using the profits of such a system to cross-subsidize ward services.

C. Stage III: Upper-Middle-Income Countries[11]

1. General Description

For Stage III countries, health care financing and provision systems are more distinct. As the size of affluent and middle-class populations increases with economic growth, access to different parts of the health system become more clearly segmented into two or three tiers, depending on whether a country has developed a strong social insurance program. In the first tier, private insurance usually covers the top income group, which may comprise 10 to 20 percent of the total population. These privately insured individuals obtain their health care largely from private clinics and hospitals. For the rest of the population, financing and provision depend on which of three models the country uses.

2. Generic Models

a. National health service model (for example, Malaysia and Turkey)

Financing. Under this model, the government gives priority to developing the public health service and funding it adequately. Health practitioners receive reasonable salaries, drugs and medical supplies are available, and everyone has equal access to these public services. However, the demand for hospital outpatient and inpatient services exceeds supply, resulting in rationing (for example, long waiting time, lack of physician choice, and unfriendly practitioners). Consequently, for minor illnesses, middle-class patients still seek private sector services and pay out of pocket. In fact, health care becomes a two-tier system: private sector services and public health services.

[11]Per capita GDP incomes of $5,001–$12,000, on a 1997 PPP basis.

Macro-organization. The government operates the public health services as a three-level system—hospitals, health centers, and primary care clinics. However, because these countries have become more urbanized, most people at the district level live close to a city, and thus bypass the district-level facilities and go directly to the city's public hospitals. At this stage of health development, private sector providers expand beyond their previous niche market, and the private hospitals and clinics actively compete with the public facilities by offering better-quality services. Although the public health services are free or nearly free, many middle-income households are willing to pay out of pocket for these higher-quality private services.

Incentives. With an increase in the number of middle-class and affluent households, private sector physicians can charge high fees and earn top incomes. The higher income potential in the private sector attracts many experienced and well-qualified physicians from the public sector. Unless the government increases physicians' salaries, the public health service loses its most qualified and experienced physicians. This competition for health practitioners exerts substantial pressure on the health budget.

Regulation. The government usually continues its policy of benign neglect toward private insurance and health providers, who therefore operate very much in a laissez-faire environment.

b. Social insurance model (for example, most Latin American countries)

Financing. Under this model, the government's compulsory social insurance plan covers workers in the formal sector. This plan is usually financed by a payroll tax, although the government continues to fund and operate a three-level public health service. Uncovered, nonaffluent households rely on public hospitals for inpatient services. However, when they have minor illnesses, they pay out of pocket and seek services from the private sector.

Macro-organization. Social health insurance plans establish a separate system of clinics and hospitals. The insured have to obtain their services from these facilities. Although this monopolistic power reduces the incentive for these facilities to be efficient and offer quality services, they are usually fairly well funded, their staff is adequately paid, drugs and supplies are available, and the quality and availability of services are much better than for public health services. These countries therefore have a distinct three-tier system: private, social health insurance, and public health service. These tiers operate independently of each other, without much crossover or competition.

Incentives. Physicians and health practitioners are salaried when employed by social insurance plans or the public health service. Labor disputes and strikes are frequent. Patients have little choice regarding where they can obtain

services. In effect, public and social insurance hospitals can operate much like monopolies because insured patients have to use their services or else pay large sums out of pocket.

Regulations. In most of these countries, the regulation of health care providers, private insurance plans, and private hospitals is inadequate. Most of the private sector operates in a laissez-faire environment. Few countries have adequate programs for accrediting health practitioners or for monitoring service quality.

c. Market-oriented model (for example, Thailand)

Financing. Under this model, the government uses various policies to encourage the development of private and social insurance, which can cover a majority of the population. The government either establishes a separate insurance plan for poor and low-income households and subsidizes their premiums (for example, Thailand's health card system) or pays for their health services (for example, Lebanon). To be eligible for the government subsidy, the household must satisfy a means test. These households can also choose to go to private sector providers.

Macro-organization. These countries continue to fund and operate a network of public health facilities that provide low-cost services (for example, Thailand), but the supply of such services is far less than demand. De facto, such facilities serve as insurance for the uninsured. In contrast, the majority of health services are delivered by private hospitals and clinics, which compete actively with both the public sector and each other for patients. For patients who are insured, their insurance pays for these private services.

Incentives. The insurance funds usually pay hospitals and clinics on a fee-for-service basis. Although fees are negotiated between payers and payees, private providers can induce demand and increase the quantity of services, and can—and often do—charge patients additional amounts above the fees received from the insurance funds (that is, balance billing). Consequently, these countries face high rates of health expenditure inflation. In short, they experience what the United States went through in its earlier years of insurance development. To address these pressures for health expenditure inflation, some countries (for example, Thailand) have moved to payment by capitation.

Regulations. The government often establishes favorable regulations to promote private insurance and private hospitals. These regulations may include tax subsidies, land grants, and laissez-faire policies toward monopolistic practices and pricing.

Table 13. Upper-Middle-Income Countries: Health Care Expenditure and Results by Model

	Per Capita GNI (2004 World Bank Atlas method)	Per Capita GDP (2004 PPP $US)	Percent of GDP Spent on Health (2003)		Health Status Indicators (2004)			
			Total	Govern-ment	Life expectancy	Infant mortality rate (per 1,000)	Under-age-five mortality rate (per 1,000)	Risk protection
Public health service model								
Malaysia	4,650	9,760	3.8	2.2	73.5	10.2	12.4	High
Turkey	3,750	7,710	7.6	5.4	69.9	28.3	32.0	Medium
Social insurance model								
Colombia*	2,000	7,121	7.6	6.4	72.6	17.5	20.5	Medium
Argentina	3,720	12,723	8.9	4.3	74.6	16.2	18.2	Medium
Costa Rica	4,670	9,805	7.3	5.8	78.7	11.3	12.6	High
Market-oriented model								
Thailand*	2,540	8,179	3.3	2.0	70.5	18.2	21.2	High

Source: World Bank (2006).
Notes: GNI = gross national income; PPP = purchasing power parity.
*The World Bank classifies these as lower-middle-income.

Table 14. Upper Middle-Income Countries: Comparison of Performance by Model

	Equity in						Cost-Effectiveness	
	Level of health status		Equal access to reasonable services		Degree of risk protection			
	Rating	Strategy and results	Rating	Strategy and results	Rating	Strategy and results	Health	Risk protection
Public health service model (Malaysia)	M	F: General revenue provides adequate funds O: Government-operated programs and facilities ↓ Public health service available to all Poorly managed public health services ↓ Medium differences in level of health status	H	F: Rationing by quality of services I: Budget for public facilities *Salaried civil service health practitioners* ↓ The affluent demand higher quality, go to private sector providers ↓ Two tiers in quality of services	M/H	F: Adequately funded free public health service ↓ Public health services offer basic protection to all citizens	Modest spending, good health outcome	Modest spending, good protection for all
Social insurance model (Latin American countries)	L	F: General revenue financed public health services used by the poor Compulsory social insurance Private insurance ↓ Large differences in level of health status	M	F: Rationing by quality of service I: Budget for social insurance and public facilities *Salaried civil service health practitioners* ↓ The affluent demand higher quality, go to private sector. Social insurance has more funds and provides better quality of services ↓ Three tiers in quality of services	M	F: Govt-funded free public health services Social insurance for formal sector workers ↓ Public health services, when available, offer basic risk-protection for the uninsured	High spending, modest health outcome	High spending, good protection for the insured. Protection for the low-income and poor depend on availability of public health services
Market-oriented model (Lebanon, Thailand)	L	F: General-revenue financing for public health services or insurance for the poor Compulsory social insurance Private insurance ↓ Large differences in level of health status	M	F: Rationing by quality of services and by price ↓ Three tiers in quality of services	M	F: Government-funded free public health services Social insurance for formal sector workers Private insurance for the affluent ↓ Public health services, when available, offer basic risk-protection for the uninsured	High spending, modest health outcome	High spending, good protection for the insured. Protection for the poor depends on availability of public health services

F, O, I, R denote financing, macro-organization, incentives, and regulations, respectively. L, M, and H denote low, medium, and high, respectively.

3. Comparison of Performance

Table 13 (see p. 66) compares the performance under the three models The public health service model (for example, Malaysia) seems to outperform the other two. The high spending and low outcome under the social insurance model may be particular to Latin America because social insurance has often proven to be very politicized in that region. Consequently, social insurance–managed health facilities appear very inefficient and at times a source of corruption.[12]

Table 14 (see p. 67) compares the performance of the three models and analyzes how they affect the level and distribution of health status and risk protection, as well as the cost-effectiveness of their systems. As for equal access to health care, the upper-middle-income countries have the economic capacity to provide equal access only to "reasonable" health services. The affluent and upper-middle-income households do pay out of pocket for services that provide better personal quality, such as convenience, amenities, and physician and hospital choice.

4. Guideposts for Macroeconomists

- *Useful data*—in assessing health system performance, three types of data should be sought: the National Health Account (NHA), compiled according to international standards; the latest statistics on infant mortality rate, under-age-five mortality rate, and life expectancy; and per capita public health spending for the poor. The NHA should reveal what share of the public health budget is allocated to public health, disease prevention, and maternal and child health. This share should be at least 10 percent.
- *In assessing performance*—macroeconomists should make a quick assessment of the health care system's performance by comparing a country's input and output indicators with those of a best-performing and a median-performing country. The input indicators could be health care spending, available facilities, and human resources. The output indicators could be level of health status, risk protection, and the equity and efficiency of both. Tables 15 and 16 provide benchmarks for Stage III countries (covering two best-performing countries, Malaysia and Costa Rica, and one median-performing country, Colombia.)

[12]As reflected in the case of the United States, such inefficiencies are not limited to social insurance models.

Table 15. Input and Output Indicators of Two Best-Performing Upper-Middle-Income Countries

Part A. Malaysia	
Input Indicators	
Health expenditure per capita (2003, $US, PPP basis)	163
Health expenditure, total (2003, as percent of GDP)	3.8
Hospital beds (2001, per 1,000 people)	1.9
Physicians (2000, per 1,000 people)	0.7
Output Indicators	
Aggregate	
Level of health status	
Infant mortality rate (2004, per 1,000 live births)	10.2
Life expectancy (2004)	73.5
Risk protection	High
Equity in:	
Net benefits	Medium
Access to health care	High
Risk protection	Medium/High
Efficiency in:	
Health care	Medium/High
Risk protection	Medium/High
Part B. Costa Rica	
Input Indicators	
Health expenditure per capita (2003, $US, PPP basis)	305
Health expenditure, total (2003, as percent of GDP)	7.3
Hospital beds (2003, per 1,000 people)	1.4
Physicians (2000, per 1,000 people)	1.3
Output Indicators	
Aggregate	
Level of health status	
Infant mortality rate (2004, per 1,000 live births)	11.3
Life expectancy (2004)	78.7
Risk protection	High
Equity in:	
Net benefits	High
Access to health care	Medium
Risk protection	High
Efficiency in:	
Health care	Medium
Risk protection	High

Source: World Bank (1999).
Note: PPP = purchasing power parity.

Table 16. Input and Output Indicators of a Median-Performing Upper- Middle-Income Country: Colombia

Input Indicators	
Health expenditure per capita (1997, $US, PPP basis)	359.6
Health expenditure, total (as percent of GDP)	6.9
Hospital beds (per 1,000 people)	1.3
Physicians (per 1,000 people)	1.0
Output Indicators	
Aggregate	
Level of health status	
Infant mortality rate (1997, per 1,000 live births)	24
Life expectancy (1997)	70
Risk protection	Medium
Equity in	
Net benefits	Medium
Access to health care	Medium
Risk protection	Medium
Efficiency in	
Health care	Medium
Risk protection	Medium

Source: World Bank (1999).
Note: PPP = purchasing power parity.

- *In reviewing policy programs*, it is important to determine whether public resources are misallocated. A poor level of health status, especially a high infant mortality rate, indicates that the country either underfunds public health and preventive programs or is ineffective in the delivery of these services. These problems are likely to occur for poor and low-income communities, particularly in rural areas and urban slums.
- *If poor health status is due to inefficiencies* in the public health and social-insurance-operated facilities, poor management (or corruption) can be remedied by separating the financing function of the social insurance fund from the health service provision function. Using the principles of competition to improve efficiency and quality of services, patients should be given a choice as to where to seek services—from the public or private sector—and the payment for the services should follow the patient. In other words, the public or social-insurance-operated facilities should not automatically receive a budget; they should have to compete for patients.
- *Targeting public funds*—for the countries operating under either the social insurance or the free-market-oriented models, most of the public budget should be allocated to subsidize poor and low-income households.

D. Stage IV: Advanced Economies[13]

1. General Description

All advanced economies try to contain health expenditure inflation while achieving their health care objectives. They try different approaches in financing, organization, payment systems, and regulation of health care, yielding different outcomes. Five generic models have survived. Although the model structures vary, the basic driving forces, incentives, and constraints are similar because their objectives are similar (except in the United States).

The first objective—*equal access and universal coverage*—has been achieved in all advanced economies other than the United States. Because adequate health care is often essential to survival, most advanced economies consider equal access to reasonable health care a fundamental right.

The second objective—*cost containment*—is a priority in health policy, driving the health care reform process of many advanced economies. Health expenditure is consuming an increasing share of national income. Most countries are struggling to establish effective budget constraints on the health sector and to limit the government's burden in financing health expenditure. By the early 1980s, Canada and most Western European countries did so by establishing global budgets and a single source of payment for providers. However, constraining resources has meant the introduction of mechanisms for rationing health and medical services. Countries have used different such mechanisms, including price, limited choice of providers, and increased waiting time. It has also led to efforts to influence the professional culture of physicians, in effect asking them to practice more conservatively rather than aggressively.

The third objective—*efficient and high-quality health care*—has become another driving force in health sector reforms in advanced economies. In line with the increased emphasis on market processes and competition since the 1980s, sluggish performance of public health care provision has come under scrutiny. The main question is how to organize the health care delivery system and how to structure incentives to obtain maximum efficiency and quality of care (see Cutler, 2004; and Porter and Teisberg, 2006). Several experiments have been undertaken to enhance the efficiency of public sector operations, such as greater use of contracting procedures, greater reliance on incentives to alter behavior, and increased emphasis on regulation.

[13]Advanced economies are defined as those with a per capita GDP of $12,001 or more on a 1997 PPP basis.

2. Generic Models

a. National health service model (for example, the United Kingdom)

The principal health care objective of the United Kingdom is to provide universal and equal access to health care. To achieve this, the government funds its health care system primarily out of general tax revenues. The health budget is apportioned to each region according to a formula that takes into account population need. Total health expenditure is managed through the political process, where funding for health care competes against other national needs, such as education and defense. Every citizen has equal access to the services provided by the National Health Service. Primary care is readily available, but less cost-effective procedures, such as hip replacement, are rationed by waiting time. As a result, 13 percent of the population purchases private insurance allowing them to bypass queues. A 1989 reform introduced an internal market to improve efficiency and the quality of health care. This reform is now being refined to make the internal market work more effectively (see Wanless, 2002, 2004.)

b. National health insurance model (for example, Canada)

Canada also gives priority to universal and equal access to health care. This is accomplished through a national health insurance scheme that offers every citizen free medical services (dental and outpatient drugs are excluded). The federal government and provinces jointly fund the cost of national health insurance but the program is established and administered by the provinces. The provincial health insurance plan must meet certain standards set by the federal government: coverage must be universal, comprehensive, and portable, and include "all medically needed services." Patients are free to choose physicians and hospitals, but must see a general practitioner to be referred to specialists. Physicians are paid on a fee-for-service basis. Expenditure inflation is managed by establishing global budgets for hospitals and for physicians' services. Physicians' fees are set by the provincial medical associations through an internal bargaining process. This process is designed to satisfy the global budget cap. To manage the volume of services, each province monitors the quantity of services delivered by each physician. Because all claim payments are paid through one centralized agency, the provinces keep a practice profile on each physician and hospital. Medical associations are responsible for monitoring and disciplining aberrant physicians.

c. Social insurance model (for example, Germany)

Germany's health care system can be characterized by "social solidarity," whereby the financial risks are pooled through a mandatory insurance

system. Every worker with earnings below a specified level ($45,000, in 1996) must enroll in a sickness fund. Premiums are set as a percent of wages. A basic benefit package incorporating copayment features is uniformly defined for all sickness funds. Patients are free to choose providers. Until July 1, 1998, expenditure inflation was managed by global hospital budgets and regional global budgets for physician services and pharmaceuticals. These global budgets were established through negotiations between the sickness fund association and medical association of each region. The changes made in July 1998 replaced the regional budgets for physician services with a fixed fee schedule and service volume targets. Regional budgets for pharmaceuticals were replaced by practice-specific soft targets. At present, it is not clear how these 1998 changes will manage health expenditure inflation. Many experts expect Germany to revert to its previous strategy of global budgeting for this purpose.

d. Voluntary health insurance model (for example, United States)

The United States emphasizes individual freedom and choice and gives low priority to equity. As a result, it relies on voluntary private health insurance to finance health care. To prevent adverse selection, most private health insurance is sold to employees through their place of employment, which leaves the elderly, unemployed, and the poor—those who tend to need more health care—without coverage. The government has had to finance these uninsured groups: federal Medicare coverage is available for the elderly, and the states fund Medicaid to cover the poor. This pluralistic system still leaves approximately 44 million uninsured. The existence of numerous private health insurance plans weakens the plans' bargaining power with providers, yet enhances the ability of the medical providers to earn monopolistic profits, which accelerates health expenditure inflation. To balance the market power of the purchaser and seller, most large businesses support managed competition (an approach designed and advocated by Alain Enthoven (1994)). Managed competition requires complex and sophisticated organizations to manage medical practices, and the administrative costs can be substantial. Furthermore, it is not clear that managed competition can contain health expenditure inflation in the long run, despite its success in the 1990s in reducing the oversupply of hospital beds in the United States.

e. Individual savings accounts with catastrophic insurance model (for example, Medisave in Singapore)

Singapore emphasizes self-reliance and individual responsibility, which is reflected in the structure of its health system. The government mandates that every worker save 6 to 8 percent of his or her annual wages for inpatient hospital and expensive outpatient procedures. This amount is deposited into an individual savings account (Medisave). Because these savings are not

sufficient to cover hospital expenses, the government has also established a catastrophic insurance plan, for which the premium is paid from the Medisave account. To ensure that everyone has access to basic health services, government hospital wards are divided into classes A, B, and C. The government heavily subsidizes the cost of B and C ward services, with the patient paying a modest amount. To control health expenditure inflation, the government sought to introduce market competition—competition between public and private hospitals. This did not moderate the expenditure inflation rate, and the government reverted to planning and regulation to achieve this objective (Singapore Ministerial Committee on Health Policy, 1993).

3. Comparison of Performance

Table 17 presents a statistical comparison of the performance of the five models. The data clearly indicate the poor performance of the voluntary insurance model. Table 18 compares the structural elements and the performance of the five models. Three main conclusions emerge from this comparative analysis: (1) to ensure equity, a government must play a strong role in financing health care; (2) the efficiency and quality of health care can be improved with competition, incentives, and macro-organization; and (3) health expenditure inflation can be managed by establishing a "hard" budget constraint for the health sector. Competition and demand-side measures (such as direct patient payments) have proven to be ineffective in controlling health expenditure inflation.

4. Guideposts for Macroeconomists

All advanced economies except the United States ensure that their citizens have equal access to reasonable health care and risk protection. But all advanced economies are confronted with three questions: (1) Are the health systems structured in the most cost-effective way? (2) Do countries have strategic plans to deal with health care costs for their populations? and (3) Do they have effective "hard" budgets for their entire health sectors to help manage health expenditure inflation and promote efficiency?

- *In requesting data*, it is useful to obtain a copy of the NHA, statistics on the country's infant mortality rate and health expenditure inflation rate for the past 15 years, and a 25-year projection of national or social insurance program costs as a percent of GDP.
- *In assessing performance*, a quick assessment can be made of the health care system's performance by comparing the country's input and output indicators with those of a best-performing country and a median-performing country. The input indicators could be health care spending, available facilities, and human resources. The output indicators could be

Table 17. High-Income Countries: Health Expenditure and Results by Model

	Per Capita GNI (2004 World Bank Atlas method)	Per Capita GDP (2004 PPP $US)	Percent of GDP Spent on Health (2003)		Health Status Indicators (2004)			
			Total	Govern-ment	Life expectancy	Infant mortality rate (per 1,000)	Under-age-five mortality rate (per 1,000)	Risk protection
National health service model (United Kingdom)	33,940	30,843	8.0	6.9	78.5	5.3	5.8	Universal
National health insurance model (Canada)	28,390	31,129	9.9	6.9	79.8	5.2	5.7	Universal
Social insurance model (Germany)	30,120	28,147	11.1	8.7	78.5	4.2	4.7	Universal
Voluntary health insurance model (United States)	41,400	39,618	15.2	6.8	77.4	6.7	7.6	15% of population uninsured
Medisave with catastrophic insurance model (Singapore)	24,220	27,273	4.5	1.6	79.3	2.6	3.3	Universal

Source: World Bank (2006).

Table 18. Comparison of Performance: Advanced Economies

	Equity in			
	Level of health status		Equal access to services	
Model	Rating	Strategy and results	Rating	Strategy and results
National Health Service (United Kingdom)	H	F: General revenue financing Allocate resources to region by "need" formula Allocate resources to fund services according to C/E criteria ⇓ Modest difference in health by social class	H	F: Ration elective surgeries by queues ⇓ Equal access to equal quality of health services
Medisave and catastrophic insurance (Singapore)	H	F: General revenue financing, targeted by class of service Nearly free "C" ward service for all ⇓ Modest difference in level of health status by social class	M	F: Ration by price and quality of services ⇓ Universal access, but to two tiers of quality
National health insurance (Canada)	H	F: General-revenue financed national health insurance ⇓ Modest difference in level of health status by region and social class	H	F: Implicit rationing through conservative medical practices ⇓ Equal access to equal quality of services
Social insurance (SI) (Germany)	H	F: Compulsory SI financed by usage-based contribution ⇓ Modest difference in level of health status	H/M	F: Implicit rationing through conservative medical practices I: Two-tiered pricing ⇓ Universal access, but to to two tiers of quality
Voluntary health insurance and managed care (United States)	M	F: Employment-based insurance for working population General revenue financing for poor and elderly ⇓ Unequal level of health status between the insured and uninsured and by income classes	L	F: Rationing by price and by choice of providers ⇓ Uninsured lack adequate access Multiple tiers of quality

Note: L, M, and H denote low, medium, and high, respectively. F and I denote financing and incentives, respectively.

Degree of risk protection	Cost-Effective in Producing Better Health and Risk Protection	Expenditure Inflation Control
High: universal coverage by National Health Service	Low spending, good health outcome, and universal coverage	Competition for central government budget ⇓ Very effective in managing inflation
High: universal insurance for catastrophic expenses	Low spending, good health outcomes, and basic universal protection	Two-sector competition ⇓ Modestly effective in managing inflation
High: universal insurance coverage	Medium spending, good health outcome, and universal coverage	Federal government makes provincial government pay MC ⇓ Provincial government negotiates global budget with hospitals and with medical associations ⇓ Effective in managing inflation
High: universal insurance coverage	Medium spending, good health outcome, and universal coverage	Direct link and transparent in the cost and benefits of insurance coverage ⇓ Direct bilateral negotiations between payers and payees (providers); single payment pipeline ⇓ Effective in managing inflation
Modest: 17% of population uninsured, but they have some protection by uncompensated care	High spending (partly due to high transaction costs), below average in health outcomes. 17% of population has no risk protection	Competition ⇓ Correct market failures by structuring powerful purchaser groups. Create competing managed care plans ⇓ Effective in earlier years, but un-likely to be effective in the long run

Note: MC = medical costs.

Table 19. Input and Output Indicators of "Best"-Performing Country among Advanced Economies: Canada

Input Indicators	
Health expenditure per capita (2003, $US, PPP basis)	2,669
Health expenditure, total (2003, as percent of GDP)	9.9
Hospital beds (2002, per 1,000 people)	3.7
Physicians (2003, per 1,000 people)	2.1
Output Indicators	
Aggregate	
Level of health status	
Infant mortality rate (per 1,000 live births)	5.2
Life expectancy	79.8
Risk protection	High
Equity in:	
Net benefits	High
Access to health care	High
Risk protection	High
Efficiency in:	
Health care	Medium
Risk protection	High

Source: World Bank (2006).
Note: PPP = purchasing power parity.

the levels of health status and risk protection, and the equity and efficiency of both. Table 19 gives the benchmarks for a Stage IV country—Canada. *In reviewing policy programs*, it is useful to compare the access to and use of health services by the bottom- and upper-quartile income groups, as well as by rural and urban populations.

- The *cost-effectiveness* of the country's health care system depends on the availability of information on the quality of its services. Macroeconomists should request and review the outcome data on the quality of medical services.

Evidence shows that the quality of health care and health expenditure inflation rates are correlated with the number of physicians per capita as well as the mix of family physicians and specialists. Assessments are desirable as to whether the government has a rational policy with respect to the training of medical practitioners that is compatible with the country's health objectives.

E. Transition Economies

This group of countries does not fit into the stages of development analytical framework. These former socialist countries were founded on different ideologies. Their social, economic, and political systems were structured very differently, with the state directing and controlling most social and economic activities. The radical changes since the early 1990s have fundamentally altered the role and capacity of the state and profoundly impacted the health sector and the health of the people. Health policies are, like these economies, moving from centrally planned to market-oriented, and from autocratic politics and governance to pluralistic (or democratic) politics and decentralized governance. Although the pattern, intensity, and speed of change have varied among these economies, common themes and experiences have emerged.

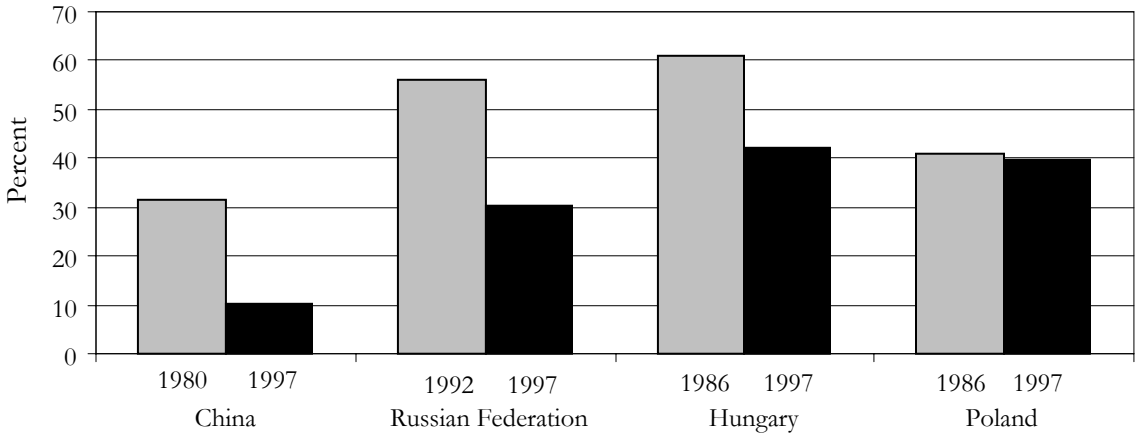
1. Impact of Economic Transition on the Health Sector

Economic transition has drastically changed the state's role and caused a sharp drop in government revenue. Moreover, this transition has widened income disparities, which has affected the demand for health services and thus the income expectations of physicians.

Government revenue as a percent of GDP dropped sharply for all transition economies during the several years of initial transformation. The Chinese experience, after 1980, is most illustrative (see Figure 9). From 1980, when China began its transition, to 1996, government revenue dropped from 33 percent of GDP to 14 percent. Under such circumstances, a government is also pressured by an increase in fiscal demands: price inflation causes health practitioners to demand higher wages and the cost of medical supplies and drugs to increase. The government has to maintain its funding for social programs, such as health care, but also to provide financial support for the increasing number of unemployed. Therefore, governments have often had to reduce funding in real terms for public health services.

Almost all transition economies have experienced widening income disparities, which have significantly affected the health sector. Affluent households are willing and able to pay much higher prices for health services, but others cannot afford to pay. The affluent frequently offer under-the-table payments to government-employed practitioners to obtain higher-quality services or shorter waiting times. Many senior physicians at public hospitals may be attracted by and leave public employment for the financial incentives of private practice. To retain them, the government has to offer higher wages and benefits, which further increase costs. The same market dynamics occur for hospital services: for-profit hospitals respond to the demands of the affluent by supplying expensive high-technology services. To compete, most public hospitals then must supply the same.

Figure 9. Selected Transition Countries: Government Revenue
(Percent of GDP)



Source: IMF internal data.

Widening income disparities have another impact on the health sectors of transition economies. Health practitioners can quickly become dissatisfied that their incomes are no longer in the country's highest 10 percent. Many then turn to corrupt practices, such as asking for under-the-table payments from patients and accepting kickbacks from pharmaceutical companies. To avoid these problems, many governments have chosen to allow government-employed physicians to have private practices in the evening hours so that they can earn additional income. However, private practice income can be several times greater than the government wage, which creates new problems for public clinics. Physicians refer their affluent patients from the clinics to their private practices and then reduce their public clinic hours in order to have more time for their private practices. This causes public health services to deteriorate such that only the poor use them.

2. Background on Centrally Planned Health Systems

Under socialism, countries used the Soviet model for the financing and provision of health care. These systems were supplier dominated; the availability of resources constrained production. The provision of services was organized into two levels: provincial and county. Disease prevention and public health care were the state's responsibility and were often organized as vertical programs. The state financed and owned urban health care facilities, which provided free services to patients. In rural areas, communes were responsible for financing and providing primary care. The state also financed medical education.

Under central planning, supply exceeded demand for hospital beds, physicians, nurses, and other health practitioners (see Figures 10 and 11). As for state enterprises, when public facilities were privatized, large-scale layoffs caused social unrest. In the Eastern European transition economies, the central government transferred the problem by decentralizing public hospitals and clinics to the municipalities, even though most local governments lacked the funds to support the excess hospital beds and redundant health practitioners.

At present in these former socialist countries, many government facilities are underutilized. Wages for health practitioners are set low relative to other professionals, in order to keep costs low. Public hospitals operate inefficiently under a "soft" budget: the government sets performance targets and makes up any deficits hospitals may have. As a result, public hospitals have little incentive to be efficient or to offer quality services. These inherited problems are further exacerbated by the new socioeconomic conditions of transition.

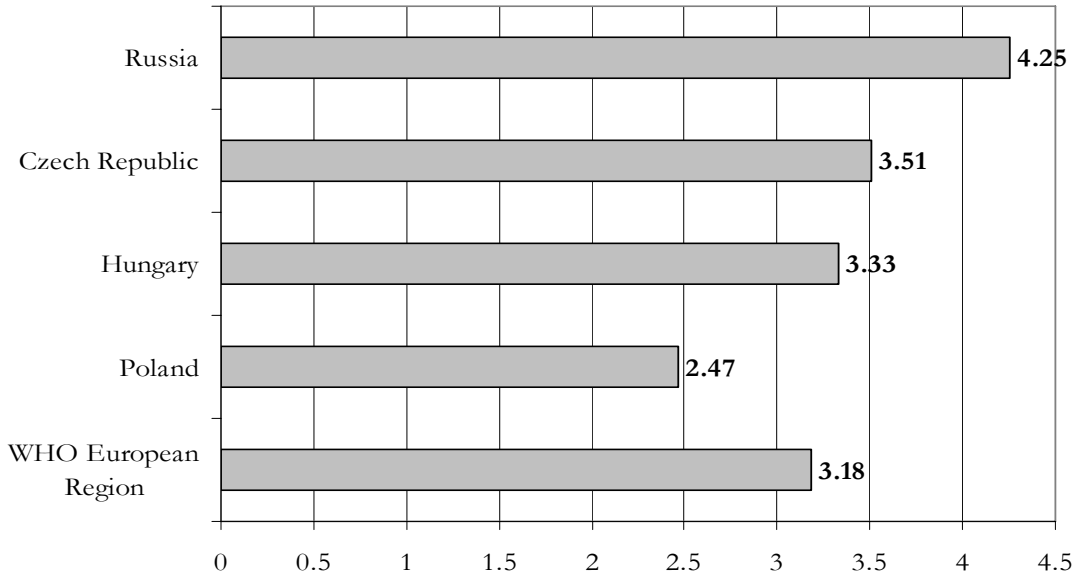
3. Major Health Policy Problems Confronting Transition Economies

For the socialist economies, the health care compensation system was structured very differently from that of market economies. For the former, economic and social security were given greater priority than current cash compensation. The compensation package for workers and collective farmers consisted of low cash wages; deferred compensation, in terms of high pensions and guaranteed health care after retirement; housing, sickness, and disability pay; health care during working years; child allowances; and job security. Deferred compensation obligations were not prefunded. Governments during transition were thus faced with these large social and moral obligations—and liabilities—as they sought to restructure these systems for health care financing and provision.

Another health policy problem arose from the shift from direct government-financed health facilities to social insurance systems. How should the social insurance program pay the hospitals and clinics, and how much should they pay? Under the new insurance systems, governments have relied on the marketplace to set prices. However, if physicians and hospitals are able to use market power to set high monopolistic prices, social insurance plans can go bankrupt, as happened in the Czech Republic and Hungary.

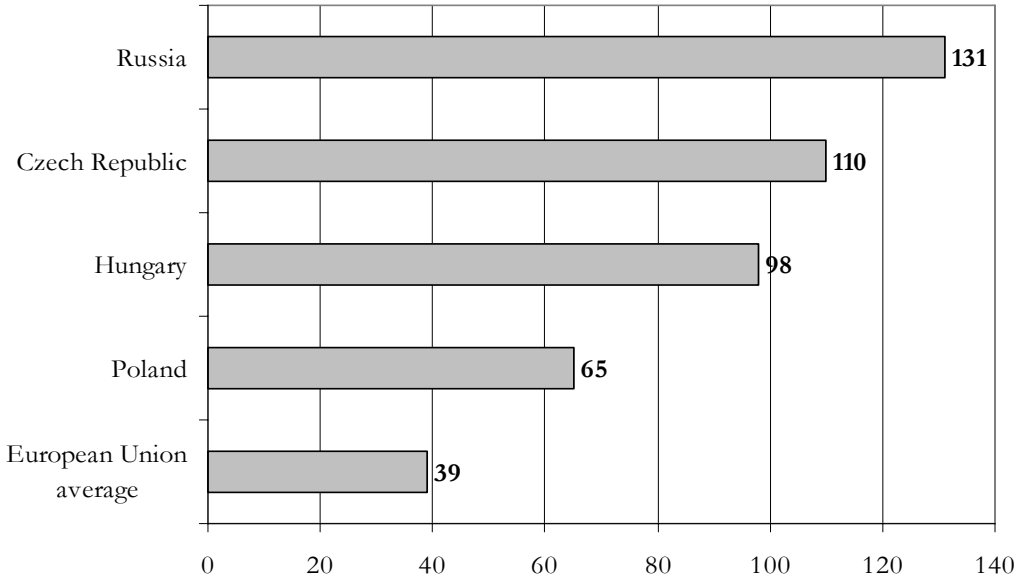
Moving from socialism to capitalism has entailed the opening up of the economy to foreign trade and investments, which has also significantly affected the health sector. Although the inflow of foreign capital, pharmaceuticals, and medical technology has improved medical services, it

Figure 10. Selected Transition Countries: Number of Physicians
(Per 1,000 inhabitants)



Source: World Health Organization, *World Health Report*, 2006.

Figure 11. Selected Transition Countries: Number of Hospital Beds
(Per 10,000 inhabitants)



Source: World Health Organization, HFA database for Central European economics countries and European Union.

has also increased health care costs, because all major hospitals want to be equal in technical sophistication. Affluent households may be able to pay the higher prices associated with imported drugs and new medical technologies, but the poor cannot afford them. The government then faces a dilemma: either the government or the social insurance system finances these increases in health care costs, or the health care system must de facto develop with two tiers of access.

4. Initial Transformation of the Health Sector

For the health sector, the first impact of the economic transition was felt when the government became unable to finance public health services. Most governments, following the advice of international financial institutions (IFIs), promptly introduced three measures to generate new sources of revenue: they established user fees, introduced compulsory social insurance plans, and encouraged foreign investment in new medical facilities and technologies. Most also legalized private medical practices. Unfortunately, the IFIs did not advise health policymakers on the prerequisites for successful revenue mobilization for the health sector. These prerequisites included creating new organizations, developing management know-how, and setting up information systems and regulatory measures to set the rules for market competition. (The lack of competition allowed public hospitals to continue to operate inefficiently under obsolete bureaucratic rules and to retain their monopoly.)

All transition economies have introduced or expanded their compulsory social insurance systems as a new source of financing for health care (see Table 20). Risks are usually pooled on a regional basis. However, because tax evasion is a serious problem, an effective tax collection system is needed, which can take years to establish. In the absence of effective collection, only about one-half to two-thirds of the expected social insurance contributions are collected, and the government must make up the shortfall. This has been the case in the Czech Republic, Hungary, and China.

The level of health status in most transition economies has suffered from all these changes in health care financing and provision. These setbacks were partly due to a decline in preventive programs and a shortage of drugs and medical supplies, both of which resulted from inadequate public funding for health care. These problems were further exacerbated by the use of the limited budget to pay health practitioners first. Meanwhile, the need for health care has increased. For example, the incidence of mental illness has risen owing to unemployment and job insecurity. The experience of Russia is most illustrative. It has suffered an unprecedented reversal in the level of health status, especially among middle-aged males, and overall, the life expectancy of Russians has dropped.

Table 20. Selected Transition Countries: Social Insurance Arrangements

Countries	Year Social Insurance Was Established
Hungary	1990
Czech Republic	1992
Poland	1997*
Vietnam	1997*
China	2000**

Source: Evaluation conclusions of the authors.
Note: *Legislation was passed in 1997 but scheme became effective in 1999.
**China established social insurance in 1953 and expanded coverage in 1997.

5. Generic Models

In this section, transition economies are divided into two groups: middle-, and low- and lower-middle income countries. The first group includes Eastern European countries, which are highly urbanized and have a relatively high per capita income. The second group includes China, Vietnam, and some Central Asian countries, which have predominantly rural populations. In transforming their economies, the low- and lower-middle-income countries have experienced less economic contraction and unemployment. However, they have faced a greater demand for resources to address communicable diseases and malnutrition among rural households, and chronic illnesses and aging in urban areas.

a. Middle-income transition countries (for example, Poland, the Czech Republic, Hungary, and the Baltic countries)

Financing. In these countries, a major problem has been finding new ways to finance existing government facilities and staff. Most countries have established compulsory social insurance to replace general-revenue financing. Tax evasion, however, has been a serious problem. Risks are usually pooled at the regional level or by industry or occupation. To reduce moral hazard, social insurance plans contract providers and pay them on a fee-for-service basis. The insurance benefits package usually requires patients to pay co-insurance. The benefits cover a "reasonable" level of health services to all insured. Those wishing services beyond this level may purchase private supplementary insurance, which pays for a "higher quality" of services. This creates two tiers of health care.

Macro-organization. To address oversupply, inefficiency, and bloated bureaucracy in hospitals, most of these middle-income countries have

decentralized their hospitals to the regional and municipal levels. Local governments are now responsible for managing them, although these governments are in still not in a better position to deal with excess staff and facilities. Nor do they have better managerial capabilities. Often, greater managerial autonomy is given to the hospitals and clinics. Governments frequently encourage private investments to modernize the hospitals. These hospitals then attract more patients and additional private investment. Sometimes the government-owned hospital will form a joint venture with a private investor to offer a new service, such as on-site radiation therapy. Hospital staff are paid at a much higher rate when they give patient care in the private sector. The growth of private hospitals has been rather slow in most transition economies. Some countries have privatized their general practitioner services, allowing them to rent the government's clinical facilities and receive a capitation payment for every patient registered.

Incentives. Transition economies face the greatest difficulty in structuring health care incentives. Two major problems arise: Who should set health service prices? And how should the volume of services be controlled? Some countries have let physicians and hospitals set prices, but this has caused other problems. Some have let insurance plans set prices, but this has also proven problematic. For example, insurance plans in the Czech Republic went bankrupt and the government had to bail them out. When insurance plans have tried to set fees under a fee-for-service system, the volume of services has significantly increased. Only now are countries beginning to learn from the positive experience of some Western European countries that have used hospital global budgets and diagnostic related group (DRG) payment systems.

Regulations. Most of these countries are still weak in their capacity to effectively regulate private and social insurance, ensure the qualifications of health providers, and provide minimal assurances as to the quality of services, pharmacies, and pharmaceuticals. Even if appropriate laws and regulations do exist, they are not enforced, owing to a lack of information and control. Furthermore, the legal systems and courts of these countries are still at an early stage of development.

In summary, the middle-income transition economies are trying to reverse their formerly socialist welfare policies. However, the state had incurred excessively costly obligations to workers and their families. In lieu of paying high cash compensations, the state had promised high fringe and deferred benefits. Moreover, the health care system was being shifted from being supply-side to demand-side dominated. In effect, these countries have had to try to implement 30 years of health care reform in a few years. It is thus not surprising that all have encountered severe difficulties, caused by their lack of understanding of potential market failures and the difficulty of linking the

Table 21. Middle-Income Transition Economies: A Summary of Common Health Sector Problems, Reform Measures, and Consequences

Major Problem	Reform Measure	Consequences	Remedial Actions
Lack of general revenues to continue providing governmental funding for health care	Establish compulsory social insurance. Patients can choose providers, money follows patients, insurance plans pay providers on fee-for-service basis.	Rapid expenditure inflation, some social insurance plans go bankrupt. Governments have had to bail out several plans.	Reduce payment rates to providers, change payment methods, but little control over quantity of services.
Demand by physicians and health care practitioners for higher income	Legalize private medical practices.	Rapid price inflation and increase in quantity of services, causing deficits for social insurance plans. Health costs are shifted to households. Creates two-tiered health care.	Insurance plans change from inflationary fee-for-service payment method to capitation or per case. Providers increase quantity of services rendered and charges to households to offset income loss.
Oversupply of beds, physicians, and health practitioners	Decentralize government hospitals and clinics to local governments.	Burden shifted to local governments. No significant reduction of beds and health practitioners in public sector. Inefficiency and bloated bureaucracy continue.	Necessary, but painful, rationalization of programs, including retraining.
Demand for better-quality health care by higher-income households	Allow for private insurance, encourage private hospital development, liberalize pharmaceutical imports.	Rapid health expenditure inflation, health costs shifted to households. Creates two-tiered health care.	Private insurance plans reduce payment to providers, shifting cost to households.

Source: World Bank, *World Development Report*, 2006.

public and private components of the system. Table 21 shows the major problems confronting transition economies, the reform measures introduced, and the consequences.

b. Low- to lower-middle-income transition countries (for example, Cambodia, China, and Vietnam)

In urban areas, low- to lower-middle-income transition countries have faced problems similar to those of more developed transition economies. They

have implemented similar reforms and experienced similar consequences. In addition, these countries have had problems in financing and providing basic health care to their large rural populations. Again, the transformation of the economy caused the collapse of the funding base for rural health care. Without adequate funding, the government has usually allowed physicians to establish private practices and patients to pay for care on a fee-for-service basis. In government facilities, under-the-table payments have become widespread. The funding base for rural health stations, staffed by modestly trained health practitioners (for example, village doctors), also collapsed. These practitioners then established their own private practices and relied on selling medications and giving injections for their livelihood. Public health care, disease prevention, and the technical quality of primary health care all declined. Rural households have had to pay directly for their hospital costs, throwing many into poverty.

6. Guideposts for Macroeconomists

Transition economies are special cases. The tidal wave of a country's social and economic transformation can overwhelm its health care system. Macroeconomists have to focus on the larger issues, such as economic stability and growth, high unemployment, and corruption. Perhaps the most helpful and productive role they can play in the health sector is to educate the country's economic leaders and suggest specific policies.

In transition economies, economic policymakers often do not have a good understanding of what the government's role in the health care sector should be. In the allocation of public resources, policymakers should give priority to public health and disease prevention, and to subsidies for poor and low-income households, instead of seeking to maintain the jobs and protect the incomes of government-employed health practitioners. Policymakers often assume that the health sector can follow the same policies as other economic sectors, because they do not recognize the serious market failures that exist in health care markets. They typically do not recognize that the government must play a significant role in ameliorating these market failures. For example, the fee-for-service payment system is highly inflationary and often encourages physicians to prescribe inappropriate tests, treatments, and medications.

Regarding specific policies, the government must have a coherent health policy that links all the components of the health care system, that is, the public and the private sector health care services. Otherwise, the transition economies will continue to face rapid health care cost inflation, increasing inequality in access to health care, and inefficiency. Moreover, tobacco excise taxes should be instituted, and the use of generic drugs should be strongly encouraged, following such practices as in the United States.

CHAPTER

7 What Role Can Macroeconomists Play?

A. Low- and Lower-Middle-Income Countries

The CMH was initiated by the WHO as a means of providing an evidence base for economic and financial policymakers in low-income countries on why spending on health was more than simply a consumption good. It sought to make the case that higher spending on health could have significant economic benefits—in fostering higher productivity and growth, over both the short and long term; in making greater use of both available labor resources and even natural resources (where disease vectors may be limiting the capacity to utilize land or resources effectively); as a key instrument in addressing high rates of poverty; and in influencing critical demographic variables (in particular fertility rates) that may be a source of low productivity, dissaving, and low human capital formation.

The CMH report was important in its effort to put health forcefully on the agenda of macroeconomic policymakers and in underscoring the importance of health in setting budgetary priorities. For macroeconomists working on low-income countries, the work of drawing on analyses that demonstrate these points will continue to be an important priority, helping to ensure that spending on health care is appropriately valued when budgetary trade-offs are considered relative to potential spending decisions in other sectors.

However, in low-income countries, a fundamental obstacle to macroeconomists and country policymakers seeking to formulate sound health policy, monitor sector performance, or establish a health safety net is the systematic lack of information on many issues relating to the health sector. Currently, an information gap is the major barrier preventing IMF or country macroeconomists from helping country officials function effectively and rationally in situations where they may need to consider the impact of health on macroeconomic policy (or vice versa). Most non-OECD countries have not gathered the basic data on the inputs and outputs of their health system—for example, total health spending, the poor's access to health care, the efficacy of resources used, operations in the private market, the proportion of households that may be driven into poverty by the need to

incur large medical outlays, and consumer satisfaction. This information gap is a major obstacle to the formulation of an appropriate policy for the health sector.

To allocate public resources, we need to know, for example, how much health care contributes, in general, to health or economic growth or well-being, and the relative marginal benefits derived from additional spending on health care compared to spending on education, sanitation, and rural development. This knowledge is largely absent.

The IMF, as a macroeconomic institution, can do little in the short term to improve the health system performance of most low- and middle-income countries. The reason is simple: these countries lack sufficient information, institutional capacity, and human resources to make systemic changes. Also, the IMF staff should be selective in covering this and other social issues, doing so only when these issues have a sizable and direct effect on macroeconomic developments. In the short run, the IMF should support WHO and World Bank efforts to help countries build a better foundation for formulating an appropriate health policy framework. Some actions are, however, possible:

- *Action #1: Ensure the availability and collection of crucial health information.* The IMF can play an important supportive role in this regard. Although it is not the role of the IMF to advise countries on what specific health data to compile, the IMF is in a unique position to influence government decisions on what broad information is important to collect for informed public policy decision making. Compared with most other international organizations working on health (with the possible exception of the World Bank), the IMF has a much closer working relationship with countries' economic decision makers. Health officials are more likely to collect the necessary information if the ministry of finance mandates and finances the collection. Each year, the national health accounts should be compiled and a report issued on the health (and education) outcomes of the poor. These outcome data can be collected with Rapid Field Assessment instruments. Despite intense efforts made by the WHO and the World Bank, most low- and middle-income countries are not compiling national health accounts on a regular basis.
- *Action #2: Warn policymakers of market failures in the health sector.* IMF economists should be aware, and when the situation arises, advise economic decision makers, that health care markets have many anomalies. *Health policy cannot automatically follow the free-market strategy often used in economic development for economic goods.* A health sector consists of more than a dozen markets, most of which are susceptible to serious market failures (Evans, 1984; Massaro and others, 1994; and Hsiao, 1995).

- *Action #3: Promote rational health policies.* Health sector development requires a distinctive policy strategy that recognizes that it has to deal with both equity and efficiency of health care, and the existence of serious government and market failures. Sound health policy requires a well-designed combination of regulation and competition, public and private financing, and institutional capacity building. In most low- and middle-income countries, taxes on tobacco, alcohol, and firearms should be increased as a preventive health measure and, as fiscal measures, may be relevant for IMF economists to consider. For other health policies, the IMF can reference the strategy for the health sector[1] developed by the World Bank.

B. Upper-Middle-Income, Transition, and Advanced Economies

For macroeconomists working on middle-income and advanced economies, the issue may be less one of inadequate spending on the health sector and more one of reconciling the benefits from higher spending with the costs that may be implied for the macroeconomy. The agenda for macroeconomists with respect to the health sector would appear at least five-fold:

- *To understand better how the organization of health care in a country may be influencing macroeconomic variables:* some of the issues described in Chapter 2 may be particularly germane, others not, and seeking greater clarity would help to focus where policy interventions may be necessary;
- *To encourage governments to obtain greater transparency in understanding how health resources are allocated in an economy* (through the establishment of national health accounts) *and who bears the burden and obtains the benefits of current health spending programs*;
- *To achieve a better understanding of how countries may differ both in their spending in the health sector and in the results obtained in terms of various indicators of health status*;

[1]The World Bank's current health sector strategy is to help members (1) *improve the health, nutrition, and population outcomes of the poor,* by protecting people from the impoverishing effects of illness, malnutrition, and high fertility rates; (2) *enhance health care system performance* by promoting equitable access to preventive and curative health, nutrition, and population services that are affordable, effective, well managed, of good quality, and responsive to clients; and (3) *secure sustainable health care financing* by mobilizing adequate levels of resources, establishing broad-based risk-pooling mechanisms, and maintaining effective control over public and private expenditure (World Bank, 1997a, p. 1). A new Bank policy strategy document is under consideration that advocates more attention to health systems, an emphasis on the multisectoral dimensions of policies to improve health, a reduced role for disease-specific work, and a broadened focus to include middle-income countries.

- *To encourage ministries of finance to understand the factors influencing health spending in their country,* to put pressure on the relevant government agencies involved in spending on health care to clarify major differences that may pertain to their approach to health care provision relative to other countries; and
- *To understand the broad approaches that different countries have used in controlling health care costs*, while staying clear of more specific policy proposals (for example, controlling prices or wages or entry into the medical profession) for which macroeconomists may be ill suited in terms of understanding potential unintended consequences.

A larger challenge for macroeconomic policymakers is the enormous gap that exists between the recognition of the need to achieve more effectiveness in the use of resources to achieve quality health outcomes and the knowledge base available to implement good policies to achieve these outcomes. For example, one would think that policymakers in the health care sector of a country would vitally need to understand how their counterparts in other countries are addressing similar problems and the differences in results obtained. Similarly, and perhaps even more powerfully, with rapid technological changes, physicians are confronted with the need to decide which new drugs or medical techniques are best able to effectively treat and improve the quality of life of patients. From a financial perspective, governments or health insurance schemes have an equally germane interest in knowing whether to finance the provision of these new drugs and technologies, and which are likely to prove more expensive than earlier treatment approaches. Is there a sufficient evidence base that allows these decisions—which will have ramifications for cost and ultimately macroeconomic variables—to be sensibly based (see Cutler, 2004)?

Clearly, these are gaps on whose closure macroeconomists are poorly suited to provide guidance. But, ultimately, the better these knowledge gaps are filled, the less need there will be to rely on blunt policy instruments (for example, rationing, limits on wage rates, controlling prices, global budget constraints) to close budgetary financing gaps and the more likely it will be that high-quality outcomes can be obtained for the resources invested in the sector. What is interesting is that all countries face the same challenges in this regard in seeking to answer these questions, and yet all, perforce, are making key financial decisions independently on the same limited evidence base. This suggests that one might be observing the underfunding of the global public good of "evidence-based health care" in a world of rapid technological change in the medical and pharmacological areas. There would be considerable value if there were an agency charged with carrying out such analyses, which could be commonly financed and would benefit all countries.

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