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Innovations in Health Care Financing

*Proceedings of a World Bank Conference,
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*Edited by
George J. Schieber*

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Innovations in Health Care Financing

*Proceedings of a World Bank Conference,
March 10–11, 1997*

*Edited by
George J. Schieber*

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Foreword

Financing health care is a critical concern for rich and poor countries alike, as health care systems account for 9 percent of global production. Developing countries face particularly serious challenges as they attempt to improve the well-being of their populations, achieve economic development objectives, and integrate themselves with the global economy. Health care financing is a particular concern for these countries, which account for 84 percent of the world's population and 93 percent of its disease burden but only 18 percent of its income and 11 percent of its health expenditures. Imbalances between spending and the disease burden will be exacerbated as a result of the changing composition of illness toward non-communicable diseases and injuries, which by 2020 will account for almost 80 percent of these countries' disease burdens, compared with just over 50 percent now. These diseases are more expensive to treat and harder to prevent than the infectious diseases that were previously the leading causes of illness and death.

This volume contains the thirteen papers presented at the World Bank's Conference on Innovations in Health Care Financing, held in Washington, D.C., on March 10–11, 1997. The conference brought together 400 participants from more

than 70 countries to consider the broad range of issues relating to the financing of health care systems in low- and middle-income countries. Both the conceptual and operational policy contexts for introducing changes in health care financing were explored. Traditional public and private financing approaches were addressed together with more recent methods such as medical savings accounts and managed competition. Issues of particular relevance to low-income countries, including user charges and informal rural risk-pooling schemes, were also discussed. Case studies from each developing region were used to highlight the various approaches.

It is hoped that this volume will help countries develop effective health care financing policies, and stimulate further policy dialogue and research on this critically important social and economic issue.

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Abstract

This volume contains thirteen papers prepared for the World Bank Conference on Innovations in Health Care Financing, held in Washington, D.C., on March 10–11, 1997. Together these papers provide conceptual and practical policy prescriptions for financing health care systems in developing countries. Health care financing is a serious concern for these countries: they contain 84 percent of the world's population and 93 percent of its disease burden but account for just 18 percent of its income and 11 percent of global health spending. Moreover, developing countries have the capacity to raise less than 60 percent of the revenues raised by industrial countries. With 5 percent of their gross domestic products devoted to health spending, split almost evenly between public and private sources of spending, raising and managing health sector revenues is a major challenge. The papers in this volume provide an overview of the health care financing issues that are most relevant for developing countries and presents case studies illustrating their experiences with various revenue generation and management techniques.

The overview paper by George Schieber and Akiko Maeda describes demographic, epidemiological, service delivery, and health expenditure patterns for the world's industrial and developing countries, analyzes from both conceptual perspectives and real-world experiences the range of public and private revenue-raising instruments, and provides general perspectives for health financing reforms in each of the world's six developing regions. Bengt Jönsson and Philip Musgrove analyze the issues and experiences with government financing of health services in both industrial and developing countries. These issues are highlighted in Igor Sheiman's case study of recent health insurance reform in the Russian Federation. Deborah J. Chollet and Maureen Lewis discuss private health insurance as a mechanism for financing health services, empha-

sizing underlying characteristics of insurance markets as well as the need for regulation. Nadwa Rafeh presents an example of the evolution of private health insurance in Egypt.

Two revenue-raising methods of particular importance to developing countries are user charges and informal rural risk-pooling arrangements. Paul J. Gertler and Jeffrey S. Hammer analyze user charges and review their effects on revenue raising, equity, and efficiency from conceptual, empirical, and country perspectives. Joseph Wang'ombe summarizes Sub-Saharan Africa's experience with user charges. Andrew Creese and Sara Bennett discuss the conceptual underpinnings of and real-world experiences with informal rural risk-sharing arrangements. Sirilaksana Khoman presents an example of one of these arrangements, the health card used in Thailand.

How revenues are managed has important implications for the efficiency with which such revenues are used. By providing individuals with strong incentives to manage health care funds, managed competition and medical savings accounts are two recent innovations that have important demand-side effects. Alain C. Enthoven describes the basis for managed competition, discusses how managed care is a logical concomitant to managed competition, and analyzes the applicability of these methods to developing countries. André Cezar Medici, Juan Luis Londoño, Oswaldo Coelho, and Helen Saxenian describe the experiences with managed competition and managed care in Latin America and the Caribbean. Len Nichols, Nicholas Prescott, and Kai Hong Phua discuss the conceptual and operational bases for medical savings accounts, describe real-world experiences with these accounts, and analyze the necessary conditions for implementing these accounts in developing countries. Phua also provides an in-depth analysis of Singapore's experience with medical savings accounts.

Acknowledgments

The papers presented in this volume were commissioned for the World Bank Conference on Innovations in Health Care Financing, held in Washington, D.C., on March 10–11, 1997. Special thanks are due to the Bank's conference cosponsors: the Commonwealth Fund, the U.S. Agency for Health Care Policy and Research, the U.S. Agency for International Development's Bureau for Europe and Newly Independent States, the U.S. Health Care Financing Administration, the World Bank's Economic Development Institute, and the World Health Organization.

The conference was initiated by Armeane Choksi, former vice president for Human Resource Development and Operations Policy; David de Ferranti, director and head, Human Development Network; and Richard Feachem, director, Health, Nutrition, and Population. Their support was instrumental in ensuring high-quality, relevant papers. Many Bank staff contributed to the thematic content of

the papers and helped ensure their relevance for developing countries. The efforts of Xavier Coll, Edward Elmendorf, Theresa Ho, Eva Jarawan, Maureen Lewis, Sandy Lieberman, Jo Martins, and Nicholas Prescott are greatly appreciated.

Special thanks are due to the World Bank staff members who were peer reviewers for the papers: Shanta Devarajan, David Dunlop, Charles Griffin, John Langenbrunner, Chris Lovelace, William McGreevey, Alexander Preker, and Jacques van der Gaag. The Alpha Center helped the Bank organize the conference, and their logistic and substantive support in meeting deadlines and ensuring the quality of the papers is greatly appreciated, with special thanks to Amy Bernstein and Deborah Chollet. Jillian Cohen of the World Bank's Human Development Department coordinated the peer review process. Finally, the papers were edited by Paul Holtz and laid out by Glenn McGrath, both with American Writing Corporation.

A Curmudgeon's Guide to Financing Health Care in Developing Countries

George Schieber and Akiko Maeda

Understanding how countries finance their health care systems is of critical importance for industrial and developing countries alike. The methods used to mobilize the resources that support basic public health programs, provide access to basic health services, and configure health service delivery systems affect people's health status—as well as every aspect of a country's social, economic, and political well-being (box 1). Moreover, health care systems account for 9 percent of global production and a significant portion of global employment. Health care systems also affect imports and, in some countries, exports.

Decisions on the methods used to raise revenue for health care systems have important consequences for equity across income groups, the amounts of revenue raised, and the losses in consumer welfare and production generated by different revenue-raising techniques. Thus public and private programs to finance and deliver health care affect government budgets, macroeconomic stability, employment, imports, exports, and international competitiveness.

This paper focuses on how governments raise revenues to finance their health care systems as well as on recent innovations for public and private management of these revenues (including managed competition, medical savings accounts, private insurance, and community risk-pooling schemes). It also discusses the rationales for public and private finance, assesses the criteria that should be used to evaluate different revenue sources, and identifies appro-

priate financing arrangements for developing countries—recognizing their underlying economic and institutional structures.

Conditions in developing countries often preclude use of the financing and management arrangements used in industrial countries. Thus this paper also draws attention to the costs associated with generating public revenues—costs that usually far exceed the revenue that is raised. These costs, along with their distribution across income groups, are often overlooked in discussions of health care financing. Yet inefficiencies and inequities in generating revenues often compound inefficiencies and inequities in allocating expenditures. Such issues are of crucial importance for developing countries, where low income levels limit the scope for raising revenue.

Given its emphasis on financing, this paper focuses on economic and administrative issues. But noneconomic considerations, particularly each country's social, political, and cultural environment, are of critical importance. An attempt is made to capture these elements in the policy and technical discussions below, particularly in the discussions on taxation and on the public-private mix of financing, as well as in the summaries of the health care systems in each region. Still, since these discussions are fairly general, they may underemphasize the importance of noneconomic factors in health policymaking.

Although this paper focuses on sources of financing, such discussions cannot take place without considering the demo-

George Schieber is health sector leader in the Middle East and North Africa Region at the World Bank. Akiko Maeda is health economist at the World Bank. The data presented in this paper are based on a revised version of the World Bank Health Data Base; as such, some of the statistics differ from those in the conference version of this paper. The authors are grateful to Deborah Chollet, Shanta Devarajan, Nicole Klingen, Maureen Lewis, Chris Lovelace, Bill McGreevey, Len Nichols, Alex Preker, Nicholas Prescott, Gail Richardson, and Jacques van der Gaag for helpful comments.

BOX 1

Goals of a health care system

- Improving a population's health status and promoting social well-being
- Ensuring equity and access to care
- Ensuring microeconomic and macroeconomic efficiency in the use of resources
- Enhancing clinical effectiveness
- Improving quality of care and consumer satisfaction
- Assuring the system's long-run financial sustainability

graphic, epidemiological, and service delivery characteristics of different countries. The next section summarizes demographic and epidemiological conditions in developing regions. The third section analyzes regional health spending in terms of income levels, total spending, and public and private shares of that spending. The fourth section discusses the main issues concerning the public-private mix of spending, the rationales for public and private financing, and the advantages and market failures associated with financing health care through insurance mechanisms. The fifth section provides an overview of the different sources for public financing of health care, evaluates these sources in terms of economic efficiency, equity, and administrative feasibility, and discusses which public financing sources are most appropriate for developing coun-

tries given their institutional characteristics. Section six discusses options for private financing, with an emphasis on private health insurance markets and their implications for government regulation. Finally, section seven provides concluding observations on health care reform debates in different parts of the developing world.

Global Overview

Although this paper's focus is on the sources of health care financing, this section summarizes current trends in such financing, including its relation to service delivery outputs and health outcomes by region. A comparison of economic indicators, health outcomes, and health services across regions and income groups is shown in table 1.

In 1994 global spending on health totaled \$2,330 billion, or about 9 percent of global income (figure 1). Of this, high-income countries (per capita income above \$8,500) accounted for just over \$2,000 billion—89 percent of the total health expenditure. The populations of these countries, however, accounted for just 16 percent of the global population (figure 2). The extreme disparity between the amount of resources low- and middle-income countries and high-income countries devote to health care reflects the widely varying capacities of these country groups to provide health services.

TABLE 1

Economic and health indicators by region and income group, circa 1994

Region/income group	Economic indicators		Health outcomes		Health services	
	Per capita GDP (1994 US\$)	Per capita GDP growth, 1996–2005 (percent)	Under-five mortality (percent) ^a	Adult mortality, ages 15–60 (percent) ^a	Physicians per 1,000 people	Hospital beds per 1,000 people
East Asia and the Pacific	1,214	6.8	5.3	17.9	0.3	1.63
Europe and Central Asia	1,792	3.7	3.5	20.3	3.4	7.14
Latin America and the Caribbean	3,138	2.2	4.7	14.8	1.0	1.45
Middle East and North Africa	2,699	0.4	7.2	19.4	0.9	1.51
South Asia	440	3.7	10.6	23.5	0.2	0.53
Sub-Saharan Africa	776	0.9	15.7	39.7	0.1	1.35
Low income	396	—	10.4	—	—	0.87
Middle income	2,707	—	5.3	—	—	2.12
Low and middle income	1,774	3.7	8.8	21.4	0.7	1.05
High income	18,611	2.4	0.9	9.7	2.5	6.29

Note: Regional figures are country-weighted averages. Income groups are based on 1994 GDP per capita: low income is \$725 or less, middle income is \$726–8,500, and high income is \$8,501 or more.

a. Based on current life tables.

Source: World Bank 1996a and 1997; World Bank data.

The gap between rich and poor nations is even more dramatic when the distribution of the global disease burden is considered. Of the estimated 1.4 trillion disability-adjusted life-years (DALYs) lost in 1990, industrial countries accounted for just 7 percent (figure 3). Of these, 81 percent were attributable to noncommunicable diseases. Developing countries, which accounted for 93 percent of the global disease burden, had a rather different disease profile. Except for countries in Europe and Central Asia, which have demographic and epidemiological profiles similar to those in industrial nations, nearly half of the DALYs lost in developing countries were caused by communicable diseases, mainly among children.

Aging populations and the rising incidence of noncommunicable diseases will continue to drive up the cost of patient care. In industrial countries a large portion of health spending is used for a small percentage of patients in the final years of their lives. Most of these patients are suffer-

ing from some form of noncommunicable disease. Over the next three decades developing countries will undergo a major demographic and epidemiological transition, with significant increases in the burden of injuries and noncommunicable diseases (figure 4). These diseases are more expensive to treat and harder to prevent. This transition will reorient demand for health services and increase pressures for new investment in health care.

What are the prospects for narrowing the disparities between rich and poor nations? Some perspective on this question can be gained by comparing the two groups' health service capacities and prospects for economic growth. Industrial countries have three times as many physicians per capita and six times as many inpatient beds per capita as developing countries (see table 1). To close the resource gap, developing countries will have to make sizable investments in health services and increase spending at rates faster than those of high-income countries.

FIGURE 1
Global distribution of health spending, 1994

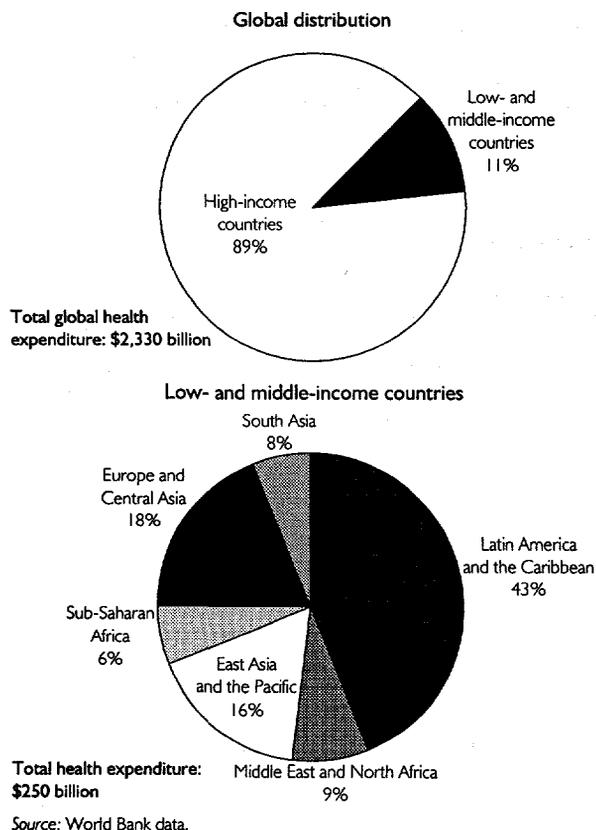


FIGURE 2
Global population and income distribution, 1994

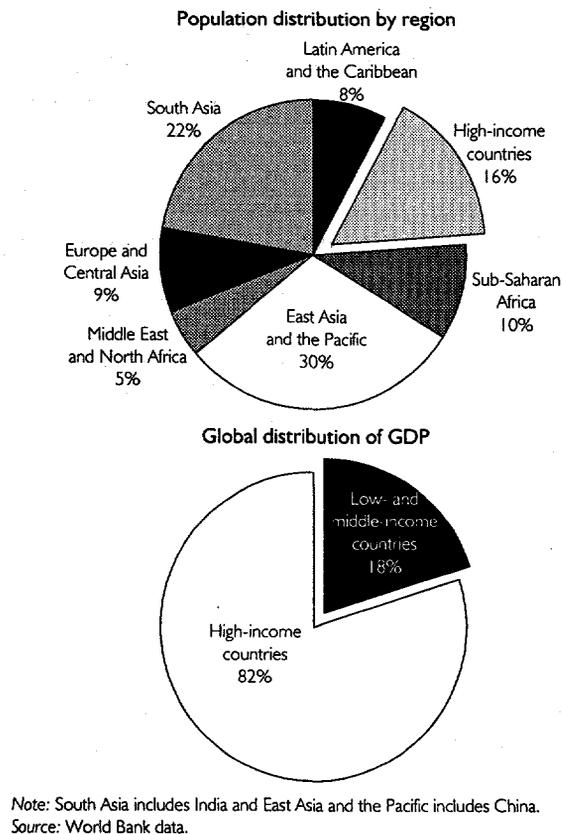
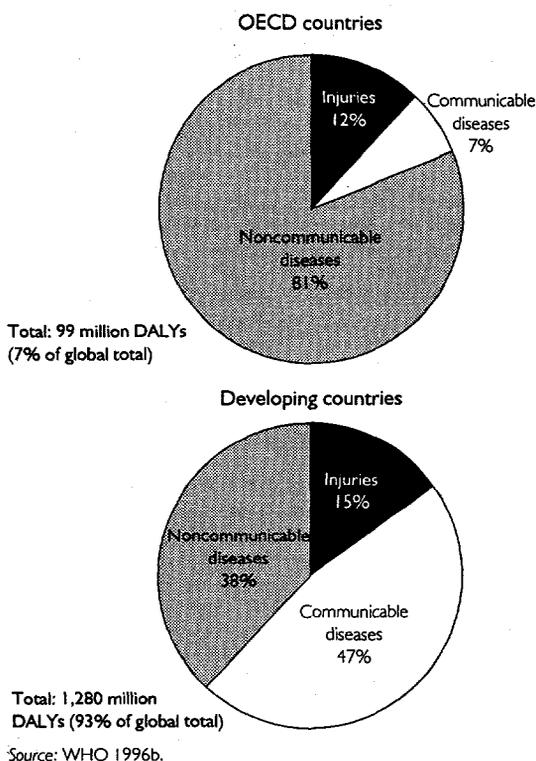


FIGURE 3

Global disease burden, 1990
(disability-adjusted life-years lost)

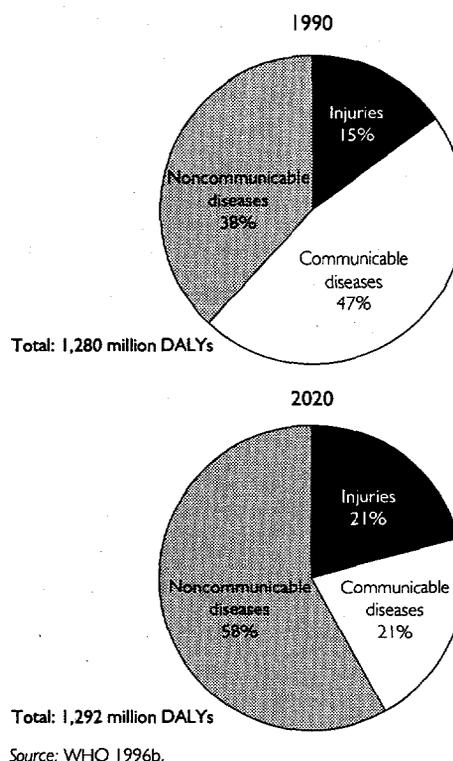


Such an adjustment may be achievable in East Asia, where per capita GDP is projected to grow by 6.8 percent a year over the next decade. But in other regions—especially the Middle East and North Africa and Sub-Saharan Africa—annual economic growth rates will be less than 1 percent (see table 1). These projections have particularly serious consequences for Sub-Saharan Africa, where the base of health infrastructure is already quite weak.

Strengthening health service capacities will require expanding facilities and personnel as well as improving the quality of services. Countries at similar income levels show considerable variation in the performance of their health systems—variation that can be partly ascribed to differences in the equity, efficiency, and quality of health services. For example, the average number of hospital beds and physicians per capita is higher in Europe and Central Asia than in high-income countries (see table 1). Yet overutilization and inappropriate clinical interventions raise questions about how effectively these resources are being used. Recent studies of OECD countries point to the importance of organi-

FIGURE 4

Changing burden of disease pattern in developing countries, 1990 and 2020



zational arrangements in determining the efficiency, quality, and equity of health delivery systems (OECD 1995).

Although there have been many studies of health delivery systems, less information is available on the inefficiencies and inequities associated with different health financing systems. At least one study suggests that systems that rely on social security financing might be more costly to administer than systems that rely on general revenue sources (Poullier 1992). In developing countries the lack of information on access to and distribution of services, utilization rates (inpatient admission rates, physician visits per capita, and so on), and quality measures have limited cross-country comparisons of what a dollar's worth of health expenditure buys in terms of effective health services.

Health Care Financing and Spending Patterns

Policymakers face the perpetual challenge of raising sufficient revenue for the health sector in an equitable and effi-

cient way. Although most countries recognize that health care is a right for all citizens—as embodied in the World Health Organization’s (WHO) goal of “Health for All in the Year 2000”—there are no clear guidelines on how this objective translates into health service delivery, and whether such services are affordable.

What resources can a country with a per capita income of \$400 expect to raise for its health sector, and what kind of services can it provide for its citizens? The World Bank’s *World Development Report 1993: Investing in Health* offered a normative response to that question using the concept of a minimal package of care and services. In principle such a package would cut the number of lost DALYs relative to available resources in countries at different income levels (World Bank 1993). Although this approach provides one set of objective criteria for rationing health care services, decisions about health spending cannot be isolated from a country’s social, political, and economic characteristics. Moreover, factors beyond the control of policymakers often affect spending. Understanding the interaction of these factors is essential to designing health policy.

Policymakers must have some way to evaluate the performance of their country’s health systems against those of other countries or regions at comparable income levels. One approach is to divide the performance of health financing mechanisms into three broad categories (figure 5). The first category is concerned with how efficiently and equitably revenues are raised, and what effect they have on the size and distribution of the resources available to the health sector. The second category involves evaluating how efficiently and equitably resources are used to provide health services. The third category relates to the effects health expenditures have on health outcomes. This last measure is tied to intersectoral factors such as education, water and sanitation, and women’s status, since health services are just one factor among many that determine a population’s health status. This paper focuses on issues related to the first group of measures.

International comparisons of health financing are difficult, partly because of the lack of reliable data. Efforts to compile comprehensive cross-country data on health expenditures date back to Brian Abel-Smith’s work in the 1960s for the World Health Organization (see Abel-Smith 1967). Efforts to update that information for developing countries

occurred only sporadically during the 1970s and 1980s (World Bank 1987). The first sustained and replicable effort to develop such an information base for the twenty-four member countries of the Organization for Economic Cooperation and Development (OECD) began in 1977, and the information is now updated each year (OECD 1977, 1985, and 1993). The experiences of the OECD countries led to the development of a system of national health accounts, which only began to be used in developing countries in the past two or three years.¹ *World Development Report 1993* was the first comprehensive effort to systematically develop expenditure information for all developing countries (World Bank 1993).

Despite these efforts, health expenditure data for developing countries are often incomplete or unavailable, especially for private spending. Definitions of health spending vary by country, and disaggregation of health spending beyond the broad categories of public and private is even more problematic. As a result developing countries lack the basic information and tools needed to assess how health system resources are being raised and used. Without such information it is extremely difficult for policymakers to understand the effects of their policies and to determine which decisions are likely to ensure equity in financing and increase returns on the resources devoted to the health sector.

Moreover, without such information it is difficult to gauge the effectiveness of past investments or to evaluate current investments. Indeed, the importance of these data and the

FIGURE 5

Different ways of measuring performance in health financing

Revenue generation	Health services output	Health status and outcomes
<p><i>Key issues:</i> Efficiency, stability, and sustainability in revenue generation; effectiveness in risk pooling and redistribution.</p> <p><i>Examples of instruments:</i> Burden of taxation, distribution of public subsidies, extent of insurance coverage (formal and informal).</p>	<p><i>Key issues:</i> Efficiency in service output per dollar invested; access; quality; patient satisfaction and patient choice.</p> <p><i>Examples of instruments:</i> Unit cost of effective services by different facilities, payment systems, organizational and management structures.</p>	<p><i>Key issues:</i> Intersectoral determinants of health including medical care, household behavior, women’s status and education, water and sanitation, environment, nutrition, and lifestyle changes.</p> <p><i>Examples of instruments:</i> Mortality and morbidity rate reduction (increase in life expectancy, reduction in infant mortality, life years saved per dollar).</p>

difficulty in compiling them strongly suggest the need for direct, systematic, and regular collection of health system data from all developing countries, possibly by adapting the national health account approach used by OECD countries. Priority should be given to developing an accounting system that is affordable and easy to use in the developing country context. The World Bank and other international organizations could support this effort with financial and technical assistance.

The World Bank has attempted to update global health expenditure data to 1994 using the latest available sources (actual data range from 1990 to 1995). Data have been collected on total, private, and public health expenditures, and limited information has been obtained on sources of financing (social health insurance, donors) and types of services (hospitals, pharmaceuticals). The following discussion is based on preliminary analyses of this database. Although efforts have been made to ensure comparability across countries, the analysis should be interpreted with caution. Data were obtained from various sources (public expenditure reviews, government budgets, household surveys, World Bank reports, sector reports), so definitions and collection methods varied. Moreover, data on private health expenditure are even more prone to measurement errors because of a lack of reliable information on households and private enterprises. Of the 202 economies for which data were

collected, about 37 percent of the private health expenditure data were imputed from a regression model, compared with 17 percent for public health expenditures.

In this paper *public expenditures* on health refer to funds from government budgets, compulsory (that is, publicly mandated) health insurance funds (social security schemes, mutual funds, sickness funds), and external loans and grants.² *Private expenditures* refer to direct household expenditures, including out-of-pocket payments for services, expenditures through private health insurance plans, direct payments for health services by firms and corporations, and charitable contributions.

Regional health expenditure patterns

Average per capita health expenditures range from \$16 in low-income countries to \$1,827 in OECD countries—a hundredfold difference (table 2). OECD countries also spend more on health as a percentage of GDP. Low-income countries spend about 4 percent of GDP on health; OECD countries spend more than 8 percent.

Among regions, South Asia spends the least on health as a percentage of GDP—less than even Sub-Saharan Africa. However, a significant portion of health costs in Sub-Saharan countries are financed by external sources (see below). Other

TABLE 2

Per capita GDP and health expenditures by region and income group, circa 1994

Region/income group	Per capita GDP		Per capita health expenditure		Health expenditure as percentage of GDP	Public health expenditure as a share of total health expenditure (percent)
	PPP\$	US\$	PPP\$	US\$		
East Asia and the Pacific ^a	4,554	1,214	158	38	4.1	52
Europe and Central Asia	3,847	1,792	346	154	7.2	72
Latin American and the Caribbean	5,729	3,138	367	200	6.1	49
Middle East and North Africa	7,181	2,699	353	116	5.2	50
South Asia ^b	1,887	440	65	12	3.7	39
Sub-Saharan Africa	2,070	776	111	38	4.0	54
Low income	1,565	396	71	16	4.3	47
Middle income	5,790	2,707	364	168	5.3	57
High income	20,615	18,611	1,521	1,468	6.9	67
OECD ^c	21,169	22,498	1,777	1,827	8.3	76

Note: Regional figures are country-weighted averages. International dollars (PPP\$) are local currencies converted to U.S. dollars through the use of purchasing power parities ("exchange rates" that adjust for cost differences across countries). Income groups are based on 1994 GDP per capita: low income is \$725 or less, middle income is \$726–8,500, and high income is \$8,501 or more.

a. Includes China.

b. Includes India.

c. Excludes Hungary, Mexico, and Turkey.

Source: World Bank data.

regional differences cannot be explained by differences in per capita income alone. For example, although countries in Europe and Central Asia have the third-highest income level among low- and middle-income countries, they spend more than 7 percent of GDP on health, the highest among this group of countries.

Per capita incomes and the public share of health care costs tend to rise together, indicating an expanding government role in health care financing as countries develop economically (figure 6). In OECD countries the public sector accounts for, on average, more than 75 percent of total health spending. Developing countries show considerable variation in the public share of health spending. This heterogeneity underscores the diversity of approaches to health care financing in developing countries and reflects these countries' historical, political, and economic structures. For example, the large public share of health spending in Europe and Central Asia is a legacy of highly centralized government structures under socialism.

Composition of public expenditures

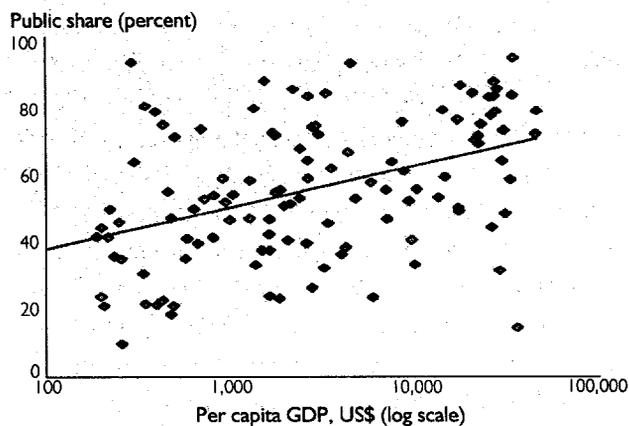
As noted, data on public health spending have been drawn from government budgets, compulsory health insurance funds, and external loans and grants. Finding a consistent definition of compulsory health insurance funds is somewhat problematic; thus the data on this component of health expenditures should be interpreted with caution. Still, some interesting trends emerge.

Public insurance schemes play a limited role in most low-income countries, where public health expenditures usually come directly from government budgets. For example, in the four Sub-Saharan African countries that reported on public health insurance, the schemes accounted for 1–9 percent of total health expenditure. In India they accounted for just over 1 percent. Yet in China the Government Insurance System accounted for nearly 30 percent of health expenditures in 1993.

Social insurance schemes play a larger role in middle-income countries. Again, though, the pattern that emerges is fairly diverse. Some countries continue to rely on government budgets to finance public health systems, while others are moving toward payroll tax-based insurance schemes. In Latin America and the Caribbean and Europe and Central

FIGURE 6

Public share of health expenditures and per capita GDP, various countries, circa 1994



Source: World Bank data.

Asia, for example, social insurance funds finance a significant portion of health expenditures. In 1994 social insurance costs in the fifteen (of thirty-four) Latin American and Caribbean countries that reported such information ranged from 7 to 60 percent of total health expenditures (PAHO 1996). In Europe and Central Asia social insurance funds accounted for 20 to 80 percent of health expenditures. But in the Middle East and North Africa just seven (of nineteen) countries reported having compulsory insurance schemes, which financed between 9 and 37 percent of health expenditures. (Most high-income oil-exporting Gulf countries finance health services directly from government budgets.)

External assistance continues to be an important source of financing for health services in low-income countries, especially in Sub-Saharan Africa and South Asia (excluding India). Since the mid-1980s, however, the share of bilateral official development assistance (ODA) allocated to health has been declining, while ODA from multilateral sources—including the World Bank—has been increasing (Michaud and Murray 1996, p. 230). The tightening of ODA resources makes it hard to predict how ODA to the health sector will evolve over the next decade. For many middle-income countries external assistance may fall, with the emphasis of aid shifting from financial assistance to technical assistance. Yet low-income countries, especially those in Sub-Saharan Africa, will likely continue to depend on external assistance for at least the next decade, and possibly longer (table 3).

Composition of private expenditures

Data on private health spending are even harder to obtain than data on public spending. Most of the data on private spending are estimates drawn from household expenditure surveys. These data usually are not disaggregated into different forms of payment, such as direct fees for service, insurance premiums or other forms of prepayment, and cost-sharing payments. And only a few countries report expenditures from private insurance schemes and direct corporate spending on health services, which often account for a significant portion of health expenditures, especially in low-income countries. These categories should be included in future data collection efforts.

Income elasticities

Income elasticities provide a useful measure of how differences in countries' income levels translate into differences in health expenditures (table 4 and figure 7). The global elasticity is estimated at 1.13. Thus for every 10 percent difference in per capita income there is a 11.3 percent difference in per capita health expenditures—that is, countries with higher incomes tend to devote a larger share of those incomes to health expenditures. The income elasticity for the public component of health expenditures is 1.21; for private spending it is 1.02. This pattern suggests that public health spending is more responsive to income differences than is private health spending, and is consistent with the fact that high-income countries have larger public shares of total health expenditures.

Income elasticities for countries by income level are shown in table 5. Income elasticities for per capita health expenditures relative to per capita GDP are highest for high-income countries (1.47), followed by middle-income (1.19) and low-income (1.00) countries. This pattern is also consistent with the fact that higher-income countries devote a larger share of resources to the health sector.

The Public-Private Financing Mix

Health care systems are financed by many sources, public and private. These funds are managed by public and private entities and spent on both *public health services* (which

provide benefits or externalities that extend beyond the individual) and *personal health services* (which benefit only the individual; see Musgrove 1996). Funds can be raised (or derived) through taxes, mandates, private health insurance, direct private out-of-pocket payments (including user charges for publicly provided services), grant assistance, charitable contributions, and domestic or foreign borrowing. They can be managed by government (ministries of health) or quasi-government agencies (social security organizations, sickness funds), for-profit or nonprofit private entities (private insurers, purchasing cooperatives, employ-

TABLE 3

External assistance for health costs by region, circa 1990

(percent)

Region	External assistance as a share of per capita health expenditure
East Asia and the Pacific (excluding China)	3.7
China	0.5
Latin American and the Caribbean	3.6
Middle East and North Africa	1.5
South Asia (excluding India)	13.1
India	0.7
Sub-Saharan Africa	16.4

Note: Regional data are country-weighted averages. Not enough data were available for Europe and Central Asia to prepare an estimate.
Source: Michaud and Murray 1994; World Bank data.

TABLE 4

Income elasticities for total, public, and private health care spending, circa 1994

Spending category	Income elasticity (η)	Number of observations	Adjusted R ²
Total health expenditure	1.13	122	0.94
Public	1.21	162	0.91
Private	1.02	126	0.85

Note: Dependent variable is per capita health expenditure (US\$).
Source: World Bank data.

TABLE 5

Income elasticities by income group, circa 1994

Income group	Income elasticity (η)	Number of observations	Adjusted R ²
Low income	1.00	31	0.34
Middle income	1.19	57	0.82
High income	1.47	34	0.64

Source: World Bank data.

ers, unions), or consumers (out-of-pocket payments, medical savings accounts).³ Funds are then used to purchase publicly or privately provided health services (figure 8).

The basic issues relating to the appropriateness of public or private sources of finance are predicated on governments' allocational, distributional, stabilization, and economic goals and on the policies that are used to correct for market failures and externalities in the financing, consumption, and provision of health services. Particularly relevant are insurance market failures and instabilities, which may preclude people from obtaining the benefits of collective risk reduction through efficient insurance provision.

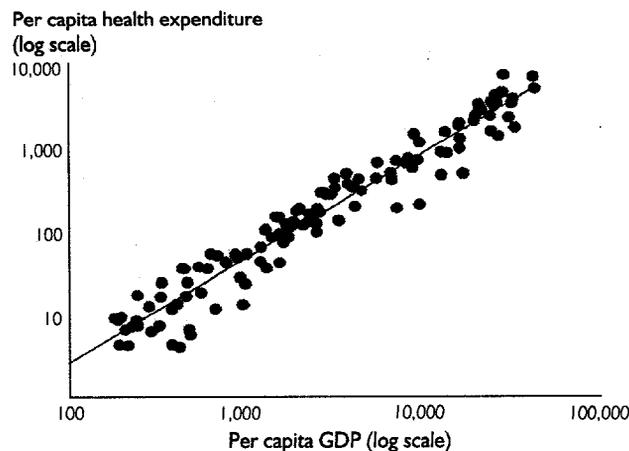
Several other potential market failures affect the health sector (see Hsiao 1995; Musgrove 1996; Jönsson and Musgrove in this volume). One important market failure involves externalities in consumption, whereby the collective benefits from consumption of health services are greater than the individual benefits. Market failure also can provide a rationale for public financing because of the effects ill health has on income redistribution, income levels, and poverty. Other areas of market failure that have implications for public and private financing deal with information gaps and asymmetries, interdependence between supply and demand, and supply-side market failures.⁴

Health services with collective benefits

Certain health services—vector control, clean air and water, sanitation systems, environmental health, medical research, most health promotion and education activities—are purely public goods. That is, no individual can be excluded from the benefit, and consumption by one individual does not reduce the amount available to others. Other goods, known as merit goods, benefit individuals as well as communities. Immunizations and treatments for contagious diseases are examples. Left to their own devices, most people will spend on public and merit goods only up to the point at which their private (marginal) benefit equals the private cost, and society as a whole will underconsume these services.⁵ Thus, in order to ensure an appropriate collective consumption level, such services should be publicly financed (or subsidized). Around the world, most of the health services that are consumed are personal health services, for which benefits accrue largely or exclusively to individuals.

FIGURE 7

Per capita health spending and GDP, various countries, circa 1994



Source: World Bank data.

Although the taxonomy of services described above is used in this analysis, other categorizations of health services are relevant for discussions of risk pooling and private and public responsibilities. In particular, health services can be classified as preventive, curative for unexpected health problems, curative for chronic predictable health problems, and curative for lifestyle-induced health problems. Once these services have been defined, societies can then choose appropriate direct subsidies and cross-subsidies (through risk pooling) to finance the costs and determine individual responsibilities for lifestyle choices—substance abuse, promiscuity, obesity—that adversely affect health (Nichols 1996).

World Development Report 1993 outlines how governments can invest scarce public funds in cost-effective basic public health services. For \$12–22 per capita developing countries will get the best return on public health spending by investing in a basic package of public health and essential clinical services, including immunizations, school-based health services, programs to reduce alcohol and tobacco consumption, family planning services, tuberculosis control, control of sexually transmitted diseases, and care for childhood illnesses such as acute respiratory infections, diarrheal diseases, measles, malaria, and acute malnutrition (World Bank 1993). In many of the poorest countries, however, governments have not mobilized sufficient resources for such a package of care, and in some cases both gov-

ernments and individuals have chosen to spend funds on other, less cost-effective services (World Bank 1994).

Although *World Development Report 1993* does not provide definitive answers on how to maximize the returns to public and private expenditures above this threshold, many developing countries could obtain a better return on their public health investments by providing this basic package of public health and clinical services. Many of these countries have invested significant public resources on state-of-the-art curative services, which are often available only to the ruling elite, the politically connected, or those able to buy such services from the private sector. Although there

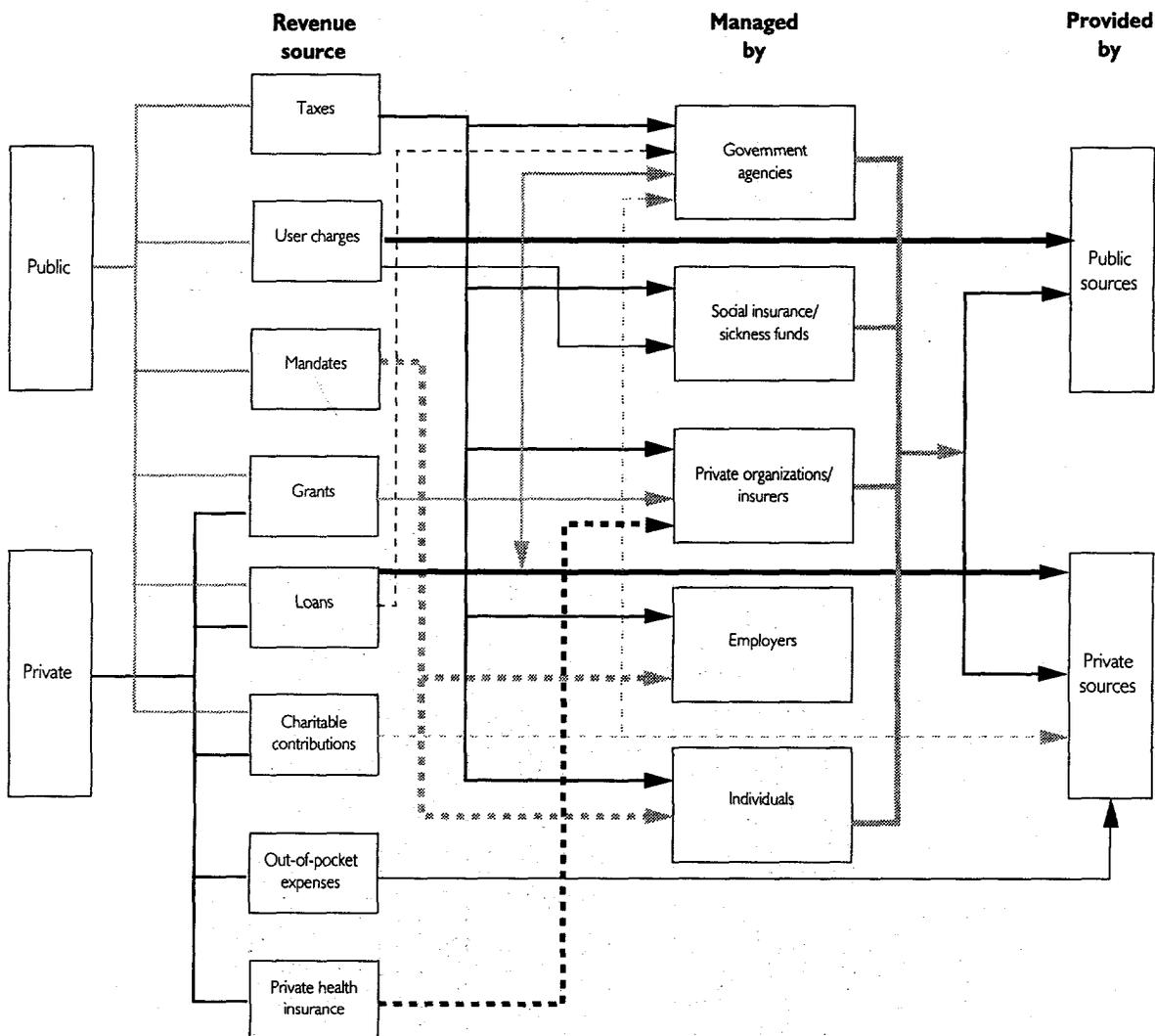
is no universal prescription on the appropriate mix of public and private financing or the appropriate role of the state in financing personal health care services (other than those for the poor and other vulnerable groups, which are justified on equity and income redistribution grounds), there is considerable scope for developing countries to improve their health investments and outcomes.

Redistribution

In most countries the bulk of health expenditures are for personal (individual) health services. Although in principle

FIGURE 8

Sources, management, and provision of health care financing



these services can be financed privately, almost all societies view access to health care as a basic human right. Thus governments often provide access to health services for people who cannot afford them. Moreover, many governments fund health insurance for vulnerable groups or provide personal health care because of the direct link between illness, earning potential, quality of life, and poverty, as well as the random nature of illness.

Yet equity considerations can generate inefficiency and market failure in private insurance markets and impose significant costs on government. Put another way, equity concerns often reflect judgments about tradeoffs between desired redistribution and the distorted incentives that often accompany redistribution (Pauly 1996). If consumers choose not to spend any money on health-related goods and services, knowing that the state will pay for their medical costs on equity grounds, risk pooling through private markets is undermined, and the state may be left funding the bulk of society's health risks—with deleterious fiscal and redistributive implications for both the government and the private sector. Moreover, such actions reduce the potential gains from risk pooling and could result in excessive taxation so that government can finance medical expenses (see below). Thus societies must weigh the welfare costs of individuals being unable to privately purchase "needed" health services against the burdens of publicly financing such needs.

Market failures in health insurance

Insurance is prepayment for services that will be paid for by a (public or private) third party (the insurer) should a pre-defined event occur.⁶ Insurance is a substitute for (or in some cases a complement to) direct out-of-pocket payment for such services. As discussed below, insurance reduces risks by pooling them. Whether public or private, insurance affects the distribution of health care financing among households and can also affect the delivery of health services.⁷

The potential market failures that arise from the instabilities inherent in insurance markets provide another potential rationale for government financing of personal health services (as well as for government regulation of private insurance). Much of this instability occurs because of individual aversion to risk, uncertainty about the random nature

of illness and medical expenses, information asymmetries between insurers and consumers, adverse selection, and moral hazard. To understand how these factors can cause market failure, it is essential to understand the conceptual basis for insurance.⁸

Rationales for insurance. Most people prefer to avoid facing risks that result in substantial economic losses. Thus they are risk averse and, given the opportunity, will avoid, minimize, or shift risks to others. They are willing to pay a relatively small certain price to avoid a relatively large unpredictable loss. The degree of risk faced by an individual (or insurer) depends on the accuracy with which the probability of the adverse event occurring can be predicted. The greater the uncertainty, the higher the risk.

Insurance reduces risks by improving the predictability of the adverse event through the pooling of a large number of similar risks. From a financial perspective, insurance is an arrangement that redistributes the costs of unexpected losses (Dorfman 1982, p. 5). From a legal perspective, insurance is a contract in which the third party agrees to compensate the subscriber for specific costs incurred when a specific loss occurs (Hall 1994, p. 6). Insurance has two components: the expected loss (total loss incurred times the probability of the loss occurring) and the risk premium and load factors (amount the subscriber is willing to pay to avoid the expected loss and, from the insurer's perspective, costs of marketing, profits, and administration).

Insurance lowers risks in the aggregate and makes them more predictable because pooling a large number of similar events increases the predictability of the event.⁹ Thus the larger is the insurance pool for a particular risk, the greater is the likelihood of correctly assessing the probability of the loss occurring. Risks that are unpredictable for the individual become predictable for the group and can be estimated accordingly. Since there are large economies of scale in terms of both administration (load factor) and improved accuracy of loss prediction, a risk becomes easier to insure as the insurance pool for that risk grows. Conversely, risk premiums and load factors increase as the pool shrinks. For example, private health insurance premiums in the United States are much higher for small groups and individuals than they are for large employment groups.

Under certain circumstances the load factors may be so high that insurance markets are not viable.

Successful insurance systems share several characteristics:

- Most individuals are risk averse and prefer to substitute a small outlay (the insurance premium) for a large uncertain loss.¹⁰
- By pooling a large number of similar risks, insurers are able to predict losses accurately and charge a premium appropriate to that risk.
- Individuals pool their potential losses and pay a relatively small premium for the right to collect individual losses from the pool.
- The premium is small relative to the potential loss (Dorfman 1982, pp. 22–23).

Several other supply and demand factors affect the viability of insurance markets. The main factors affecting demand for insurance are the size and predictability of risk. People will insure against large unpredictable losses (Pauly 1986). People will not insure against losses that are certain to occur, since in that case pooling does not provide any advantage. Similarly, while in a perfectly rational world most individuals should not insure against small losses (since they can self-insure against such events and avoid the risk premium), many individuals want to be insured against small predictable losses as well as large ones.¹¹

An important distinction regarding health care financing and the appropriate roles of the public and private sectors follows from these observations. In its purest form insurance is a mechanism that reduces risks by pooling them. Insurance can also be used as a financing mechanism through which public or private entities collect premiums (including administrative costs) to cover highly probable or completely predictable losses. Where losses are completely predictable, insurance provides no collective benefit in the form of risk reduction. Still, there may be equity reasons for a government to cover services in this manner, and individuals may demand that such benefits be included in basic insurance packages. The inclusion of such benefits, however, undermines insurance markets (Hall 1994, p. 25; Chollet and Lewis in this volume).

Problems in insurance markets. Two supply-side aspects of insurance create major problems for insurance markets:

adverse selection and moral hazard. Adverse selection, also known as biased selection, occurs because of an information asymmetry that arises when insurance subscribers have better information about their individual risks than the insurer. As a result there is a higher than average probability of the adverse event occurring, since people are more likely to purchase insurance that is offered at an actuarially fair price for the entire community. Thus higher-risk individuals pay an average premium that is well below what an actuarially appropriate rate for their risk group would be (that is, insureds are not charged a rate for transferring their exposure to loss that fairly reflects the cost of the transfer; see Dorfman 1982, p. 24). Such actions can destabilize voluntary insurance markets, since healthier individuals will eventually drop out as premiums rise, creating yet higher premiums and further healthy dropouts. This phenomenon is referred to as the *premium death spiral*.

There are several ways to deal with adverse selection. Since adverse selection occurs largely in voluntary private insurance markets, one solution is to create a mandatory public insurance system. By requiring everyone to join, the adverse selection problem is eliminated. But so too is a great deal of consumer choice, which results in a welfare loss to society.

Private insurers deal with adverse selection in three ways: by obtaining information about the underlying medical risks of individual subscribers, by not covering some of these underlying risks, and by selling insurance products that preclude selection on the basis of risk. Insurers use a variety of methods to obtain information about the underlying medical risks of individuals so that they can set appropriate premiums or not cover these risks. These methods, sometimes classified under the general rubric of *risk selection* (as well as *risk rating* and *medical underwriting*), include requiring medical examinations, examining previous medical claims, establishing waiting periods, excluding preexisting medical conditions, not guaranteeing renewability of the insurance policy, and refusing to insure the individual.

Marketing insurance to individuals or groups formed for a purpose other than to obtain health insurance also mitigates the risk of adverse selection. Marketing to employee groups has this characteristic because individuals join the group for employment, not health insurance.¹² Employee groups also tend to be healthier and are generally large enough to effectively pool risks.

A second supply-side instability in insurance markets occurs as a result of moral hazard. Moral hazard is the tendency for insurance to increase the probability of the occurrence of the risk being insured against (Arnott and Stiglitz 1988). (In more general terms, moral hazard is the risk that individuals will change their behavior because of the existence of a contract.) Because insurance lowers the cost of service to the consumer at the time of use, individuals tend to consume more health services than they would in the absence of insurance. Similarly, insurance may cause individuals to use less preventive services or take fewer precautions to avoid accidents or deterioration in their health. Moreover, since the costs of excess use are spread over all other purchasers of insurance, individuals have little financial incentive to restrain their use.

Moral hazard occurs for all types of insurance—public or private, voluntary or compulsory. The benefit packages of most insurance programs are designed to deal with moral hazard. Features that mitigate moral hazard in health insurance include cost sharing (deductibles, copayments, coinsurance), physical (for example, maximum of twenty mental health visits) and financial limits on benefits (for example, \$10,000 in coverage for pharmaceuticals), and total expenditure limits on policies (for example, lifetime insurance coverage limited to \$500,000). Frequent renewability is also used to deter moral hazard since premiums can be adjusted to account for the actual and projected experience of the group.

Another innovation to deal with moral hazard is the *utilization management* practiced by managed care organizations (Enthoven in this volume). In their most complete form managed care organizations integrate the functions of managing financing and providing care. As a result, through various forms of utilization management by medical professionals employed directly or under contract to the managed care organization, subscribers have far less discretion to demand services.¹³ Managed care principles can be adopted by both public and private financing entities.

It is not clear whether these insurance market instabilities justify compulsory public financing (or provision of publicly sponsored insurance) for all individuals.¹⁴ Assuming that public health services and redistributive concerns are dealt with separately, the question becomes one of whether regulated private insurance markets can operate efficiently. On economic welfare grounds there is little doubt that efficient mar-

kets that provide informed consumers with a range of choice of insurance policies can maximize social welfare. But risk pooling for individuals and small groups, adverse selection, risk selection, and moral hazard can create economic inefficiency and inequity in insurance markets that justify government intervention in public finance, provision, and organization of insurance, and public regulation of private insurance (Aaron 1991, pp. 11–19; Arnott and Stiglitz 1990). In any event the costs of government intervention must be weighed against these inherent private market inefficiencies.¹⁵

Still, it is clear from the experience of the United States—the one major industrial country to rely on voluntary (tax-subsidized) private insurance—that there are significant problems with risk pooling, access to insurance, and the costs of health insurance and health services. Many of these problems occur as a result of the rating factors used to set premiums as well as the risk selection methods used by insurers to prevent adverse selection.¹⁶ Rating factors include health status, age, sex, industry or occupation group, group size, and geographic location. Rating and risk selection often discriminate against small employer groups and individuals as well as vulnerable populations such as the handicapped and the elderly. They result in significant market segmentation and premium differentiation that undermine effective risk pooling.

Since the purpose of insurance is to pool risks, some analysts argue that the most effective way to do so is through community rating, in which (except for adjustments for family status, geography, and benefits design) everyone in the community pays the same average premium (American Academy of Actuaries 1994).¹⁷ But community rating in voluntary insurance markets increases the likelihood of adverse selection and creates “death spiral” instability, with healthier individuals opting out. The arguments for community rating are that risk pooling is the purpose of insurance, that younger healthier individuals who opt out may end up needing medical care that will ultimately be provided at public expense, and that these same individuals at a later point in their life cycle will end up benefiting from this arrangement. Unlike the United States, most industrial countries have dealt with these problems through public financing and provision of health insurance or health services. Some U.S. reformers (including President Clinton) have argued that public finance and compulsory coverage

for all is the only way to deal with this problem. Opponents of public finance have proposed dealing with it through regulation of private insurance markets, particularly by regulating rating factors and medical underwriting practices and through public subsidies to or taxes on the insurance industry to subsidize the premiums of high-risk groups (Helms, Gauthier, and Campion 1992).

Market failure and direct consumer purchase of health services

Direct consumer purchase of health services—whether basic services, supplementation of insurance benefit packages, or higher-quality services than are offered under an insurance program or by the public sector—are an important source of health care revenues and expenditures in all systems, but especially in low-income countries. It can be argued that insurance, whether publicly or privately financed, is the best vehicle for financing health services, since by pooling risks, overall risks are reduced. But since no society precludes its citizens from buying legal goods and services and since in many low-income countries governments cannot raise sufficient revenues to finance personal health care services for their populations, it is important to consider whether market failures result in inefficient consumption and provision when individuals purchase services directly on an out-of-pocket basis.

Several market failures affect the direct consumer purchase of personal health services. Some of these failures, such as entry barriers and decreasing costs of production (which provide a rationale for public provision or public utility-type regulation), are on the supply side. Others, such as consumers lacking information about what services they need, about what works in medicine, and about the prices and quality of competing medical care providers, are informational. Because of such information gaps, the care provider often acts as the consumer's agent—yet the financial motivations of the provider may not be entirely consonant with maximizing the welfare of the patient. As a result no industrial country relies exclusively on free markets to produce and allocate health care (Aaron 1991, p. 8). Moreover, direct purchase of services cannot contribute to equity objectives (that is, it is a pure benefit approach) and, as noted, private purchase without government subsidies will result in less than optimal consumption of certain health services.

In addition, direct purchase does not result in the gains from risk pooling obtained through insurance.

Implications for the public-private mix

These concerns lead to several prescriptions for public and private financing of health services:

- Public health services should be financed publicly.
- Personal health services that have collective benefits should be publicly subsidized.
- Personal health services that have no collective benefits can be publicly or privately financed.
- Personal health services for vulnerable populations are generally financed publicly on equity grounds.
- Insurance reduces overall risks by pooling them and is thus a preferred method for financing health services.
- Insurance for personal health services can be publicly or privately financed.
- Instabilities in insurance markets necessitate government regulation and under certain circumstances public financing.
- Market failures create inefficiencies relating to individual out-of-pocket purchase of health services.
- In some cases government regulation and provision of information may be a viable alternative to public financing of personal health services.

Public Financing Sources

As noted, health care systems can be financed by a variety of public and private sources, and these funds can be spent on many types of public and personal health services. Certain public health services (such as immunizations) are quasi-public goods and should be publicly financed or subsidized. Public financing of personal health services is justified on redistributive and equity grounds.

Two other potential rationales for public financing of personal health services for the nonpoor as well as the poor, either directly or through publicly financed health insurance systems, result from market failures in private health insurance markets that preclude effective risk pooling and in the consumption and provision of personal health services. Public "insurance" systems can be of two general types: national health service approaches (Beveridge model) and

TABLE 6

Government revenues by region and income group
(percentage of GDP)

Region/income group	Mean	Median	Standard deviation	Range		Number of observations
				Minimum	Maximum	
East Asia and the Pacific	23	20	9	8	37	11
Europe and Central Asia	39	41	12	12	60	13
Latin America and the Caribbean	24	25	8	8	42	21
Middle East and North Africa	32	31	10	12	48	10
South Asia	27	20	15	10	47	6
Sub-Saharan Africa	26	22	15	11	63	20
Developing countries	28	26	12	8	63	76
Industrial countries	45	44	8	31	62	21
Low income	20	19	9	8	44	22
Middle income	31	30	12	8	63	54
High income	42	44	11	12	62	24

Note: Data are for the latest available year between 1990 and 1995. Includes central, state, and local government revenues. Also includes tax and nontax revenues, as well as grant assistance.
Source: IMF, *Government Finance Statistics*, various issues.

social insurance funds (Bismarck model; see OECD 1992). In both models collective risk pooling is achieved through compulsory taxation.

There are, however, two general distinctions. First, national health services tend to be financed from a mix of general taxes and other public revenue sources, while social insurance funds tend to be financed with earmarked payroll taxes.¹⁸ Second, because national health services are financed from the general budget, they are subject to annual budget processes. Social insurance funds tend to be more independent of such annual political machinations. There is no one "right" approach for developing countries to use on this issue, and various mixes of public and private financing are possible (see Jönsson and Musgrove in this volume).

Although much of the discussion of health financing focuses on the benefits of health expenditures and on what services should be purchased, cost and equity issues are also involved in raising revenues to finance public expenditures. These costs make it of critical importance for governments to evaluate the benefits of public expenditures against the costs (both economic and equity) of raising these revenues. As stated in World Bank (1991), "incremental changes in the level of taxation should reflect, among other things, the benefits derived from incremental changes in the public expenditure program and the relative costs of financing it by means of taxation or non-tax revenues" (p. 18). Thus policymakers must consider both the sources and uses of funds as they consider health care financing reforms.

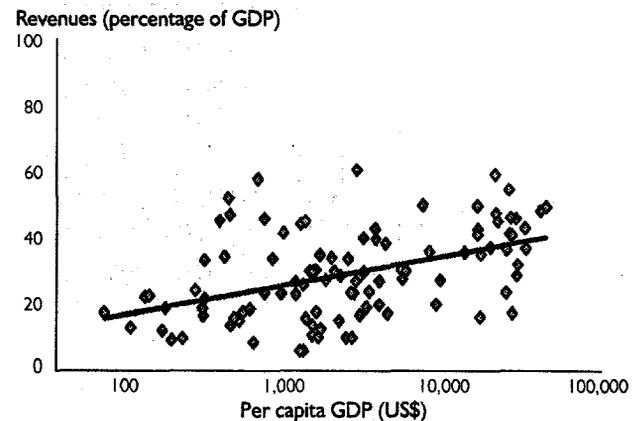
Government revenues

Total government revenues (central, regional, and local) as a percentage of GDP vary significantly by region and by income level (table 6). The relationship between per capita income and governments' ability to raise revenue is shown in figure 9. Several patterns are apparent:

- Revenue-raising capacity increases with income.
- Relative to their GDPs, low-income countries and regions can raise less than half the revenues that high-income countries can raise.

FIGURE 9

Government revenues and per capita GDP, various countries, circa 1994



Note: Includes state and local government revenues.
Source: IMF *Government Finance Statistics*.

- As a group developing countries raise less than two-thirds of the revenues raised in industrial countries.

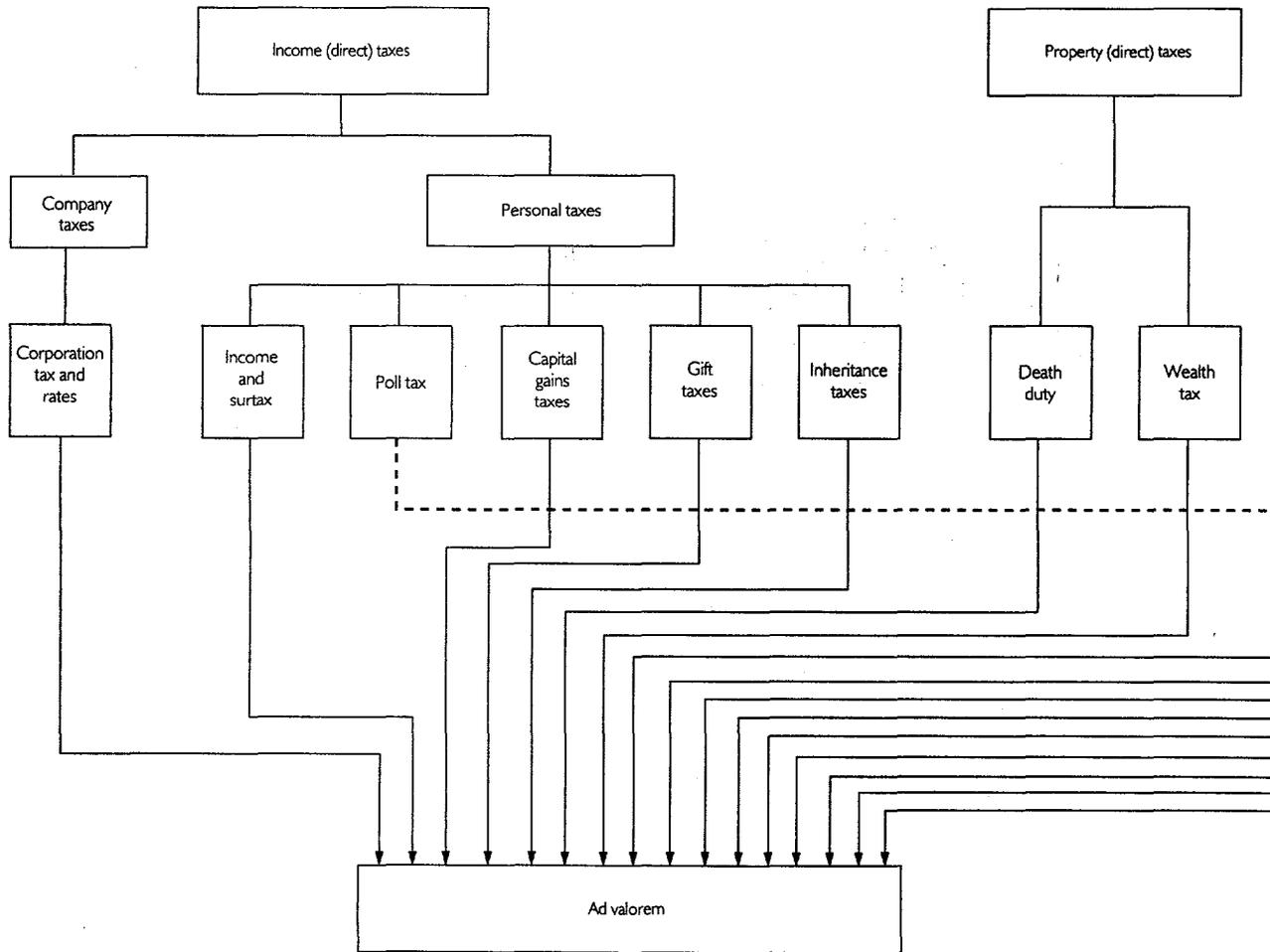
Regional variations also suggest several interesting patterns. First, the high ratio of revenue to GDP in the Middle East and North Africa likely reflects oil and gas revenues. Second, high revenue generation in Europe and Central Asia likely reflects the legacy of and continued reliance on the centralized revenue-raising systems created under socialism, in which taxes are established by the national government and each region receives a percentage of that base, and in which high payroll taxes are used to finance social programs. Third, the results for East Asia and the Pacific and Latin America and the Caribbean are somewhat anomalous,

since both regions have significantly higher per capita incomes than Sub-Saharan Africa and South Asia, yet their ratios of revenue to GDP are similar. This similarity may reflect the disparate mix of low- and middle-income countries in both regions, incomplete revenue data for some countries,¹⁹ ineffective tax administration, or societal preferences for individual rather than government responsibility.

Still, the basic conclusion on developing countries' revenue-raising capability is clear: it is significantly less than in industrial countries, and the poorer is the country, the less is the capacity. This limited capacity has important implications for developing countries' ability to finance health and other public services. The different sources of public

FIGURE 10

Taxation classification



Source: Allan 1971.

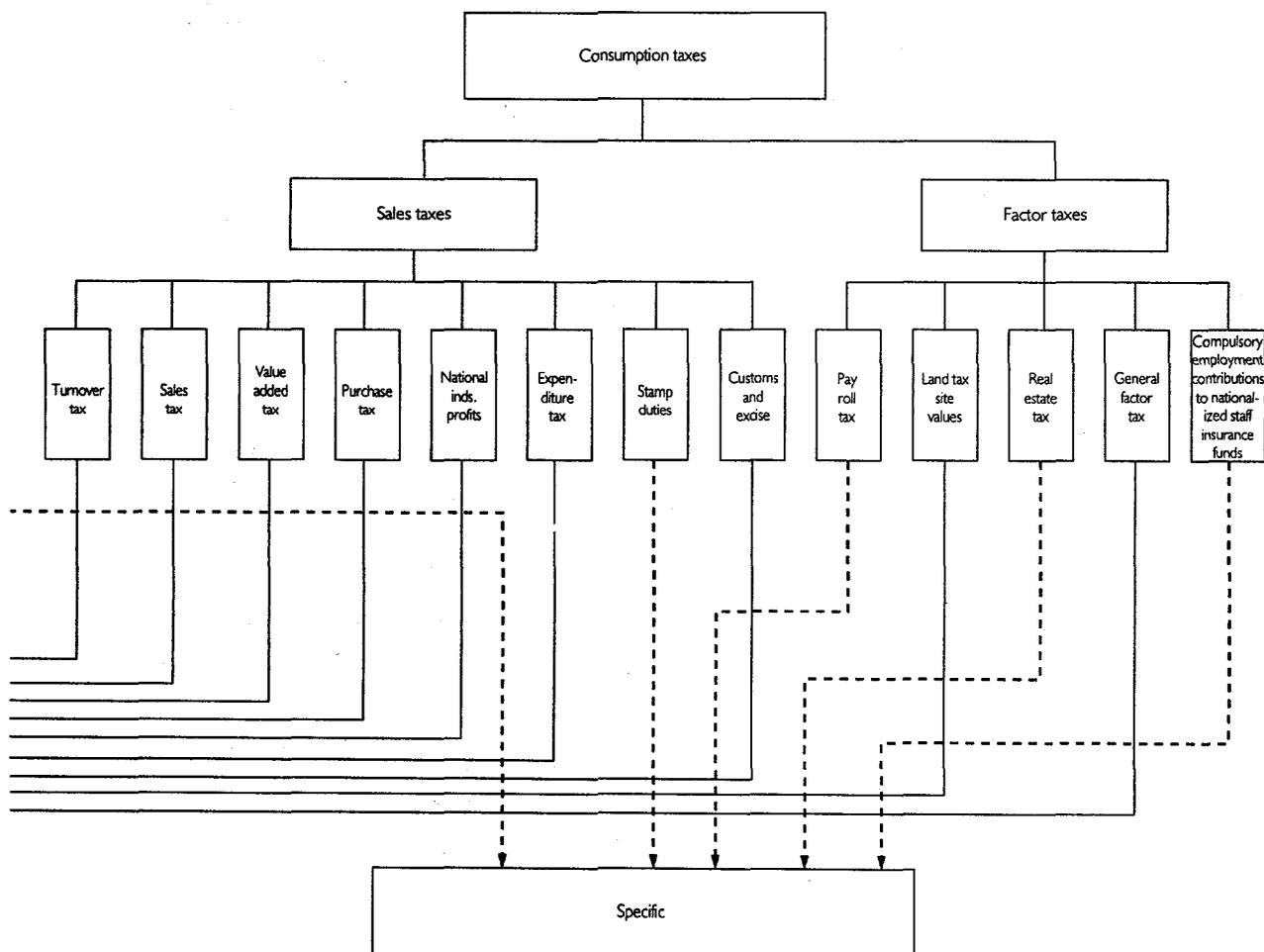
revenues, the criteria by which they should be evaluated, the institutional realities of developing countries that circumscribe the use of various revenue-raising modalities, and the policy implications for financing health systems in developing countries are discussed below.

Sources of public revenues

The sources of health care financing in developing countries have not received much in-depth treatment in the literature. This is unfortunate because the cost, equity, and administrative implications of raising revenues in developing countries are different than in industrial countries. Thus

the financing models for industrial countries may be less relevant to developing countries. The recent literature on taxation theory and public finance in developing countries provides important insights into this issue.

Governments have many options for raising (or mobilizing through compulsion) revenues: direct and indirect taxes, user charges, mandates, grant assistance, and borrowing.²⁰ *Direct taxes* are taxes on individuals, households, and firms and include personal income taxes, corporate profits taxes, payroll taxes, social security taxes, property taxes, and wealth taxes (figure 10). *Indirect taxes* are taxes on transactions and commodities and include general sales taxes, value added taxes, excise taxes, turnover taxes, import



duties, and export taxes. Expenditures can also be financed through *user charges* and taxes on state-owned enterprises. Another way to provide services through public intervention is with *employer* and *individual mandates*. Charitable contributions (discussed below under private financing) can also augment government revenues. *Grant assistance* in the form of grants to governments (or nongovernment entities) is another potential source of health revenues. *Borrowing* from domestic or foreign sources can also be used to finance public health spending. In evaluating the alternative methods used to finance health care systems in developing countries, the economic, equity, political, and administrative effects of these methods must be assessed.

All countries use a combination of these methods to finance their health systems. As discussed below, there are significant differences between the methods used in industrial and developing countries. Some OECD countries (Canada, Sweden, the United Kingdom) finance their health systems through general revenues. Others (France, Germany) rely on social security (payroll) taxes. Payroll taxes are also used in many transition economies and in Latin America. Other countries use multiple methods of financing. The U.S. Medicare program, a national public program for the elderly and the disabled, is financed with social security taxes, general revenues, and premium payments from enrollees. User charges are a common feature of most publicly financed programs, especially for goods (like pharmaceuticals) and services where most countries require consumers to share the costs of covered services (OECD 1992 and 1994). President Clinton's proposed reform of the U.S. health care system was based on a mandate for all employers to finance coverage for their employees (Zelman 1994). A variant of this approach proposed in previous unsuccessful U.S. reform efforts is the "play or pay" approach, in which employers would either provide employees with health insurance at a level determined by the government or pay an additional tax that would be used to finance coverage for employees (Moffet 1993, p. 2).

Taxation

Taxation is the main source of revenue in nearly every country. In assessing the equity effects of different taxes, a distinction must be made between the impact or statutory

incidence of a tax (that is, the entity legally responsible for the tax) and the economic incidence of the tax (that is, the change in the distribution of private real income resulting from the tax or the entity who ultimately bears the burden of the tax). Impact and economic incidence differ through a process known as *tax shifting*. Economic incidence is the more appropriate measure for assessing the overall effects of alternative taxes (Rosen 1995, pp. 273–77).

The basic criteria for evaluating alternative financing modalities are:

- Economic efficiency: the tax system should not interfere with the efficient allocation of resources.
- Equity (fairness): the tax system ought to be fair in its treatment of different individuals.
- Administrative simplicity: the tax system ought to be easy and inexpensive to administer.²¹

Tax policy often involves tradeoffs among these criteria.²² Each is discussed in turn.

Economic efficiency. Whenever the government uses taxation to extract resources from the private sector, there is an economic cost that in most cases exceeds the amount of resources extracted. This additional cost is referred to as the excess burden, efficiency cost, or deadweight loss of taxation. In other words, excess burden results from the production and consumption inefficiencies associated with taxes that distort the decisions made by firms and households. This excess burden occurs because virtually all taxes create distortions (substitution effects) in economic decisionmaking that reduce incomes and production by more than the amount of revenue transferred to the government. Taxes generally distort the decisions firms make about production, trade, and investment, and the decisions households make about consumption and savings, both currently and over time. For example, one study of the U.S. tax system found that a 1 percent increase in all tax rates would generate efficiency costs of 17–56 percent over the amount of revenue raised. A study of Sweden's tax system found efficiency costs to be 70–130 percent of the amounts of revenue raised (World Bank 1991, p. 3; Jönsson and Musgrove in this volume).

Only taxes that do not change behavior do not result in an excess burden. Such taxes are generally limited to lump-sum and poll taxes (that is, a flat tax on each individual),

which are hard to administer in developing countries and perform poorly on equity grounds. Taxes on entities or transactions in which price responsiveness (that is, elasticity) is limited or nonexistent (that is, the quantities demanded or supplied are not affected by the change in price resulting from the tax) also have lower excess burdens. A tax's excess burden is also related exponentially to the tax rate—the higher is the tax rate, the higher is the excess burden.²³ Thus taxes with low rates on entities or commodities with little price responsiveness have lower excess burdens or efficiency costs to the economy than taxes with high rates on entities or commodities with considerable price responsiveness. Excess burdens are minimized when the ratio of the tax rates is equal to the ratio of the relative price responsiveness of the commodities.²⁴

Equity. A second criterion for evaluating taxes is the system's fairness or equity. This aspect of revenue raising receives significant attention in the literature on health care financing (van Doorslaer and Wagstaff 1995; van Doorslaer, Wagstaff, and Rutten 1993; WHO 1996a). Equity has two dimension: *horizontal equity* and *vertical equity*. Horizontal equity means treating taxpayers with the same amount of income equally, irrespective of the source of the income. Vertical equity means treating taxpayers with different incomes differently or, more specifically, distributing the tax burden among taxpayers on the basis of ability to pay. Defining income and ability to pay is not straightforward. Although horizontal equity is often consistent with efficient taxes that are simple to administer, such taxes often violate vertical equity considerations (see below).

Using the tax system to redistribute income from the rich to the poor is difficult because a sizable portion of rich people's incomes comes from capital that is internationally mobile, because much of their income is entrepreneurial and thus is hard to measure and tax, and because the rich are politically powerful (Newbery and Stern 1987, p. 187). More generally, there has been increasing acceptance of the notion that in developing countries the tax system is an extremely poor instrument for redistributing income. Income redistribution can be better achieved by using the revenues from efficient taxes to provide subsidies to the poor (World Bank forthcoming). Nevertheless, the economic incidence of taxes on the distribution of income is one of the most

important criterion for evaluating various revenue-raising measures.

Administrative simplicity. Running a tax system imposes significant costs on both government authorities and tax-paying units. But perhaps more important are the significant equity, efficiency, and revenue implications of an inefficiently administered system. Administrative and compliance costs depend on the types of personnel and equipment needed, the types of records kept and information needed, the complexity of the tax system (for example, special provisions and exemptions), and rate differentiation across individuals and categories of income. An inefficiently administered tax system can generate high administrative costs, cause losses of tax revenues (through tax avoidance and evasion), increase excess burdens of taxation, and foster inequity. It is becoming increasingly recognized that successful changes in tax policy require an effective tax administration.

In developing countries, where institutional capacity is often weak and tax system design overly complex, tax administration and tax reform are closely related. Simplicity has been advocated as the fundamental principal for effective taxation. This suggests:

- Eliminating unproductive taxes.
- Keeping differential tax rates and provisions to a minimum.
- Drafting clearly and communicating effectively the provisions of tax laws (Khalilzadeh-Shirazi and Shah 1991, p. xx).

These requirements for administrative efficiency have important implications for economic efficiency and equity. In fact, in designing optimal tax systems, all three criteria must be considered and explicit tradeoffs made.

The literature defines an optimal tax structure as one that maximizes a country's social welfare by making the explicit tradeoffs between equity and efficiency that best reflect the country's attitudes toward achieving these goals.²⁵ As such there are no universal guidelines for designing an optimal tax system; rather, countries must make explicit choices among competing efficiency and equity objectives. In principle, if all individuals were identical, nondistorting lump-sum taxes could be imposed, horizontal and vertical equity would be preserved, and excess burdens would be

avoided. But since individuals are not identical (and indeed, information on their differences can be only imperfectly obtained by tax authorities), lump-sum taxes result in further income inequality. Since such taxes are undesirable on equity grounds (and possibly on administrative grounds), governments must use distorting taxes. Thus tax systems reflect the different attitudes that countries have about equity and efficiency objectives as well as their basic political structures and administrative capabilities (Stiglitz 1988, pp. 479–80; Newbery and Stern 1987, p. 167).

Institutional structure of taxation in developing countries. A country's ability to raise revenues, or its tax capacity, depends on its per capita income level, the distribution of income, the availability of "tax handles," and the openness

of the economy (Musgrave 1987, p. 244). Industrial countries have far more flexibility in designing optimal tax systems because, relative to developing countries, they have higher income levels, more equal income distributions, more "tax handles," less open economies, and more efficient tax administrations. In fact, the institutional features that characterize developing countries severely limit their ability to implement the full range of instruments that could be used to execute optimal tax policies (box 2). As countries' incomes rise, these impediments to effective taxation disappear.

Taxation practices in industrial and developing countries. As noted, industrial countries raise almost twice as much revenue relative to GDP as developing countries. Tax capacity grows with income, and urbanization facilitates tax collection and increases demand for public services. In attempting to deal with the efficiency and equity tradeoffs inherent in optimal tax theory, industrial countries rely on income taxes, both personal (one of the best instruments for redistribution) and corporate, as their principal sources of revenue, followed by indirect taxes. Developing countries rely on trade (especially import) taxes, indirect taxes, and to a lesser extent corporate income taxes. Developing countries are far less reliant on personal income taxes because these are not an easily accessible "tax handle" for the reasons stated above. In fact, in many developing countries personal income taxes are essentially wage taxes on government employees and employees of large corporations. In many cases these corporations are foreign owned and engaged in the exportation of mineral resources. As such they generate large profits and are convenient and visible entities to tax. Personal income taxes become more important as countries' incomes grow, while corporate income taxes follow a bell-shaped curve, initially rising in importance and then falling.

Domestic taxes on goods and services (such as excise and sales taxes) are an important source of revenue in all countries. In developing countries such taxes are the most important source of revenue after trade taxes, with excise taxes playing a larger role than general sales taxes (which are often imposed with multiple rates and strongly resemble excise taxes). Excise taxes on alcohol, cigarettes, and petroleum products are particularly important, accounting for almost three-quarters of excise tax revenues. There is

BOX 2

Institutional features of developing countries that affect their tax capacity

- Much of the population is widely dispersed in rural areas.
- Most of the population is self-employed in subsistence small-scale agriculture, where much of the income is in kind, transactions are hard to trace, and high rates of illiteracy and poor accounting and record-keeping limit the use of personal income or profits taxes.
- In urban areas there is a large informal sector of small and transient firms, and even individuals employed in the formal manufacturing sector work in small firms.
- Large firms tend to be government enterprises or extractive industries that are often owned by foreigners.
- Agricultural products and mineral resources face unstable and unpredictable world prices.
- The dualism of a modern urban sector and a traditional rural sector, and the market segmentation it creates, distorts commodity and labor markets, increasing tax burdens.
- High levels of income inequality tend to result in higher tax rates, greater tax avoidance, and higher efficiency losses.
- Trade distortions—import tariffs, quotas, export taxes, differential exchange rates, foreign exchange rationing—abound, resulting in resource misallocations and inequity.
- The influence of state-owned enterprises, coupled with nonoptimal user charge structures, often results in inefficient public investment decisions.
- Tax administration capacity is limited.

Source: World Bank 1991 and forthcoming; Newbery and Stern 1987; Khalilzadeh-Shirazi and Shah 1991.

no relationship between these taxes and growth in a country's income.

Trade taxes, especially import duties, are the most important source of revenue in developing countries. Import duties fall sharply as countries' incomes increase (as do export duties, which are far less important).

Social security taxes are a minor source of revenues in developing countries compared with industrial countries, where they are several times as important. Moreover, social security taxes become increasingly important as incomes grow. The basic institutional weaknesses of developing countries described above preclude widespread use of social security taxes. Sociopolitical factors often lead to their use, however, as evidenced by the importance of these taxes in Latin America and the Caribbean and Europe and Central Asia. Both industrial and developing countries often earmark such taxes to support health insurance systems.

Wealth and property taxes account for a small percentage of tax revenues in industrial and developing countries, although they increase in importance as income increases (Tanzi 1987, pp. 205–36; World Bank 1991, p. 16).

Implications for tax revenue in developing countries. In pursuing optimal tax policies, industrial countries tend to balance equity and efficiency considerations by using broadly based progressive income taxes and (more or less) proportional payroll, corporate profits, and general consumption (sales, value added) taxes with little tax rate differentiation and relatively low tax rates. Inequality in the distribution of income is often handled with cash transfers and subsidized services for the poor. Because the supply of labor is relatively inelastic, the bases for different commodity taxes are broad, and tax rates are relatively low (with little rate differentiation), these types of taxes generally do not result in the large excess burdens found in the tax systems of developing countries—where reliance on trade taxes, commodity taxes, and corporate income taxes with widely differentiated and high tax rates, market segmentation, and limited administrative capacity result in significant excess burdens and inequity.

Given the institutional weaknesses (and social welfare functions) in developing countries, which revenue-raising mechanisms best approximate optimal tax policies?

- Commodity taxes are an important source of revenue,

and equity and efficiency concerns can be addressed by broadening the tax base, keeping tax rates low, limiting tax rate differentiation, and not discriminating by the source of production (foreign or domestic). The best instrument for this is a single-rate value added tax (VAT) that exempts items that are a significant component of expenditures by the poor.

- Equity would also be fostered by introducing luxury and excise taxes with just three or four rates on income-elastic goods that are not distinguished by source of production (foreign or domestic).
- Given that the supply of land is inelastic and owners tend to be wealthy, land taxes would score high on both efficiency and equity grounds. Such taxes generally are not politically feasible, however.
- Corporate income taxes, especially on mineral extraction, are an important and accessible “tax handle” and may score high on equity and efficiency grounds, especially if the country is a major supplier of these resources. But for corporate income taxes more generally, tax rates that exceed international standards would likely lead to capital flight, retarding economic growth. Since capital is more mobile internationally than labor, capital should be taxed less heavily than labor. Corporate income taxes with a single statutory rate should be considered.
- Personal income taxes would likely fall only on government employees and employees of large firms, discouraging saving and limiting their potential for raising revenue. Moreover, given low formal employment, taxes on labor (such as social security taxes) are unlikely to raise substantial revenue and may generate excess burdens (depending on the supply elasticity of labor and whether such taxes encourage inappropriate capital substitution). Such distortions in production could retard economic growth. But since personal income taxes score high on equity grounds, consideration should be given to a single-rate personal income tax combined with a generous personal exemption in lieu of the more common systems of sharply progressive rates and a variety of deductions and credits.
- Import taxes result in larger excess burdens than general consumption taxes. However, they are easy to collect at the point of entry and to the extent that imports are highly income-elastic (that is, responsive) luxury

goods, such taxes may have favorable equity impacts. Yet if imports have a high capital content, import taxes may generate significant economic distortions. Countries must carefully weigh these tradeoffs as well as the potential long-run economic development effects of these taxes (World Bank 1991, pp. 57–58; Newbery and Stern 1987; Thirsk forthcoming).

Tax subsidies for purchase of health insurance and medical services. Another tax-based mechanism that warrants further discussion, given its widespread use in many countries, is tax subsidization for the purchase of private insurance and medical expenses. These subsidies are generally in the form of deductions or credits against personal or corporate income taxes and, in the case of employer-provided health insurance, are provided by not counting the employer's contribution to health insurance premiums (or medical services) as income to the employee.

Subsidizing employers to purchase health insurance (or to self-insure by paying for or directly providing services) has several advantages. First, when private firms provide the insurance or service, the expenditures are not a government budget expense. Second, as discussed above, employer groups are a logical "community" to insure because (for large employers) they provide a large enough group to effectively pool risks, employers can be more informed purchasers than individuals, and adverse selection tends to be mitigated by the fact that employees join the group for employment purposes. Moreover, if employers also cover the employee's dependents (as in the more advanced developing countries), large segments of the population will have privately provided health insurance.

Developing countries also must consider issues of tax administration and industrial structure. If the bulk of the population works in subsistence agriculture and the formal urban manufacturing sector is composed of many small transient firms, a significant portion of the population is unlikely to be covered by employer-based insurance. Moreover, if much of the modern urban sector is working at or near the minimum wage, requiring employers to provide health coverage will increase unemployment. Although tax subsidies through the corporate income tax are generally easy to administer, there is a strong possibility of fraud in countries with weak tax administration. The supply of insurance also may be a problem, espe-

cially in the absence of developed financial markets and government regulation. Similarly, firms may not have the expertise to self-insure or to purchase insurance. Nevertheless, as the formal sector, financial markets, and administrative capacity develop, using tax subsidies to encourage employer-based insurance may be an effective way to encourage provision of insurance that is largely privately financed.

There are, however, significant drawbacks to using tax subsidies in this manner. First, there is a potentially large revenue loss to the government. Second, depending on how the tax subsidy is structured, it may be an open-ended loss of revenues based solely on the decisions of private employers. Third, the benefit incidence may be highly regressive (with high-wage firms and individuals getting the most benefit). Fourth, such subsidies mute the cost consciousness of employers (in terms of the comprehensiveness of the insurance that they purchase) and employees (since they are paying less than the full cost of the services used, by the amount of the subsidy). In other words, such subsidies will increase health care costs and may encourage coverage of health services of marginal benefit. Fifth, employer-financed insurance will result in lower cash wages (see CBO 1994; Hall 1994; Hoff 1996; Arnett 1996).

In summary, developing countries need to replace narrow, distorting tax bases that have high and widely differentiated rates and numerous loopholes with broader tax bases that generate higher revenues at lower rates and do not discriminate against the various sources and uses of income. Doing so would result in the simultaneous achievement of efficiency, administrative simplicity, and horizontal equity (Thirsk forthcoming). Moreover, effective tax reforms can only take place if they are accompanied by reforms in tax administration.

Countries also need to consider using sources of public revenue other than taxes to finance their health systems, including user charges, employer and individual mandates, grant assistance, and borrowing. These financing sources can be evaluated using the same criteria—economic efficiency, equity, and administrative simplicity—described above.

User charges

In a traditional public finance context, individuals pay user charges (based on the principle of cost recovery) for a pub-

licly provided good or service. Such charges should be used whenever a publicly produced good or service has benefits that can be assigned to an individual. Taxes are more appropriate to finance public goods with collective (rather than individual) benefits, to compensate for market failures, and to achieve distributional objectives (World Bank 1988).

User charges should be evaluated using the same criteria used to evaluate taxes (economic efficiency, equity, and administrative simplicity). Although user charges for publicly provided services are a source of government revenue, from a national health accounts perspective they are technically private expenditures for publicly provided services. In this context they are no different from direct private out-of-pocket payments for nongovernment services, discussed below. But since they have implications for public financing and government policy, user charges for publicly provided services are analyzed in this section.

User charges embody the benefit approach of taxation—that individuals who benefit from a service should pay for it. User charges can be used when public services have largely private benefits (most personal health services fulfill this criteria, although basic public health services do not). User charges differ in one important aspect from taxes: if set appropriately (that is, so that the private marginal benefit equals the marginal cost of providing the service), user charges can generate revenues without any efficiency loss (World Bank 1991, p. 20). Yet user charges set in this way would not be particularly equitable, since the poor and non-poor would pay the same rate for services. This outcome can be offset by exempting the poor or by basing user charges on ability to pay. As in the case of optimal taxes, however, this will result in some efficiency loss.

In practice, user charges are often set below marginal costs, resulting in excess consumption, overproduction, and inefficiency. As a result some analysts have argued that user charges should be set at levels above the marginal cost of producing the service for income-elastic goods (that is, services for which consumption increases disproportionately relative to increases in income), and that the profits be used to subsidize services for the poor (Ray 1975). As in the previous case, there is a tradeoff between excess burden and equity.

User charges are an important source of revenue in cases where it is politically unfeasible to reduce spending or

increase taxes. Household surveys in a number of countries indicate that people are willing to pay for services that they deem of benefit to them, making user charges a less coercive way than taxation to raise revenues to finance public services. Moreover, efficiency, equity, and social welfare can be improved if the additional revenues generated are used to provide public services with the highest social return.

User charges for publicly financed or provided goods and services can take a variety of forms. If the service is publicly provided health insurance, individuals may be required to pay premiums or share costs (for example, through deductibles, coinsurance, and copayments). While the health insurance is provided publicly, the health services could be provided through a public or private institution. Under the more traditional concept of user charges, individuals are required to pay a fee for publicly provided services in a public facility. The different types of user charges relating to public health insurance (for example, premiums) add some complexity to the traditional analysis of user charges. Still, the basic arguments and analysis are the same as they are for less complex publicly provided services.

The premiums and cost sharing paid for a publicly financed insurance package are sources of public revenue, but they also influence the allocation (use) of resources. Premiums have the virtue of spreading costs (in a true insurance sense of spreading risks) over the entire population covered by the program. Cost sharing essentially taxes individuals at the point of service use, affects far fewer individuals, and may be viewed as a tax on the sick. But because it counteracts the moral hazard inherent in health insurance, cost sharing is an important tool for achieving allocative efficiency. For example, the U.S. Medicare program covers hospital and inpatient services using social security taxes, but outpatient services are covered by a voluntary medical insurance program (Medicare Supplementary Medical Insurance) in which individuals pay a highly subsidized premium equal to just 25 percent of the actuarial costs of this insurance (the rest of the costs are covered by general government revenues). Cost sharing, both deductibles and coinsurance, is also required at the point of service use to encourage efficient use of services under both programs.

In designing premiums and cost-sharing arrangements, several important equity, efficiency, and administrative concerns emerge. To ensure equity, in most cases the poor

must be exempt from such charges. To ensure efficiency, copayments must be set high enough to discourage frivolous use, but not so high as to discourage the use of needed or cost-effective services. In fact, some countries have differential cost sharing depending on the type of service, so that preventive services generally do not have any cost sharing (and indeed may be provided directly by the government as a pure public good outside the health insurance system), while less important or more discretionary services may require high levels of cost sharing.

Another aspect of premiums and cost sharing relates to the need to exempt individuals with catastrophic medical expenses. In industrial and some developing countries 10 percent of the population may incur 70 percent of health care costs. Exempting these people on equity grounds results in a substantial loss of potential revenues. This adjustment also violates the efficiency rule that user charges should be set equal to marginal costs (a rule more easily applied to more traditional publicly provided services, such as water and electricity).

Administrative issues are also important. If the costs of collection exceed the user charge (unless there are significant allocational savings), revenues will actually decline. Another administrative compliance issue concerns who gets to keep the additional revenue. In a number of developing countries, unless the health facility or provider gets to keep some or all of the additional revenue, they have few incentives to collect the cost sharing. Furthermore, as long as the facilities and providers use these revenues for quality improvements or service enhancements, individuals will continue to use these facilities.

Another issue concerns policymakers relying on user charges to avoid considering alternative financing approaches that might generate larger revenues more easily and equitably. For example, social insurance systems might have a much larger impact and longer-lasting ability to finance underfunded public systems and provide the government with an opportunity to promote efficiency by creating incentives for better service delivery (Lewis 1993).

Many industrial and developing countries have extensive experience with various types of cost sharing—both formal user charges and direct out-of-pocket payments for private services—including controlled experiments in the United States and China. In the United States a \$70 million health

insurance experiment conducted by the Rand Corporation found that well-designed cost sharing can provide additional revenues and increase efficiency without discouraging necessary service utilization. The evidence from Canada and Europe regarding the equity and efficiency effects of user charges is more mixed, however. Gertler and Hammer (in this volume) summarize much of the evidence and discuss the links between user charges and social insurance.

Evidence on user charges in developing countries is extensive and varied. The findings indicate:

- A strong utilization response to user charges, with disproportionately larger reductions in utilization on the part of the poor.
- Exemptions from user charges often benefit high-income groups.
- User charges need to be considered in the context of time costs and managerial and administrative capacity.
- Although user charges can be used to supplement public revenues for curative care at the facility level, total revenue generation has not met expectations (being on the order of 5 percent of total revenues).
- Effects on health status and efficiency are less clear, although there is some evidence of adverse effects on health outcomes.
- People appear more willing to pay for tangible benefits (such as drugs).
- User charges for public services have elicited higher prices for private services, resulting in declines in total utilization (see Gertler and Hammer in this volume; Wang'ombe in this volume; Gertler and van der Gaag 1990; Creese and Kutzin 1995).

In other words, user charges can increase efficiency and ensure equity if the systems are designed carefully and generate tangible benefits for individuals. But time costs, administrative capacity, and impacts on private pricing policies must be analyzed carefully. Moreover, while revenue generation can have important effects at the facility level, overall revenue generation may be lower than original expectations.

Mandates

When fiscal constraints are tight and market failures preclude public provision of a particular benefit—such as health

insurance—government mandates to require provision of such benefits, either by employers or by individuals, can help government achieve its policy goals.²⁶ Employer and individual mandates can be evaluated using the same criteria used to evaluate alternative revenue-raising sources. In fact, under certain conditions mandates are more efficient than taxes, though they tend to be less equitable.

Employer mandates can be more efficient than public provision financed by inefficient taxes in several ways. The costs of the mandated benefit will be treated by the employer as an additional labor cost and will be shifted back on to employees in the form of lower wages, discretionary benefits, employment, or future wage increases. If employees increase their labor supply to offset the costs of the benefit, the increase in labor supply will reduce the deadweight loss. If the increase in labor supply fully offsets the costs of the benefit (that is, there is full valuation of the benefit by employees), then there is no excess burden and the employer mandate is a more efficient means of providing the benefit than taxation (Cutler and Madrian 1996). In effect, mandates are a benefit tax.

There may, however, be institutional constraints that preclude this employment response and wage or discretionary benefit adjustment from happening, including antidiscrimination rules, workplace rules, union rules, minimum wage laws, and so on. Thus even if everyone in the employment group fully values the benefit, these rigidities will cause efficiency losses since the full wage adjustment will be inhibited. Firms unable to reduce compensation would close, and those in noncompetitive markets would shift costs to consumers. High-cost (elderly) and low-wage workers could lose their jobs. In fact, in certain cases these efficiency costs can exceed those that would occur under a payroll tax falling on all workers to finance the benefit (Gruber 1994).

The main problem with mandates relates to equity, since the valuation of the benefit and the subsequent wage adjustments generally bear no relationship to ability to pay. Mandates are a benefit tax, not an ability to pay tax. Indeed, in a world of rigidities high-cost and elderly workers would likely suffer the most, making the mandate a regressive approach to financing health insurance benefits.

Mandates can also be imposed on individuals. Mandates on individuals do not have any adverse effects on jobs or

wages, and impose lower direct costs on businesses. But such mandates may be even more regressive than mandates on employers; they provide incentives for employers who currently provide health insurance coverage to drop it and, unless accompanied by subsidies to the poor to offset the equity problem, impose high marginal tax rates and notch effects if subsidies are phased out as an individual's income increases. Moreover, other issues unique to health insurance markets arise, such as the higher premiums charged for individual policies relative to group policies (Committee on Energy and Commerce, House of Representatives and Special Committee on Aging, U.S. Senate 1989).

Mandates can be an efficient means of correcting for the failure of private markets to provide health insurance without increasing public expenditures and introducing the distortive taxes needed to finance such increased expenditures. But equity considerations and the effects on workers and firms must be carefully considered in light of possible labor market rigidities that can result in adverse employment and production effects. And mandate enforcement, a difficult task in industrial countries, would be even harder in developing countries. Enforcement mechanisms such as withholding welfare checks, drivers licenses, or school enrollment would not be effective incentives in developing countries because most developing countries have no such programs or lack the administrative mechanisms needed for enforcement.

Grant assistance

Grants from foreign donors (borrowing is discussed below) are a major source of health care financing and of total expenditures in low- and some middle-income countries. In 1994 official development assistance (ODA) was more than \$47 billion, or about 1 percent of developing country GDP.²⁷ In Africa (excluding South Africa) donor assistance accounts for an average of almost 20 percent of health spending, and in several countries for more than 50 percent (World Bank 1993). These revenues cannot be readily classified as public or private. If they are tied to public activities, the revenues essentially augment government efforts. If they go to nongovernmental organizations (NGOs) or directly to individuals, they augment private financing. Donors are concerned about whether such assistance

increases net expenditures in the targeted sectors or simply substitutes for government spending that may then be used for unproductive sectors, such as military spending (Feyzioglu, Swaroop, and Zhu 1996).

Donors typically finance large shares of both capital and recurrent expenditures. Donors should both coordinate their efforts and get their priorities right, especially since such activities have important implications for public and private financing and for current and future expenditures and revenue needs (World Bank 1993, p. 167). Donors should target their assistance to high-priority areas, and with better coordination could avoid fragmentation and conflicting impacts from their assistance.

Grant assistance is subject to the budgetary situations and political agendas of donors. As a result, while grant assistance is an important financing source in the short run for many countries to purchase essential health services and develop critical infrastructure capacity, it is not a reliable long-run source of financing. Thus it cannot be relied on to ensure long-term financial sustainability.

Borrowing

Borrowing, like grant assistance, can be either a public or private financing mechanism. When the government is the borrower, it is a public revenue source. When a private entity is the borrower, it is a private revenue source. Funds can be borrowed from either domestic or foreign sources. Foreign sources of health financing include international development organizations, bilateral donor assistance agencies, private commercial institutions, and foreign medical suppliers. Such lending may include a significant grant (donor) element or may be at full market rates. The essential feature of borrowing is that the funds eventually must be repaid. Borrowing, in effect, imposes a burden on future generations.

Domestic and foreign financing have different implications. Domestic borrowing has a clear opportunity cost—namely, the opportunity cost of the alternative uses of those funds. If, in the absence of borrowing, those funds would have been used for domestic consumption, while the borrowed funds are used for capital investment, then economic growth and the future well-being may improve. But if the borrowed funds are used for low-priority or inefficient recurrent health expenditures rather than productive capital

investments, overall growth and future well-being may be reduced. More generally, public investments financed by domestic borrowing do not contribute to capital formation if they simply divert these funds from private investment opportunities. In either case the loan will have to be paid back with interest out of future production.²⁸

One essential difference between domestic and foreign borrowing is that foreign borrowing does not require that current consumption be reduced. Moreover, while the net gain to future generations is lower than it would have been had government spending been financed out of current tax revenues, the cutbacks in future consumption needed to pay off and service the loan come out of a higher level of income (assuming wise investment choices) because foreign borrowing does not impose any immediate opportunity costs (Musgrave and Musgrave 1976).

Borrowing, like other potential forms of revenue raising, requires careful consideration of intertemporal tradeoffs. Borrowing imposes a burden on future generations and so must be carefully considered in the context of economic growth and development objectives. Given the poor balance of payments situations in many low-income countries as well as higher-priority development needs, borrowing for social programs, except where such borrowing is on a concessional basis, is likely to be quite limited. Moreover, concessional borrowing from international organizations (such as the World Bank) generally has policy conditions attached.

Public financing implications for developing countries

Governments can use their revenue-raising and regulatory powers to publicly finance or to require private financing of health insurance and health services. Yet the government's ability to raise revenues and the private sector's ability to comply with government mandates and user charge requirements are inversely related to country incomes. Economic bases, institutional structures, and administrative capacities strongly influence public revenue-raising potential and instruments. In developing countries several issues merit particular attention:

- Taxes and other public revenue sources must be evaluated in terms of economic efficiency, equity, and administrative simplicity.

- The inherently agrarian/rural nature of much economic activity, the small and transient nature of urban formal sector firms, and the openness of their economies generally preclude heavy reliance on the more efficient and progressive income taxes used in most industrial countries.
- Limited taxable capacity and inefficient administration limit revenue generation potential.
- Broadly based taxes with limited rate differentiation and few exemptions, deductions, and exclusions applied to commodities, as well as entities that display little responsiveness to the tax, are preferable for economic efficiency and equity.
- A broadly based value added tax with limited rate differentiation, exemptions for the poor, and nondiscrimination between domestically produced and imported goods ranks high in terms of equity, economic efficiency, and administrative feasibility.
- Public financing of personal health services pools risks, eliminates adverse selection, and ensures equity but reduces choice and imposes excess burdens.
- Since developing countries can only generate about two-thirds the revenue generated in industrial countries (relative to GDP), in the absence of regulated private insurance markets developing countries could improve welfare by organizing these markets so that people who are able to pay can purchase health insurance at an actuarially fair price.
- User charges can be used to enhance public revenues where the services in question have individual (rather than collective) benefits. But such charges need to be carefully structured to balance equity, efficiency, and revenue generation objectives.

Developing countries will continue to rely on public and private revenues to finance their health care systems. The instruments used will affect economic efficiency, the distribution of income, and the revenues generated. Limited administrative capacity and infrastructure hinder implementation of effective policies. Dealing with these impediments to fiscal and health financing reform should be a priority; otherwise the effects of economically and politically "correct" policy prescriptions will be marginal. Moreover, implicitly underlying these technical and administrative concerns is the need for a stable and sustainable political environment.

Private Financing Sources

This section discusses private sources of revenue for financing health care, focusing on private insurance, out-of-pocket payments for direct purchase of medical services, and charitable contributions. Borrowing and grant assistance, which can be treated as either a public or private revenue source depending on the entity receiving the funds, were discussed in the previous section.

Private health insurance

The nonpoor may have several reasons to prefer using private health insurance to finance personal health services. First, by pooling risks, overall risks are reduced. Second, consumer sovereignty in choosing an insurance package that best fits that individual's preferences maximizes welfare. Third, by relying on private markets rather than government coercion, the benefits of risk pooling and consumer choice can be achieved while the efficiency costs of taxation are avoided. Fourth, private insurers can negotiate with providers over cost and quality more effectively than individual consumers.

On the other hand, adverse selection by individuals and risk selection by insurers may preclude effective and equitable risk pooling. Moreover, large numbers of insurers and inefficient insurance operations may result in high administrative costs (such as marketing costs), and individual insurers may be too small to effectively negotiate with medical care providers over prices. If this latter situation is the case, insurers will only be able to compete on their load factor, which tends to be a small percentage of the total premium (in the United States, for example, the average load factor for large group policies is about 10 percent; Enthoven in this volume).

A number of regulations and innovative approaches to risk pooling have been implemented to deal with these problems. Examples include the insurance reforms undertaken by many U.S. states, managed competition as a mechanism for organizing insurance markets, and informal (generally rural) risk-pooling schemes being implemented in developing countries.

Each U.S. state regulates private health insurance companies.²⁹ Such regulations generally apply to solvency, mar-

keting, information disclosure, premium levels, reinsurance, and so on (box 3). Although such regulations are needed to correct for the market failures inherent in insurance markets, they also raise the costs of private health insurance policies (because of, for example, mandated benefits; GAO 1996).

To ensure better functioning of state insurance markets, forty-four U.S. states have recently augmented their insurance regulations, and some states (such as New York) now require pure community rating (box 4). These new

requirements are designed to offset favorable risk selection by insurers (guaranteed issue, renewability, continuity of coverage), redress informational gaps for consumers (information disclosure, standardized benefits), and promote community rating (rating band restrictions).

Managed competition. Managed competition is a recent innovation that organizes public and private insurance markets, fosters competition among insurers, and addresses

BOX 3	
U.S. states and insurance regulation	
<i>Market conduct requirements</i>	
Plan benefit coverage and description	States review and approve insurance policies to ensure that they are not vague or misleading and meet state requirements (such as mandatory benefit provisions).
Small-group reforms	Most states require insurers selling to small employers to accept and renew employees who want health insurance coverage, establish short waiting periods for preexisting conditions, and require portability of coverage when an individual changes jobs or insurers.
Consumer protections and complaints	States monitor insurers' actions to ensure that they are not engaging in unfair business practices or otherwise taking advantage of consumers. They also assist consumers by investigating complaints, answering questions, and conducting educational programs.
<i>Financial requirements</i>	
Licensing	States license insurance companies and the agents who sell insurance to ensure that companies are financially sound and reputable and that agents are qualified.
Financial solvency	States set standards for and monitor the financial operations of insurers to determine whether they have adequate reserves to pay policyholders' claims. States restrict how insurers invest their funds.
Rate reviews	States review and approve rates or require actuarial certification to ensure that rates are reasonable for consumers and sufficient to maintain the solvency of insurance companies. Some states regulate insurer rating practices in the small-group market to determine the factors insurers can use in setting premiums.
<i>Tax requirements</i>	
Premium taxes	Nearly all states assess premium taxes on insurers.
Guaranty funds	States require insurers to finance guaranty funds that provide financial protection to enrollees who have outstanding medical claims in case of insurer insolvency.
High-risk pools	Some states require insurers to finance losses in high-risk pools that provide health coverage for individuals who had otherwise been denied coverage because of a medical condition.
Source: GAO 1996, pp. 5-6.	

several aspects of insurance market failure. The basic goal of managed competition is to organize insurance markets so that individuals can make informed choices about their purchase of insurance while reducing moral hazard by making them financially responsible for the consequences of their actions. Moreover, many of the inappropriate risk selection practices of private insurers can be mitigated by organizing insurance through purchasing cooperatives subject to rules such as standard benefit packages, coordinated open enrollment periods, guaranteed issue, guaranteed renewability, limits on the number of rating bands, information disclosure on plan performance, and marketing through the purchasing cooperative (not the insurance plan). By eliminating (or precluding) tax subsidies for the purchase of insurance, subscribers are more cost-conscious, and moral hazard is reduced. Purchasing cooperatives are essentially a supermarket in which informed and cost-conscious consumers compare prices and services before buying health insurance. This approach also creates strong incentives for insurers to be efficient purchasers of services from medical care providers (Enthoven in this volume).

For managed competition to work effectively and equitably, the revenues that finance the system (from whatever source) should be pooled in a fund that distributes them to the insurers who chose to participate (through the purchasing cooperative) on a risk-adjusted capitation basis. Risk-adjusted capitation payments are essential to ensure that insurers will enroll individuals with greater health risks. Developing operational risk adjustment tools is far from simple (Enthoven in this volume). The California Public Employees Health Plan, the U.S. Government's Federal Employees Health Benefits Plan, health plans in the U.S. states of Connecticut, Florida, Iowa, Kentucky, Minnesota, and Washington, U.S. President Clinton's failed health care reform initiative, the now-suspended Dutch health reform, and the recently established Russian health insurance system all rely on managed competition organized by a public entity with participation by public or private insurers and providers (Sheiman in this volume).

Medical savings accounts. Medical savings accounts also provide incentives for individuals to be effective purchasers of health services (see Nichols, Prescott, and Phua in this volume). Simply put, medical savings accounts are indi-

vidual savings accounts from which individuals pay for health care, coupled with a backup financing mechanism (along the lines of a catastrophic insurance policy). The source of the savings account and the backup financing can be public or private. Like direct out-of-pocket payments (including user charges) and managed competition, medical savings accounts provide consumers with strong incentives to be cost conscious. Such accounts also preserve freedom of choice of medical care provider and offset the moral hazard implicit in insurance arrangements. In addition, medical savings accounts may help achieve basic development objectives by encouraging domestic savings.

There are at least two basic models of medical savings accounts: the system used in Singapore, which supplements other publicly funded health programs, and the models used in the United States, which cover a much broader range of services. Both models are backed by a public or private insurance mechanism that covers catastrophic costs above some threshold deductible if the savings account is exhausted. To encourage cost consciousness, this deductible must be significant—perhaps 5–10 percent of family income.

One of the biggest advantages of a medical savings account is that individuals have a strong incentive to be prudent consumers of medical services, since they can use any unspent funds in a variety of ways (Nichols, Prescott, and Phua in this volume). In other words, the benefits from being a prudent consumer accrue to the individual—not

BOX 4

Recent U.S. reforms in state insurance regulation

- Guaranteed issue (everybody must be offered a policy).
- Guaranteed renewability except for fraud, nonpayment of premiums, and the like.
- Continuity of coverage provisions, including insurer limitations on preexisting condition exclusions and waiting periods.
- Restrictions limiting the rating factors that can be used to determine premium rates (for example, limits on the number of rating bands based on age or limits on premium differentials across groups).
- Full disclosure of information.
- Standardized plan benefits.

Source: Institute for Health Policy Solutions 1995.

the government, employer, or private insurance company (or its subscribers, collectively). Unspent savings can be used for nonmedical consumption, passed on as a cash transfer at the time of death to the deceased's heirs, or rolled over from year to year and used for future medical expenses (so that in a sense individuals are pooling noncatastrophic risks over their life cycle). Although there have been few rigorous evaluations of the experiences of U.S. corporations that have switched to medical savings accounts, recently passed U.S. health insurance reforms provide tax subsidies to individuals establishing such accounts, making it likely that their use will increase.

Informal risk-pooling arrangements. Informal, generally rural, and usually voluntary risk-pooling schemes are one variant of the health insurance model common in developing countries, particularly in Asia and Africa (see Creese and Bennett in this volume). These schemes generally encourage prepayment of individual premiums into an identifiable fund, provide some notion of entitlement to benefits, and work with a defined set of service providers. The schemes are usually organized by and often linked to government providers, although in some cases they are run by community health committees. Zaire's Community Health Insurance Scheme, Thailand's Health Card, and the United Nations Children's Fund's (UNICEF) Bamako Initiative (in more than thirty countries) are examples of such arrangements (see La Forgia and Griffin 1993; Khoman in this volume; Tibouti). Creese and Bennett (in this volume) describe the underlying conceptual bases for these schemes and experiences in developing countries.

Out-of-pocket payments for health services

As noted above, consumer out-of-pocket payments for health services are private expenditures. But such expenditures can take a variety of forms, including direct purchase of private services, direct purchase of publicly provided services (for example, public user charges), and cost sharing for publicly or privately financed services. When such payments are in the form of user charges for publicly provided services, they are a public revenue source. When they are direct payments for privately provided services, they are a private revenue source. (The conceptual issues and empir-

ical evidence regarding direct out-of-pocket payments were discussed above.)

Much of the discussion about health insurance focuses on how such insurance can cover most basic personal health services needs. But insurance policies are just as relevant in other contexts—such as covering dread diseases, providing supplemental benefits to individuals covered under a public system, and covering long-term care and social services that are not covered by standard health insurance policies or public systems. These are important issues in middle- and high-income countries. Although a detailed discussion of these issues is beyond the scope of this paper, such insurance needs to be evaluated using the same criteria (economic efficiency, equity, and administrative simplicity) defined earlier.

Furthermore, it is important to analyze the effects these supplemental policies have on the insurance policies or systems that they supplement. For example, if a supplemental policy covers the cost-sharing requirements of the primary policy, then individuals will use more of the basic services covered by the primary policy. Thus several countries' insurance regulations forbid private insurers from filling in for cost sharing in public programs. Other issues of concern include high administrative costs and deceptive marketing practices, which are especially problematic when policies are marketed to the elderly, who tend to overinsure (Chollet and Lewis in this volume).

Much of the above discussion has focused on the conceptual and operational bases for health insurance and on policy prescriptions for industrial countries. Developing countries, however, face additional challenges. It is difficult to provide private insurance in the absence of well-developed financial markets. Operating private insurance is complex, requiring effective management information and accounting systems as well as mechanisms to deter fraud and abuse. Reinsurance mechanisms and consumer protections are needed. Private health insurance needs to be regulated by government, yet such regulations are complex and may be beyond the capacity of governments in many developing countries. There are also potentially high administrative costs associated with insurance, potentially diverting money from health services into health administration. All these factors must be given careful consideration.

Charitable contributions

Because charitable contributions can be directed to public or private institutions, they can be a public or private revenue source. In industrial countries such contributions are sometimes encouraged by the tax system (that is, such contributions are tax deductible), but they are generally a small portion of total health spending. Such contributions are generally beyond the control of policymakers, and cannot be relied on as a stable and long-term source of financing.

Moreover, there are virtually no data on the importance of this source of financing for developing countries. Charitable contributions can be domestic or foreign. Foreign charitable contributions are the same as foreign grant assistance (discussed above) that has few or no policy conditionalities attached. There are no efficiency or equity costs in obtaining these funds. Domestic charitable contributions do have an opportunity cost—the alternative domestic uses of the funds raised by the charity. If such contributions are encouraged by the tax system, there will be efficiency and perhaps equity costs to the economy.

Private financing implications for developing countries

Although private finance cannot address equity and public health issues, it is generally essential given governments' limited ability to marshal sufficient resources to finance (directly or through transfers) most personal health services. Yet given the market failures affecting both the demand and supply sides of the market for health services, efficiency in health services consumption and provision is unlikely to be achieved through consumer sovereignty and a laissez-faire approach to the health services market. This is especially true in developing countries, where the bulk of health spending, especially in the poorest countries, is private. Putting aside issues of equity, if heavy reliance on private spending is necessary for financial reasons or desirable on efficiency grounds, governments should implement regulations that offset health market failures.

Several government interventions in the private market for health services can improve the efficiency and equity of private financing:

- Public regulation of private health insurance is essential to ensure effective risk pooling, affordability, solvency, informed choice, and continuity of coverage.
- In the absence of a private insurance market, governments in developing countries may want to consider establishing a publicly organized (or quasi-public) but privately financed insurance system.
- Governments need to provide the regulatory framework to ensure quality, efficient pricing, and relevant information concerning both health insurance and health service provision and consumption.

Reliance on private financing is a necessity in many low-income countries. As a result governments' abilities to deal with equity and redistribution objectives are somewhat limited. Still, for people who are able to pay, government regulation of insurance and public provision of privately financed health insurance can result in more equitable and efficient insurance markets and in gains from risk pooling. Moreover, effective oversight of the entire delivery system (public and private) can result in higher quality, greater efficiency, and better value for money for both publicly and privately financed services (insurance and out-of-pocket). The difficult questions are: Given the limited institutional capabilities of many developing countries, is effective regulation of the insurance industry and private providers possible? Can effective insurance markets be developed given the state of these countries' financial markets? And can administrative costs be kept within reasonable limits? These important questions need much more attention from the countries themselves as well as from development agencies and donor organizations.

Regional Perspectives on Health Financing Reform

This section summarizes the main challenges confronting each region's health care financing and delivery systems and proposes essential reforms. These observations are based on the epidemiological and economic information presented earlier as well as on the characteristics of the countries and health systems in each region. Many of the health financing challenges facing developing regions can also be analyzed from an income perspective (box 5).

Europe and Central Asia

The formerly socialist economies of Europe and Central Asia face major challenges as they move away from centrally planned health care systems toward systems based on social insurance models (see World Bank 1996b; Goldstein and others 1996; and Klugman and Schieber 1996). The region contains about 9 percent of the world's population and accounts for 3 percent of its income. Among developing regions Europe and Central Asia has the highest public share of health spending—more than 70 percent. Moreover, health systems account for 7.2 percent of GDP, or \$154 per capita, the highest regional per capita expenditure after Latin America and the Caribbean.

Yet although Europe and Central Asia is within the middle-income range, with a per capita GDP of about \$1,800, the transition to market-based economies and the breakup of the Soviet Union have brought economic crisis to many

countries in the region. As a result health outcomes have declined, and in some countries diseases such as diphtheria and tuberculosis (both under control before the transition) are on the rise. Adult health is also a serious problem. Overnutrition, substance abuse (alcohol, tobacco), and violence are major public health concerns. Although under central planning Europe and Central Asia managed to achieve universal access in all countries—the only region to do so—these systems relied on large numbers of low-quality inputs. Moreover, central planning provided few incentives for efficiency. And clinical standards are dated, resulting in inefficient and ineffective treatments for many conditions.

The challenge for the region is to maintain universal access, increase efficiency, reduce adult mortality, and improve quality. Over-resourced delivery systems need to be reconfigured. Clinical practices must be updated. Health promotion and disease prevention programs should be implemented. Sustainable and efficient financing arrangements

BOX 5

Trends in health care financing at different income levels

Low-income countries (per capita health expenditure of less than \$80, with health sectors accounting for 3–4 percent of GDP). Government budgets finance most public health care expenditures, but are limited by narrow tax bases and weak collection capacity. Although public spending is sometimes supplemented by user fees, these account for a small percentage of public revenues. External assistance continues to be a significant source of revenue, especially in Sub-Saharan Africa, South Asia, and the Pacific. Apart from the government budget, options for formal insurance schemes (public or private) are limited by the small size of the formal employment sector, limited savings, underdeveloped financial sectors, and weak institutions. Instead, households rely on informal arrangements (extended families, traditional community support systems, NGOs, charitable organizations, rural cooperatives) to provide protection in the event of catastrophic illnesses. *Key issues:* Developing informal risk-pooling mechanisms (such as NGO or community schemes) to expand coverage to the poor and making better use of external assistance.

Middle-income countries (per capita health expenditure of \$80–400, with health sectors accounting for 5–6 percent of GDP). Middle-income countries rely on more financing sources than low-income countries, including social security schemes for civil servants and other groups of formally employed workers. Although some countries prefer to expand coverage using social security systems, others are moving toward national health service models

that rely on general revenues. There is usually rapid growth in private spending as modern private health services expand; private insurance becomes more common, although it (as well as private providers) remain largely unregulated. Expansion in formal employment, capital markets, and financial sectors, improved institutional contexts for formal insurance, and urbanization and other social changes help households and enterprises make the transition from informal to formal risk-pooling mechanisms. But countries in this group still fall short of universal coverage. Rural-urban disparities and the persistence of poverty contribute to these problems, and the multiplicity of financing sources, often with overlapping or inconsistent policies, adds to inefficiencies and inequities. *Key issues:* Developing consistent social insurance schemes, expanding coverage to rural and informal sectors, and regulating the private sector.

High-income countries (per capita health expenditure of more than \$400, with health sectors accounting for 6–15 percent of GDP). Except for the United States, all industrial countries have achieved universal coverage, largely through public financing (whether publicly managed or publicly mandated). Also with the exception of the United States, private insurance is used mainly to supplement the core services covered by public financing. The Republic of Korea and a number of newly industrialized countries also have attained, or are close to attaining, universal coverage. *Key issues:* Containing costs, dealing with aging populations, and ensuring quality of service and patient satisfaction.

must be put in place, and the adverse economic consequences of high payroll taxes to support social programs (including health insurance funds) must be mitigated. Service provision should be separated from finance, and incentive-based provider payment systems should be introduced. The ongoing transition from public finance and provision to public and private finance and provision must be carefully monitored. With real per capita GDP projected to grow at 3.7 percent a year over the next ten years, the need for new governance structures and human development, rather than financial constraints, may be the biggest challenge to effective reforms.

Latin America and the Caribbean

Health systems in Latin America and the Caribbean are moving toward universal access, with mixed public and private provision and financing (see Burki 1995; World Bank 1996c; and Medici and others in this volume). The region, which contains 8 percent of the world's population and accounts for 6 percent of its income, has a per capita income of some \$3,100—the highest among the six developing regions. Health systems account for an average of 6 percent of GDP, or \$200 per capita, the highest per capita expenditure of any developing region.

At 49 percent, Latin America and the Caribbean ranks fifth among developing regions in terms of the public sector's share of health spending. Health care is financed by ministries of health, with social insurance funds playing a prominent role, although out-of-pocket payments and private insurance are also major sources of financing. Most countries in the region need to work harder to ensure coordination between ministries of health and social insurance funds on the financing and provision of services, and achieve a balance in the financing and delivery of preventive and curative services. Nutrition, reproductive health, and communicable diseases are still major problems in some of the poorer countries. Still, injuries and noncommunicable diseases account for most of the burden of illness—and receive most of the attention of policymakers—in nearly every country. In the larger countries there are significant urban-rural differentials in access and health outcomes.

Universal access, quality, and efficiency are major concerns in most countries. Many countries are reforming

their financing systems to increase access, generally by expanding social insurance systems and by encouraging private financing. In some countries these efforts are leading to two-tiered systems of care. Fiscal sustainability is also a concern, especially since health and other social insurance funds (such as pensions) are often commingled without specific earmarks. A number of countries have introduced broadly based reforms to address these issues. With real per capita GDP projected to grow at 2.2 percent a year over the next decade, the fourth highest of the six developing regions, many slow-growth countries in the region will likely face significant financial constraints in improving access and quality.

Middle East and North Africa

The Middle East and North Africa region is extremely diverse in terms of economic development, political orientation, and social conditions (see World Bank 1996d). The region contains 5 percent of the world's population and accounts for 2 percent of its income. At \$2,700, the region's average per capita income is second only to that in Latin America and the Caribbean. The public sector accounts for half of health expenditures, the fourth-highest share among the six developing regions. Health expenditures account for 5.2 percent of GDP, or about \$120 per capita, the third highest among developing regions.

Non-oil and oil-producing countries as well as socialist, nonsocialist, and statist health systems have very different approaches. There is considerable political instability in the region as a result of interregional rivalries. High adult illiteracy (particularly among women) and poor women's health indicators are important concerns, especially in the lower-income countries. Most countries in the region face dual disease burdens—noncommunicable and communicable. Given the region's high levels of fertility and population growth, reproductive health continues to be a major issue in many countries. The public-private mix in financing and provision is important in the lower- and middle-income countries, while the wealthier oil-exporting countries tend to have national health service systems. Social insurance is not widespread and private health insurance plays a small, albeit increasing, role in some countries. The quality of care in the public sector is often a problem.

Like the region, countries' health care reform agendas are diverse, though there are commonalities. The poorer countries still face the unfinished public health agenda of communicable diseases, with a focus on women's health and education. All countries are experiencing substantial increases in their burden of noncommunicable disease. Efficiency and quality are problems in most countries. Unfettered and uncoordinated growth in private health care systems is increasing costs and resulting in two-tiered systems of care. Appropriately dealing with the public-private mix in financing and delivery should be a priority. More equitable risk pooling and financing of public systems is also important in most of the region's lower- and middle-income countries. With the end of the oil boom in the mid-1980s and the globalization of the world economy, many Middle Eastern and North African countries are facing serious economic constraints. With real annual growth in per capita GDP projected at just 0.4 percent over the next decade, the lowest of the six developing regions, increasing efficiency in financing and delivery will be essential to prevent deterioration in access and quality.

East Asia and the Pacific

The economies in East Asia and the Pacific are extremely diverse, accounting for some of the world's largest (China, Indonesia, Philippines) and smallest economies. The region contains 30 percent of the world's population and accounts for 4 percent of its income; per capita income, at about \$1,200, is the fourth highest among developing regions. The public sector accounts for just over half of health expenditures, the third-highest share among developing regions. Health expenditures account for 4.1 percent of GDP, or almost \$40 per capita, making it (along with Sub-Saharan Africa) the second-lowest health expenditure region.

The region has experienced rapid and sustained economic growth for many years, with most countries approaching or having achieved middle-income status and market friendliness. There is confusion about the government's role in the health sector, however, and largely unregulated private financing and delivery have grown rapidly, often duplicating public efforts. Many public health services are poorly funded and inefficiently delivered. Decentralization is needed, but administrative and managerial capacity at

regional and local levels are weak. Traditional medicine is a significant part of the health system. Clinical skills are often limited. Most countries face dual disease burdens (communicable and noncommunicable) but have been slow to react. Access, universal coverage, efficiency, quality, and the public-private mix are major concerns in most countries.

Needed reforms in the region span virtually every major health services issue, including the unfinished public health agenda, access, quality, costs, financing, and the public-private mix. Rebuilding the shattered health systems in Southeast Asia, completing the unfinished health agenda in the poorer countries and rural areas, and implementing insurance reforms and effective risk pooling are important issues for the region. Given the emerging private market and the emphasis placed on individual and family responsibility for health care in many countries, particular attention needs to be paid to the public-private mix in delivery and financing and to user charges and cost recovery. Given the region's pragmatic governments and the high rates of annual growth in real per capita GDP projected over the next decade—averaging 6.8 percent, the highest among developing regions—there are major opportunities for basic health reforms. It will be particularly important to ensure that these systems absorb the lessons learned in other countries (such as in the Republic of Korea, with its serious cost-containment problem) as their incomes rise and their systems are reformed. Ensuring universal access with an appropriate public-private mix in financing and delivery in an expanding economy creates major risks for cost escalation as well as for two-tiered systems of care. Pooling risks through private and social insurance, medical savings accounts, and other approaches to national health services will be essential as access improves.

South Asia

South Asia also contains some of the world's largest countries (Bangladesh, India, Pakistan), as well as some of the poorest. But South Asia differs from East Asia and the Pacific in several important ways, including its much lower income level and lower projected economic growth. South Asia contains 22 percent of the world's population and accounts for 2 percent of its income. At \$440, per capita income is the lowest among developing regions. The public sector accounts for just 39 percent of all health expenditures, the

lowest public share among developing regions. Health expenditures account for 3.7 percent of GDP, or \$12 per capita, also the lowest among developing regions.

Except in India, external assistance is an important component of health spending, accounting for more than 10 percent of expenditures. The region contains the largest number of people living in poverty among developing regions, and faces a high burden of disease and undernutrition associated with poverty. Women's education and roles in society are important issues that affect their health. There is significant inefficiency in health care systems, both systemwide and in individual facilities. Public health services are often poorly targeted in terms of easing the burden of disease and ensuring cost-effectiveness. Formal insurance, both social and private, is extremely limited, although some household expenditures are collectivized through informal arrangements. As in East Asia and the Pacific, decentralization is an important issue, but administrative and management capacity is weak. Quality is poor in both the public and private sectors, and traditional medicine is an important component of the health care system. Significant segments of the population lack coverage and access.

Reforms in these countries should focus on basic public health, nutrition, and women's health and education. Targeted disease programs are still needed. Given limited resources, reforms should focus on the poor, on financing and delivering services efficiently, and on financial sustainability. Moreover, the private sector's sizable role in financing and delivery makes the public-private mix an important issue. Given the size of many of these countries, decentralization is essential, and intergovernmental fiscal relations must be addressed. Management capacity at all levels of government must be improved, and quality in both the public and private sectors needs to be assured. Training for health care workers and managers is needed. Providing the regulatory and policy framework for effective risk pooling for people who can afford private insurance would also enhance social welfare and increase the efficiency of private financing. Despite myriad basic health problems and a low baseline expenditure level, projected real per capita GDP growth of 3.7 percent a year over the next ten years will allow countries in the region to deal more effectively with the poverty and health system challenges they face. Effective management and policymaking will be key.

Sub-Saharan Africa

Sub-Saharan African countries are generally small and heterogeneous, a result of tribalism and migration (World Bank 1994). The region contains 10 percent of the world's population and accounts for 1 percent of its income. With a per capita income of about \$775, the region has the second lowest income among developing regions. The public sector accounts for 54 percent of health expenditures, the second-highest share among developing regions. Health expenditures account for 4 percent of GDP, or \$38 per capita, ranking the region (along with East Asia and the Pacific) as the second lowest in per capita health expenditures after South Asia.

The poverty of individuals and the financial solvency of governments are major concerns. The small size of most countries makes it difficult to achieve economies of scale in the provision of certain services. External assistance is a major component of health system support in the region, accounting for more than 15 percent of health spending on average and more than 50 percent in some countries. Formal public and private insurance is limited, and risk pooling generally takes the form of extended families and informal rural risk pooling (such as Bamako-type initiatives). Basic public health interventions for disease control and prevention, including the spread of HIV/AIDS, continue to be the region's main concern. The communicable disease burden is the highest in the world and will continue to be for at least twenty-five years despite a shift toward noncommunicable diseases. Affording and delivering basic public health and nutrition services are major challenges. There is little coordination between the public and financially dominant private sector. Service quality is poor, and the knowledge base is problematic. Over the next ten years real per capita GDP is expected to increase by just 0.9 percent a year, the lowest growth rate among developing regions after the Middle East and North Africa.

Given this poor economic prognosis and low levels of income and health spending, reform in Africa must be viewed over the long term—say, twenty years. External assistance will continue to be essential to reform. Although sectorwide reforms are needed, efforts should focus on improving targeting, ensuring cost-effective delivery of basic public health services, and promoting women's education and health. Improving physical and financial access to care is a neces-

sary concomitant to such efforts. Governance capacity needs to be strengthened, and coordination between the public and private sectors needs to improve. Although much of the policy focus needs to be on communicable diseases (including HIV/AIDS), countries should start addressing the impending noncommunicable disease burden through focused prevention and health promotion programs. Better risk sharing for personal health services through Bamako-type initiatives and through publicly (where affordable) and privately financed insurance arrangements should be a priority.

Conclusion

Although this paper has focused on health care financing in terms of public and private revenue sources, national policies must also be concerned with the management and uses of such funds. Still, strictly from the financing side, a number of health policy prescriptions have emerged that apply to all countries and regions:

- Revenue-raising efforts involve tradeoffs between equity and efficiency.
- Administrative capacity is an essential component of revenue-raising efforts.
- Since raising revenue imposes significant economic costs, governments must maximize the returns on the uses of such funds.
- A government's ability to raise revenue increases significantly as income increases.
- The structural characteristics of labor and industry in low-income countries limit the instruments available to these governments to raise significant revenues.
- For reasons of equity and economic efficiency, broadly based taxes with few loopholes should be the preferred tax approach in developing countries.
- User charges that are properly designed and focused on services with tangible benefits to consumers and service facilities can lead to increased financing and better services, although user charges are not equitable unless they are applied to income-elastic goods and services.
- Public health services should be publicly financed or subsidized.
- The advantages of health insurance as a means of pooling risks and the random nature and potentially high costs of treating many illnesses make public and private

insurance the preferred vehicles for financing personal health services.

- Given these advantages, their limited revenue-raising capabilities, and the importance of private financing, governments in developing countries should increase their institutional capacity to ensure the availability of efficiently run and privately financed health insurance to supplement government efforts.
- Informal risk-pooling schemes, often voluntary and sponsored by local governments, appear to be viable mechanisms for pooling risks in poor rural areas.
- Recent innovations in managing health revenues—including managed competition and medical savings accounts—may help promote the efficient use of resources and can offset some of the problems inherent in insurance markets in countries with sufficient administrative capacity and developed financial markets.
- Priority needs to be given to collecting information on public and private sources of health care revenues and expenditures in all regions. National health accounts are essential for effective policymaking.

Notes

1. For example, the Pan American Health Organization (PAHO) is currently updating health expenditure data for countries in Latin America and the Caribbean. The authors are grateful to Ruben Suarez, PAHO, for sharing the early results of this effort.

2. There are some definitional problems in the case of publicly mandated but privately managed funds. Although the national health accounts for OECD countries categorize these types of funds under the public domain, in many developing (mainly middle-income) countries that distinction is not always clear. For example, private insurance in Chile is a privately managed fund that is part of a publicly mandated health financing system, and is designated as being private in the Pan American Health Organization's regional database (Suarez 1997).

3. For an evaluation framework of health financing reforms see WHO 1995.

4. Other market failures that may justify government involvement, such as entry barriers and decreasing production costs, are beyond the scope of this discussion; see Jönsson and Musgrove in this volume and Hsiao 1995.

5. In the case of certain purely public goods from which no individual can be excluded from the benefit (vector control, national defense), individuals may be unwilling to purchase any of the good, since they cannot be excluded from consuming it.

6. In this context insurance simply means pooling risks through a public or private entity that is the recipient of a premium, tax, or other financial contribution. A national health service pools risks through collective contributions to finance health services even though an insurance fund is not specifically established. In addition, a national health service directly controls the uses of such funds through direct provision of services, although in many developing countries social insurance funds also have their own delivery systems. In most OECD countries with social insurance funds, such funds purchase services from public and private providers that are not owned by the fund. Similarly, many of the OECD countries with national health service systems are promoting facility autonomy and separation of finance from provision.

7. For an in-depth discussion of private health insurance see Hall 1994 and Chollet and Lewis in this volume. For an analysis of insurance market failures and potential remedies see Hsiao 1995, pp. 130–34.

8. For a theoretical treatment of insurance see Laffont 1989, chapter 8.

9. This occurs because pooling a large number of similar risks reduces the variance in the probability distribution of the adverse event occurring. The reduction in variance occurs through the law of large numbers, which states that the variance for a given risk is reduced the more times the risk occurs (see Hall 1994, p. 7).

10. People pay insurance premiums both to be relieved of uncertainty about the loss and to be compensated should the loss occur. Thus there is a value to the individual even if the loss does not occur (Dorfman 1982, p. 5).

11. For a risk to be insurable it must be important, accidental, and calculable, with definite losses that are not catastrophic relative to the size of the pool (Bickelhaupt 1983, pp. 13–14).

12. If individuals do choose their employers for insurance purposes, then there is clearly an adverse selection problem within employee groups as well (CBO 1994).

13. Indemnity insurance (in which the individual or provider is reimbursed on a fee-for-service basis by the insurer for the medical expenses incurred) produces more moral hazard than managed care, but also has weaker incentives to risk select (Newhouse 1996).

14. Arrow (1963) argues that “competitive insurance markets will yield optimum allocation when the events insured are not controlled by individual behavior” and “non-market controls, whether internalized as moral principle or externally imposed, are to some extent essential for efficiency” (pp. 537–38).

15. See Newhouse (1996) for an interesting conceptual and policy-relevant discussion of tradeoffs between production efficiency and selection by health plans and providers.

16. Some of these problems have been exacerbated by tax subsidies for employer-provided health insurance; see Hall 1994.

17. Community rating differs from experience rating, in which premiums are based on the experience of a specific, generally more homogeneous, group (such as an employment group).

18. In practice the situation is more complicated because in many countries general revenues are used to subsidize social insur-

ance funds. Moreover, user charges are also prevalent under both arrangements.

19. The International Monetary Fund’s (IMF) *Government Finance Statistics* often do not include revenue data for regional and local governments. Although we obtained such data from other sources where they were absent for large countries, it is possible that missing data for some small countries biases the ratio downward. This would be a more serious problem in Latin America and the Caribbean given the region’s higher income and governments’ greater ability to raise revenues.

20. Grant assistance and borrowing can be considered private sources of financing when the entity receiving the aid or loan is a private entity (nongovernmental organizations, private providers, private citizens, and so on). Health services can also be financed by cutting other public expenditures. Moreover, another method of financing, not addressed in this paper, is to increase efficiency in the consumption and production of services. Scarce public tax dollars should be used to purchase services that provide the maximum social benefit, not just in terms of health status but also in terms of economic efficiency in the production and consumption of such services.

21. Two other criteria for evaluating taxes are flexibility: the tax system should be able to respond easily (in some cases automatically) to changed economic circumstances; and political responsibility: the tax system should be designed so that individuals can ascertain what they are paying so that the political system can more accurately reflect the preferences of individuals (see Stiglitz 1988, p. 390).

22. Revenue generation is also sometimes included as a separate criterion. The amount of revenues that will be raised depends on the tax base, tax rates, exclusions, deductions, exemptions, tax avoidance, and tax evasion. The more recent taxation literature takes the position that since there are efficiency costs to raising revenues, for a given level of expenditures governments should choose the sets of taxes, rates, and so on that maximize that country’s social welfare objectives in terms of economic efficiency, equity, and administrative feasibility.

23. In a partial equilibrium setting (that is, where the tax on this segment of the economy will not affect any other segment), the excess burden (B) can be defined using the following formula:

$$B = \frac{1/2 * P * Q * T^2}{1/\eta + 1/\epsilon}$$

where P is price, Q is quantity, T is the tax rate, η is the elasticity of demand, and ϵ is the elasticity of supply (Rosen 1995, p. 314).

24. Assuming that there are two commodities, X and Y , that are taxed at rates T_x and T_y , that the elasticities of supply are infinite, and that η_x and η_y represent the elasticities of demand for commodities X and Y , the excess burden is minimized when:

$$T_x/T_y = \eta_x/\eta_y$$

See Rosen 1995, p. 332.

25. There are also likely to be tradeoffs between equity and growth, especially regarding taxes on capital income. Such taxes may be problematic since capital is highly mobile in the global economy.

26. For a conceptual and policy-oriented debate on mandates in the United States see *Health Affairs* 2 (spring) 1994, pp. 7–107.

27. Official development assistance is defined as grants and loans made on concessional terms (that is, having a grant element of at least 25 percent). See World Bank 1996a, pp. 44–45, and Feyzioğlu, Swaroop, and Zhu 1996, p. 1.

28. Some countries have attempted to finance such borrowing out of the most destructive tax of all, inflation. See Musgrave and Musgrave 1976, chapters 33–34.

29. Each of the fifty U.S. states is responsible for regulating private health insurance. However, employer-provided health insurance is often exempt from state regulation because of a federal preemption in the Employee Retirement Insurance Security Act of 1974 (ERISA), which provides for federal oversight of certain employer-provided benefits, including health insurance. Such dual responsibility has precluded states from effectively dealing with a large element of the market segmentation problem. See Chirba-Martin and Brennan (1994).

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Government Financing of Health Care

Bengt Jönsson and Philip Musgrove

In a market economy prices serve three functions: they guide the allocation of resources, they ration scarce goods and services, and they finance the payment of compensation to the factors of production. When the market provides these functions, the question of how to pay for a particular good or service does not arise: consumers buy the product in amounts that are determined by their wants and capacity to pay, and producers deliver those amounts, with prices equilibrating demand and supply.

There are several reasons direct payment by consumers for health care is inefficient and unequitable, creating the need for government interventions and for alternative mechanisms to allocate resources and financing. This paper considers the financing mechanism—that is, the role of government financing of health care. Other issues related to government intervention, such as the optimal allocation of resources in the provision of health care, are discussed only if they directly relate to government financing.

In considering the alternatives for government financing of health care, we focus on three questions: Should government pay for health care? Does it matter which of two general models—social insurance and direct financing from general revenues—is used for public finance? Which taxes should be used to finance health care, and do the types and levels of taxes matter for coverage, benefits, and expenditures? Nearly all the available empirical evidence relevant to these issues is for OECD countries; thus the conclusions do not necessarily apply to developing countries. Wherever possible, the situation in developing countries is discussed separately.

Relations between Finance and Provision of Health Care

There is no necessary connection between the way that health care is paid for and the way that it is delivered; in particular, public finance does not imply public provision. The arguments for and against public provision of health services are very different from those related to public and private financing (Jönsson 1996). It is common to distinguish three relations between funders and providers of health care: the *reimbursement*, *contract*, and *integrated* approaches (OECD 1995). These relations are largely independent of specific taxes and other sources of funds.

Under the reimbursement approach, providers receive retroactive payments for services supplied. These payments may be billed directly to insurers or to patients, who may be partly or entirely reimbursed by insurers. The reimbursement approach, often coupled with fee-for-service payment arrangements, can be found in systems with multiple private and public insurers and multiple (usually private) suppliers, as in the United States. In low- and middle-income countries it is rare for the reimbursement model to be combined with public finance. Chile is an exception, with part of government financing reimbursing private providers retroactively.

The contract approach involves an agreement between third-party payers (insurers) and health care providers aimed at greater control over total funding and its distribution. This approach tends to be found in social insurance systems with predominantly private (nonprofit) providers.

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Prospective budgets are combined with per diem, case mix (diagnostic related group, or DRG), and fee-for-service payments. A variant of this system is used in Brazil, where budgets are set by the state or municipality and providers are paid under a DRG tariff (Lewis 1994). Preferred provider organizations in the United States also use the contractual approach.

In integrated health systems the same agency controls both the funding and the provision of health services. Medical personnel are generally paid salaries, and budgets are the main instrument for allocating resources. Integrated public systems are used in the Nordic countries and until recently were the model in the United Kingdom, and are the common organizational form for ministries of health in developing countries. In many such countries the integrated approach is also used for social security systems, which have their own hospitals and clinics, although there are often also contractual relations with private providers. Health maintenance organizations (HMOs) in the United States are examples of integrated private systems.

Most health care systems include elements of all three systems, just as most have a mix of models for public finance. There also have been significant changes over time. Italy and Spain's public health care systems have moved from a contract approach to an integrated system; while those of New Zealand and the United Kingdom have moved from an integrated system to a contract approach.

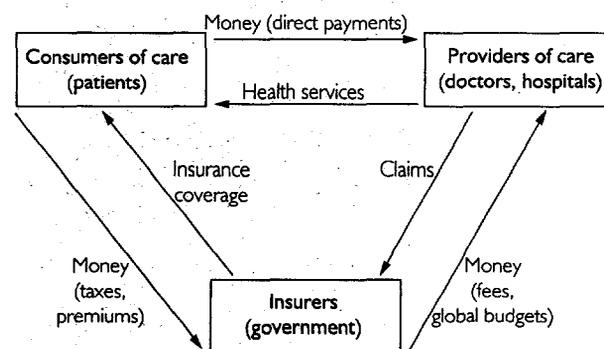
There may be a trend toward two types of relation between funders and providers (Jönsson 1996; van de Ven, Schut, and Rutten 1994). The first type involves a (near) public monopoly in health care funding, through taxes or compulsory social insurance contributions, and competitive contracts with private and public providers. Thus financing and provision may be separated, in what is sometimes referred to as a purchaser-provider split. The second type is an integrated model with competition between different integrated systems (HMOs).

In the first type consumers usually have no (or limited) choice of insurer, but do have a choice of provider. In the second type there is a choice of insurer, but once this choice is made the consumer is tied to the providers linked with that insurer. No health care system in the world offers a free choice of both insurer and provider to everyone in the population.

The role of government differs between these two organizational models. In the first type the government must raise most of the necessary funds, and then contract with the providers. In the second type the government must regulate competition between insurers, or third-party payers, and distribute the public subsidies needed to guarantee universal access to a certain level of health care. Determining the criteria and mechanisms for the distribution of risk-adjusted subsidies is a major problem (Newhouse 1994; van Vliet and van de Ven 1992). Such subsidies are usually differentiated by the consumer's age and sex and by region, taking into account the income of the population served (which affects the demand for services) and the costs of providing care. This approach has been used in Chile for primary health care (which is a municipal responsibility) and is being implemented in Argentina and Colombia.

Insurance is central to any discussion of health care finance. And while there are markets for many kinds of insurance, health care insurance is peculiar because of the nature of the asset being protected—human health rather than nonhuman capital (Musgrove 1996). The introduction of insurance for health care, whether voluntary and private or publicly financed, has consequences not only for the distribution of payments for health care, but also for the allocation of resources to and within the health care system. By introducing a third party that collects revenue and pays providers, health care insurance changes the relation between consumers and providers of health care (unless, as in the integrated model, insurance and provision are combined in a single agency; figure 1). The crucial importance of insur-

FIGURE 1
Economic relations in the finance and delivery of health care



ance and the problems peculiar to it provide one of the rationales for public financing of care, and raise most of the issues discussed here about how best to pay for it.

Should the Government Pay for Health Care?

One major reason for public financing of health care is the provision of public goods, such as programs for medical research, health promotion, vector control, and food and water safety. Such public goods provide benefits that are shared by many people, regardless of whether they pay for them. Thus entirely private markets would yield an inefficient allocation of resources, and government financing (or some other nonmarket alternative) is needed to optimize allocation. The situation is essentially the same for goods with externalities (such as vaccinations), which can be produced and consumed privately but whose consequences—good or bad—affect other consumers regardless of whether they choose to consume those goods. For example, immunization of part of the population also protects the unimmunized.

However, most health care interventions produce private goods, with benefits limited to individual consumers. Arguments favoring public finance of purely private personal health care expenditures differ from those for public goods, for two reasons. The first is the need to finance health care for the poor—that is, people who cannot afford what society considers an adequate amount of health care either out of pocket or by buying insurance. The second affects the entire population, and derives from imperfections in insurance markets that prevent them from providing an efficient and equitable allocation of health care resources.

The relative importance of these two domains—subsidies for the poor and insurance for people who can help finance it—depends on a country's level and distribution of income, and explains much of the difference in health care outcomes between rich and poor countries. Many governments have become the main insurer for personal health care, particularly in high-income countries, and this involvement becomes the quantitatively most important reason for governments to raise money for health care. Because of the complexity of the insurance market, and the fact that both efficiency and equity are involved, such

intervention raises the questions mentioned earlier—whether to establish public insurance, how to organize it, which sources to use to finance it, and with what decisions and consequences for coverage, benefits, and spending.

Financing of individual (personal) health care expenditures

There are three ways to finance individual health care: private individual payments, private collective payments, and public finance.

Private individual payments. These payments are also called out-of-pocket costs. The problem with direct individual payments for health care is that medical expenses are sometimes so high that even people with higher than average incomes cannot afford them. This problem is aggravated by the fact that increased health care costs may coincide with reduced income due to the health problems. In such a situation personal savings may be inadequate and opportunities to borrow for investments in health are limited. Moreover, people with the lowest incomes, who often need care the most, will be excluded from much care if it is financed by direct payments.

This problem does not preclude direct individual payments for health care—which usually account for 10–50 percent of all payments—but it does call for protection against high costs. That means paying for health care collectively, and sharing the financial risk. (There are no general reasons for government to finance small amounts of medical expenditures. The social benefits are small—all but the very poor can afford some medical expenditure—and the social costs may be high.)

Private collective payments (insurance). Because many illnesses occur rarely and seemingly at random, health care expenditures are uncertain as well as possibly high. By pooling a large number of people, insurance reduces the variability of their incomes net of medical expenditure. Health expenditures may be highly variable for a given member of the pool, but average outlays can be predicted fairly well. Thus insurance reduces financial risk for consumers who are risk averse (that is, who have a diminishing marginal utility of wealth or income) and lowers health risks since

care is more accessible. Financial risk is usually not eliminated because coinsurance and deductibles are used to make the insured person share the costs (see Chollet and Lewis and Creese and Bennett in this volume). A policy may require that the insured pay the first \$200 of health care costs out of pocket each year (deductible) and then pay 20 percent of all charges (coinsurance).

This cost sharing is one way to control *moral hazard*—the increased use of services and reduced precaution in taking care of one's health that results when risk pooling leads to reduced marginal costs for services. Moral hazard can manifest itself in two ways, one static and the other dynamic. People with health insurance tend to see doctors more often and to use costly treatments even if the benefits are small (Pauly 1968; Zeckhauser 1970). Doctors also may change their behavior, particularly in fee-for-service systems. Since costs are not borne by the patient, it is easier for doctors to suggest more expensive treatments. The dynamic effect of moral hazard is the incentives it creates to introduce new medical technology for which there would be no market in the absence of insurance (Weisbrod 1991). Both problems derive from the inability of the insurer to monitor service providers and the insured.

Insurance firms incur costs for doing business such as processing claims and marketing. These are called *loading costs*, and they generally make competitive private insurance more costly to administer than uniform public insurance. Many of these costs arise because insurance companies have an incentive to exclude high-risk consumers or to at least identify them so that they can be charged more, but have trouble identifying which risk class people belong to. In the short run this situation of *asymmetric information*—consumers who know their risks better than the insurer does—may benefit high-risk people who, if they know they are likely to need medical care, will be eager to buy insurance. This tendency of the highest risks wanting the most insurance is called *adverse selection*. If insurance companies compensate for it by raising premiums, some low-risk persons may decide not to buy insurance. This can lead to a vicious circle in which only high-risk people remain.

There are several ways to reduce moral hazard and adverse selection, although there is no complete solution for competitive insurers in a situation where information is asymmetric and imperfect (Pauly 1974; Zeckhauser 1970; Spence

and Zeckhauser 1971; and Mirrlees 1971). The optimal insurance contract is a second-best, nonlinear solution with a mix of risk spreading and incentives such as a moderately high deductible and a diminishing coinsurance rate (Blomqvist forthcoming). An alternative is to include "bonus options" (Zweifel 1992) or rebates in the event that the insured does not submit any claims during the year, with the rebate increasing in subsequent years without a claim until a maximum is reached. This approach provides first-dollar coverage but still provides incentives to reduce moral hazard. Few insurance contracts have these features, but many include suboptimal provisions such as an annual ceiling on copayments. Integrating insurance with service provision is another alternative, and removes the incentive for providers to overtreat since they then bear the financial risk.

Public finance: government as insurer. Moral hazard is a problem in any insurance system, but adverse selection and the attempts of insurers to counter it by excluding potential consumers and adjusting premiums are peculiar to private insurance. This is perhaps the main argument in favor of public insurance, which can more easily be made universal and in effect force everyone to share the risks. Public insurance is also often justified by some related problems—of free riders, of excluded population groups, and of collective risks that are largely independent of individual risks.

In a voluntary insurance system people can choose not to insure. This is not a problem if the uninsured can be ignored when they need medical care but cannot pay for it. If they are taken care of anyway—that is, allowed to "ride free"—the incentive to have insurance is reduced. It is difficult to judge how important this problem is. In Switzerland most families have insurance despite the fact that it is not compulsory in all cantons. Cultural tradition probably plays a large role; and if most people make an effort to take care of themselves, there is room for generosity to those who do not. It is often suggested that private insurance be made compulsory in order to avoid the free-rider problem. But doing so would raise another problem—which sanction to use for people who do not comply—and in any case is infeasible for poor populations.

Exclusion is the opposite of the free-rider problem. People may want insurance but cannot buy it because of low income or high risk. One solution may be to give them a voucher

(subsidy) so they can buy private insurance. The practical problems of calculating and administering such subsidies may be considerable, making public insurance simpler—again, particularly in countries with large poor populations. The elderly, with high risks for illness and related expenditures, pose a particular problem, and some countries have created public insurance just for them. The need to prepare for health expenses in old age can be partly solved through a funded system in which each insured pays into a fund that covers future needs (in contrast to a pay-as-you-go system, where each person's contribution goes toward the current expenses of all members).

This approach also has its problems. Knowledge about the future incidence and prevalence of illness and potential treatments is limited. Thus it is difficult, if not impossible, to calculate the premiums that 20-year-olds should pay for health care that they will receive in fifty years. One solution to such collective risks is for the government step in as a re-insurer. The problem with life-long insurance can be seen in countries where private insurance funds go bankrupt when their members become older, and have to be merged into funds with younger members. (This problem also affects pay-as-you-go public insurance, even in middle-income countries, as the population ages.) An alternative is for voluntary insurance to be restricted to a certain age group, for example below 65. The government must then finance care for people over that age. But with increasing life expectancy and the concentration of costly illness at advanced ages, this approach means that the government will end up paying for the bulk of health care.

It is important to distinguish between actuarially fair insurance, as provided through risk pooling, and government social insurance programs. Actuarially fair insurance is provided through markets in which buyers voluntarily pay for protection against infrequent high medical expenditures whose probabilities can be statistically determined, with premiums adjusted accordingly (see Chollet and Lewis in this volume). Social insurance programs are provided by government, often involve an income transfer between population groups for reasons unrelated to health, have a defined set of eligibility rules, and are partly or wholly financed through taxes or compulsory insurance premiums that need not be actuarially fair. These differences raise questions about the best combination of private and public insurance,

and in particular how public finance for health care affects the private market.

Public finance: government subsidizes but does not insure.

It is also possible for governments to finance health care without acting as insurers, by subsidizing private insurance through the tax system. Employers often pay a significant portion of workers' health insurance premiums: in the United States, for example, about 80 percent of the premiums for private health insurance are paid by employers (Phelps 1986). If employers are allowed to deduct these costs from the income on which they pay corporate taxes but employees are not taxed on the value of the premium—that is, the cost of the insurance is not treated as income to either the company or the worker—then the insurance is partly financed by a subsidy or “tax expenditure” equivalent to the tax that the government does not collect. The same situation occurs if individuals' private health insurance premiums are tax deductible, or if employers pay directly for health care (self-insurance). This kind of public subsidy is not used much outside the United States, and there are few estimates of its cost. But in Brazil in the early 1980s it appears to have accounted for \$1 billion in health care spending, about a quarter of what the government spent (Lewis 1994).

Paying for health care with employment-related tax deductions can solve some of the problems of private insurance, in that adverse selection is limited by contracting in large groups rather than one person at a time, lowering administrative costs. However, this approach introduces two other problems. First, employees may not recognize that they are paying for their insurance, at least partly, through lower wages. This leads to higher than optimal insurance coverage (overinsurance) and thus higher health care expenditures. The consequences for total health care expenditures can be substantial. Phelps (1986) estimates that employer group health insurance premiums in the United States would be about 45 percent lower if the tax subsidy were not in effect, even though marginal tax rates are only 25–35 percent. There are also welfare losses due to employment choices and wage levels, which are affected by the subsidized excess insurance (Feldman and Dowd 1991; Feldstein 1973; Manning and others 1987). Second, the size of the subsidy increases with the marginal tax rate; if taxes are progressive, the higher subsidies go to people with higher incomes, which is inequitable.

Total health expenditures and government shares

Total and public financing of health care in different regions are shown in table 1. The public share of health care expenditures is at least 50 percent in every region except Asia. The share is highest in rich countries, which also have the highest total expenditures. Private financing dominates in low-income countries, and direct out-of-pocket payments are more important than private insurance as a source of revenue.

A similar, though less clear, picture emerges for OECD countries (table 2). The countries with the lowest incomes also have the lowest shares of public finance. The United States is an exception, having the lowest share of public finance of all OECD countries. By contrast, the government provides nearly all health care resources in Iceland, Norway, Sweden, and the United Kingdom.

Since annual public spending on health typically reaches \$1,000–2,000 per capita in rich countries, the questions of how to organize and pay for care are highly relevant. In low-income countries the amounts at stake are much smaller, both absolutely—\$10 per capita per year in many African countries, and less than \$100 in most of Asia and Latin America—and as a share of income, but it is harder to raise revenue and a larger share of the population is too poor to afford any significant amount of private health care. A better way to compare rich and poor countries may be to estimate subsistence income and compare total and public health spending with the remaining nonsubsistence

or discretionary income. On this basis public efforts to finance health care in poor countries would probably look larger than in OECD countries, making issues of organization and sources of revenue just as important, if not more so.

Which Model for Public Finance?

As noted earlier, there is a basic distinction between tax-based (directly financed) and insurance-based public health care systems. In tax-based systems general revenue taxes are the main source of finance, and the government usually acts as the main provider of health care. Insurance-based systems are financed mainly through payroll taxes, up to a ceiling on wages at which point the marginal tax rate becomes zero. The number of insurance agencies varies by country, from one in most Latin American systems, to several in Europe, to more than 200 in Argentina. Directly financed systems also provide the protection that characterizes insurance, but the insurance is implicit, and individuals need not be explicitly affiliated to receive benefits.

There is also considerable variation in the connection between finance and provision. Social security institutes operate their own clinics and hospitals in most Latin American countries, but contracting with private providers is the norm in Argentina, Brazil, and most of Europe. In most cases these institutes oversee nonprofit institutions and independent physicians. Different systems use different methods to reimburse providers for services; some-

TABLE 1

Global health care expenditures by region, 1990

Region	Share of world population (percent)	Total health expenditure (billions of U.S. dollars)	Health expenditure as percentage of world total	Public health expenditure as percentage of regional total	Share of GNP spent on health (percent)	Per capita health expenditure (U.S. dollars)
OECD countries	15	1,483	87	60	9.2	1,860
Transition economies of Europe	7	49	3	71	3.6	142
Developing countries	78	170	10	50	4.7	41
Latin America and the Caribbean	8	47	3	60	4.0	105
Middle East and North Africa	10	39	2	58	4.1	77
Other Asia and islands	13	42	2	39	4.5	61
India	16	18	1	22	6.0	21
China	22	13	1	59	3.5	11
Sub-Saharan Africa	10	12	1	55	4.5	24
World	100	1,702	100	60	8.0	329

Source: World Bank 1993.

TABLE 2

Public and per capita health care spending, OECD countries

Country	Public financing as percentage of total	Total health spending per capita ^a	GDP per capita ^a
Australia	69	1,606	18,970
Austria	63	1,965	20,216
Belgium	88	1,653	20,184
Canada	72	2,010	20,608
Denmark	83	1,362	20,784
Finland	75	1,357	16,362
France	78	1,866	19,169
Germany	74	1,869	19,720
Iceland	84	1,577	19,402
Ireland	76	1,201	15,202
Italy	71	1,561	18,698
Japan	79	1,473	21,246
Mexico	58	395	7,484
Netherlands	78	1,641	18,570
New Zealand	77	1,226	16,424
Norway	95	1,604	21,980
Portugal	56	938	12,313
Spain	79	1,005	13,572
Sweden	83	1,348	17,435
Switzerland	72	2,294	23,961
Turkey	58	223	5,271
United Kingdom	84	1,211	17,560
United States	44	3,516	24,629

Note: Data are for 1994 or latest available year.

a. Expressed in purchasing power parity dollars.

Source: OECD Health Database 1996.

times it is fee for service, but contracts with negotiated prices are more common. Another difference between the two models is that while tax-based systems are always administered directly by the financing agency (usually a ministry of health), the administration of social insurance is sometimes taken care of by independent government-regulated bodies (such as Germany's *Krankenkassen* and France's *mutuelles*).

Dependence on wage taxes means that social insurance is paid for by workers (and possibly employers) rather than the general public. Tax-based or direct systems, by contrast, are in principle universal. From a strictly financing perspective, the same problem has to be solved whether the financing mechanism is taxes or compulsory insurance contributions: the state obtains involuntary payments from members of society, and these payments are unrelated to individual benefits. In terms of coverage, efficiency, and equity, however, the two systems can differ substantially.

In practice, the distinction between the two models is not so sharp as this discussion suggests. A tax-based system can obtain part of its financing from the social insurance system (as in Sweden), and part of the services can be provided by private contractors (for example, general practitioners in Denmark and the United Kingdom).

Moreover, social insurance systems often receive complementary financing from general revenues (as in Switzerland), and the insurance system can be supplemented with other services directly paid for and operated by the government (for example, the Veterans Administration in the United States). In extreme cases such as Brazil and Costa Rica, the distinction between the two systems ceases to exist because coverage is extended to (nearly) all non-contributors, and wage taxes become just one of the sources of revenue. This extension of coverage, which was large and rapid in both countries during the 1980s, effectively merges social insurance with the existing tax-financed system.

Changes in other countries have also blurred the distinction. Tax-based systems have introduced a split between purchaser and provider, as in the United Kingdom, and insurance-based systems have introduced global budgets in order to control costs, as in France and Germany. In the Czech Republic a purely tax-based system has been supplemented with social insurance funds that are supposed to compete for clients, with a general fund acting as the insurer of last resort. But the use of general revenue taxes has not disappeared, because the government now buys insurance for people who do not contribute through what is effectively a wage tax. Because this change was introduced together with a move from salaried providers to largely fee-for-service medicine with inadequate regulation, one of the results has been an explosion of costs. That outcome, however, is not specific to a social insurance or a tax-based system. The same logic, of competing but regulated insurers financed partly by a uniform wage tax and partly by subsidies for the poor and the unemployed from general taxation, characterizes current reforms in Argentina and Colombia.

Even when the two models remain distinct, any country can use both at once. This is the typical Latin American model, with both a ministry of health and a social security institute, where in principle the institute serves only its contributors but the ministry offers services to the entire

population. In practice the users of ministry services are determined by the quality of services and by the existence of private insurance, as well as by costs to consumers, and the same people may draw on a variety of providers and sources of finance—paying out of pocket for drugs and inexpensive consultations, using public facilities for hospitalization, and even covering some services with private insurance. This complexity also characterizes South Africa, where the tax-based system finances care for the poor majority, social insurance covers middle- and high-income workers, and there is also private insurance. Providers in this system tend to work with only one financing system and so are almost as sharply segregated as the sources of funding. Such overlapping patterns make it difficult to describe “coverage” consistently, and the coexistence of two or more financing systems makes it almost impossible to judge which (if any) of them works best.

Public spending patterns under the two models

As noted, the public share of health spending rises and the private share falls as country income grows, and (except for the United States) rich countries are more alike than poor countries in this respect. The situation is much less homogeneous when the comparison is between countries with tax-based and social insurance systems. And low-income countries are more similar than middle- and high-income countries in shares of spending on the two models.

The share of public health care spending that is financed directly or by taxes (that is, not through social insurance) in low- and middle-income countries for which estimates are available is shown in table 3. In many countries all public spending is tax-based and social insurance does not exist; nearly all these countries are quite poor. This is a natural consequence of a small formal employment sec-

TABLE 3
Public health care financing in various countries, circa 1990
(percent)

Region/country	Share of public health spending financed directly or by taxes	Public financing as percentage of total	Income per capita ^a	Total health spending as percentage of GDP
<i>Sub-Saharan Africa</i>				
Cameroon	68	38	2,400	3
Ethiopia	100	61	370	4
Kenya	56	63	1,350	4
Madagascar	76	50	710	3
Malawi	62	58	800	5
Mozambique	100	75	600	6
Nigeria	100	44	1,360	3
Sierra Leone	52	71	800	2
Tanzania	100	68	570	5
Zimbabwe	65	52	2,160	6
<i>Asia</i>				
Bangladesh	100	44	1,160	3
Bhutan	100		620	2
China	0	60	1,680	4
India	21	22	1,150	6
Indonesia	67	35	2,730	2
Korea, Rep. of	12	41	8,320	7
Malaysia	100	43	7,400	3
Myanmar	100			3
Nepal	44	49	1,130	5
Pakistan	100	53	1,970	3
Papua New Guinea	100	64	1,830	4
Philippines	80	50	2,440	2
Sri Lanka	83	49	2,650	4
Thailand	90	22	5,270	5

tor, which makes it difficult to raise significant revenue from wages and salaries. Even where such taxes can be collected, they are often pooled with other tax revenues rather than used separately to finance social insurance. (Social insurance schemes limited to civil servants are a more common exception, and these exist even in some poor countries.) There are few countries in which all public health spending goes through social insurance; even in countries that rely heavily on insurance there is usually some direct, tax-based expenditure—if only for those public goods that cannot be associated with individuals and therefore cannot be insured.

The countries that rely most on social insurance—Bolivia, China, the Czech Republic, Denmark, Israel, the Republic of Korea, Mexico, the Netherlands, Sweden—are a heterogeneous group. In some, social insurance dominates because almost everyone can pay wage taxes and it is public policy to use that model to finance health care. In oth-

ers, social insurance coverage is lower but those covered have higher than average incomes, and tax-based finance may cover as much or more of the population but cost very little per person. In general, shares of finance are unrelated to shares of coverage or utilization of services; on the contrary, when both systems operate in a country, social insurance usually spends more per person. This outcome simply reflects the fact that formal employment pays wages well above the average income, at least in low-income countries.

At middle and high incomes there is great variation in how public spending is divided. In some countries one model or the other dominates, while in others substantial public resources flow through both the direct and the social insurance channel. Both systems are used in Australia, Latin America, some countries in Eastern Europe and the Middle East, and the United States. There are two reasons to believe that this is an inefficient way to organize government finance

TABLE 3

Public health care financing in various countries, circa 1990 (continued)

(percent)

Region/country	Share of public health spending financed directly or by taxes	Public financing as percentage of total	Income per capita ^a	Total health spending as percentage of GDP
<i>Eastern Europe, Middle East, and North Africa</i>				
Czech Republic	5	85	6,280	6
Hungary	84	83	6,080	6
Turkey	58	38	4,840	4
Tunisia	63	67	4,690	5
<i>Latin America and the Caribbean</i>				
Argentina	45	61	5,120	10
Bolivia	17	29	2,170	6
Brazil	50	43	5,240	6
Colombia	43	57	5,460	5
Costa Rica	19	82	5,100	9
Dominican Republic	77	34	3,080	6
Ecuador	62	63	4,140	4
El Salvador	32	30	2,110	6
Guatemala	61	33	3,180	5
Jamaica	100	35	3,670	9
Mexico	15	56	7,170	5
Nicaragua	100	62	2,550	8
Panama	41	60	4,910	9
Paraguay	31	25	3,420	4
Peru	59	34	3,130	3
Uruguay	81	76	6,670	8
Venezuela	75	47	8,120	4

a. Expressed in purchasing power parity dollars.
Source: Musgrove 1996.

of health care, and that it is advantageous to have a single government program. First, it is easier to control the total flow of resources if there is only one channel (Reinhardt 1992). Second, having one channel reduces the risk of suboptimization through incomplete coordination between the different systems; for example, Sweden's combination of an open-ended reimbursement system for prescription drugs and global budgets for hospital care promotes a transfer of costs from inpatient to outpatient care. To avoid such problems, governments must take a comprehensive view of their role in financing health care.

The share of public financing in total financing differs among different kinds of health expenditures. The shares of drugs and hospital care in total health spending in OECD countries are shown in table 4. Such detailed data are scarce in developing countries, but the public share in hospital financing is generally high and the public share in paying for drugs is rather low. The lower is the share of public expenditure in the total, the more it is likely to be concentrated on hospital care, independent of whether the financing is tax-based or social insurance. A large share of out-of-pocket spending typically goes for drugs, particularly where private insurance is nonexistent or covers only a small share of the population. Differences in reimbursement for different health care services can encourage the use of services—such as hospital care—that are not necessarily the most cost-effective.

TABLE 4

Public expenditures for drugs and hospital care, selected OECD countries, 1983 and 1993
(percentage of total spent on drugs and hospital care)

Country	Drugs		Hospital care	
	1983	1993	1983	1993
Austria	29	63	42	36
Belgium	54	60	66	68
Canada	7	27	88	86
Denmark	44	49	100	100
France	n.a.	62	n.a.	91
Germany	68	61	85	85
Iceland	64	69	100	100
Italy	72	49	85	85
Netherlands	62	94	84	84
New Zealand	80	66	95	n.a.
Sweden	72	69	n.a.	n.a.
United Kingdom	65	63	n.a.	n.a.
United States	7	12	53	57

Source: OECD Health Database 1995.

At least in high-income countries, coverage by publicly financed care is unrelated to whether one or both models are used or in what proportions, because coverage is usually almost universal. Among OECD countries the only exceptions are Mexico (which has much lower income than the other members), the Netherlands (where high-income people do not pay the contributions but buy private insurance), and the United States (which has two substantial public programs, one of each type, limited to the elderly and the poor). Coverage is harder to estimate in poorer countries, and there may be some relation between beneficiaries of public finance and which model or combination of models is followed; data are insufficient to support any conclusion on this point.

Features and failings of the two systems

The great variation among countries, and even within them, strongly suggests that neither the tax-based nor the social insurance model is a systematically superior way of paying publicly for health care. It is easy to list the theoretical virtues of either system: for example, in principle direct, tax-based finance is easier to extend to everyone, and social insurance makes people (at least those with formal employment) contribute proportionally to their ability to pay. But these potential advantages are inconclusive without an examination of the specific taxes used to finance direct payment, or the coverage and benefits under one scheme or the other. And the theoretical benefits of one model are lost when the two forms of financing are used together, which is common. This is why there is no discernible pattern to public health care financing in high-income countries. The greater homogeneity among low-income countries that depend on direct finance results from the difficult task of raising sufficient revenue from wages and salaries to finance care for any but a small share of the population.

One complexity of mixed systems is that there are many partial public health insurance programs in various countries that are limited to different groups or different treatments. Such programs illustrate several issues in the choice of public financing mechanisms and other characteristics of public payment for health care. The best-known subsystems are Medicare and Medicaid in the United States. Medicare is a uniform federal program that provides compulsory

hospital insurance to the elderly (part A) as well as optional supplementary medical coverage to which nearly all elderly subscribe (part B). Medicaid is a program operated by the states, with matching federal dollars but different criteria and benefits from one state to another, that finances health care for poor households that already receive benefits from either or both of two welfare programs unrelated to health. Some other countries also link preferential health insurance for the poor to an existing non-health welfare program, to avoid the need for another targeting mechanism (Grosh 1992).

Contributions. Medicare part A is financed through a 1.45 percent addition to each worker's social security tax for both employers and employees. Thus it is clearly social insurance, differing from most such programs in other countries only in its limitation to the elderly. Part B is voluntary and financed by premiums, just as with private insurance, except that about 75 percent of the premium is subsidized with general taxation—which makes it a directly financed system.

Users pay a deductible and coinsurance, which in part A increases with increased expenditures. This is contrary to the recommendation derived from the theory of optimal insurance, of a large deductible and decreasing copayments to provide protection against catastrophic financial risk rather than "first-dollar" coverage (Arrow 1963). In part B copayments are constant, which also leaves consumers at severe financial risk. This lack of catastrophic coverage has created a market for "Medi-gap" private insurance, so the system operates with all three forms of collective financing, which is inefficient (Blomqvist and Johansson 1996).

Medicaid is financed by state general taxation with matching federal grants. It has no deductibles or proportional coinsurance, but some nominal copayments. There is catastrophic protection, but no incentives to control moral hazard or costs.

Benefits. Eligibility for Medicare depends on age or, for some non-elderly, on health status (such as permanent disability). In addition to beneficiaries of the two welfare programs, Medicaid enrollment can be extended to other medically needy groups. Thus eligibility depends on income and wealth. As a result patients may become eligible for Medicaid by spending down their assets, and so have a dis-

incentive to save and an incentive to dispose of wealth through gifts. Medicaid covers nursing home costs, which are not covered by Medicare. People who need nursing home care, and who do not have private funds or insurance, must shift to Medicaid for coverage.

Provider reimbursement. Medicare and Medicaid were enacted within a system of private insurance, and initially copied the way private insurance companies reimbursed providers. However, unexpected large cost increases have led to changes in the way providers are paid, by making them share part of the financial risk through diagnostic related group-based payment for hospitalization and through capitation (HMO enrollment). Proposals have been made to introduce global budgets to control doctors' fees. In Germany such budgets have been used since 1976 for hospital care, ambulatory care, and drugs, and in the United Kingdom the system of indicative drug budgets is based on the same idea.

As this summary indicates, non-universal public health finance may respond to important needs and attempt to combine equity with control over expenditures as part of overall efforts to resolve how government finances health care. In every country the elderly and the poor are likely to be the neediest groups, although often in different senses of "need"—the elderly need more care, independent of their financial status, and the poor need more help paying for care, independent of their health status. It is partly the desire to satisfy different kinds of need that makes the choice of revenue sources and financing mechanisms so important and complicated.

Do the Type and Level of Taxes Matter?

The two main issues concerning the combination of taxes (and compulsory social insurance contributions) used to finance health care are equity and efficiency. For equity, the important distinction is between financing and the use of services. For efficiency, there is similarly a difference between how revenue is raised and how it is used. The choice of taxes may create inefficiency outside the health system, through welfare losses associated with obtaining the funds; or inside the system, through the effects of taxes on the behavior of providers and consumers.

General principles on health care and fiscal policy

Since health care is just one of many uses for public revenue, it is important to consider whether public finance theory offers any principles about how to raise and spend money for health. This question is applicable whether health is paid for from the same budget as all other uses, or there are sub-budgets defined by specific taxes that are earmarked or assigned to specific expenditures.

The benefit principle. The benefit principle states that, unless taxation is explicitly used for redistribution, the cost of any public service should be borne by those who use it (Musgrave 1959). This principle is similar to what happens in a market—people pay in proportion to their consumption—and can be applied to all individual or private goods in health care. It is harder to apply to public goods, for which individual consumption is poorly defined and in any case difficult to measure. If it is assumed that everybody consumes the same amount, then people should pay according to their marginal valuation of the public good. However, it is highly questionable whether even public health activities and emergency services can be considered public goods of which everybody consumes the same amount. If consumers are heterogeneous, everybody should theoretically pay an individual tax. The information needed for such an approach simply is not available at any cost, however, so the benefit principle cannot be followed exactly where public goods are concerned.

Since the incidence of disease is to a large extent random and everyone is at risk of needing health care, the benefit principle suggests that the tax base for health care financing should be as broad as possible to ensure that no one escapes contributing. This is an argument against financing health care with, say, tobacco or alcohol taxes, which have a rather narrow base. The fact that there may be externalities associated with behaviors such as drinking or smoking is an argument for taxes to correct the behavior, but these taxes may be used to finance other government expenditures.

The ability-to-pay principle. At the opposite extreme from the benefit principle (paying in proportion to one's use of a service) is the notion that people should pay in propor-

tion to their ability, which in practice largely means in proportion to their income. To the extent that the need for and use of health care are not highly correlated with income, this principle favors subsidies from the rich to the poor, and probably corresponds to the most widely supported notion of how to finance health care (van Doorslaer, Wagstaff, and Rutten 1993). The notion of financing according to ability to pay can be interpreted in terms of both vertical equity—individuals with a greater ability to pay ought to pay more regardless of their health—and horizontal equity—individuals with the same ability to pay ought to pay the same regardless of their health. Because income differences can be large, vertical equity and progressivity in health care financing have been studied more thoroughly. The progressivity of a health care financing system refers to the extent to which people's payments for health care rise as a share of their income when their income rises.

Regardless of how it is financed, any insurance system transfers resources from the healthy to the sick, but it does not necessarily make the rich subsidize the poor—depending on the sources of revenue and patterns of health care utilization, the opposite can happen. It is difficult to design health finance systems, partly because both types of subsidies usually seem desirable for equity reasons but they need not be consistent. And neither is consistent with the benefit principle (paying for what one consumes).

Earmarking, or linking specific revenues to specific expenditures. For the most part there is no reason to relate a specific tax to a specific area of public expenditure. It is more rational to decide the optimal level of government spending and to decide how best to raise the necessary revenue without any expenditure being tied to any source (Musgrave 1959). There is nothing unique to health about the choice of financing mechanism: the same considerations apply to all areas of government spending. The choice of the tax base—which taxes or contributions, at what levels and in what proportions—is a problem of public finance, not health economics.

However, it is common for social insurance systems to be financed primarily by earmarked taxes on wages and salaries, where the contribution is thought of as paying the insurance premium even though the premium differs according to income (rather than representing a market price).

Moreover, in recent years there has been renewed interest in earmarked (hypothecated) taxes for health care (Jones and Duncan 1995). This interest has been sparked by concerns about underfunding of health systems, as a result of the general public finance problems that most governments experience. The immediate questions are whether earmarking in fact makes more funds available, and whether it has other effects on the equity and efficiency of health care spending.

Equity aspects of publicly financed health care

Defining equity is not easy. Applied research on equity in the delivery of health care often focuses on horizontal equity—that is, whether people with equal needs (in terms of morbidity) are treated the same (in terms of utilization) regardless of income (Wagstaff and van Doorslaer 1993). A major argument for public financing of health care is to guarantee everyone, including people who are too poor to buy private health insurance or to pay out-of-pocket for health care, access to a minimum package of health services. People with the lowest incomes and wealth are generally in the worst health and thus have a greater need for services. One reason is that both health and income are often low among the elderly. Thus equity aspects are central to discussions of health care financing for individual services.

The equity argument may be less important for financing of public goods. Interventions to improve public health, such as sanitation and vaccination programs, generally benefit the entire population. Depending on the program, the benefits may be more or less important for some groups. It can be argued that the poor generally gain the most, since people with more money can compensate by substituting private for public expenditures. On the other hand, health promotion activities may be of particular benefit for people with more education and greater capacity to benefit from such activities. Such groups are often the first to change their behavior to improve their health, as with reduced smoking and increased physical exercise.

Distribution of health care expenditures in the population.
The distribution of health care expenditures in a given year is highly concentrated among a few consumers. In the United

States in 1980, 5 percent of the population accounted for 55 percent of health care expenditures (table 5). In a similar study for France in 1980–81, 5 percent of the population consumed two-thirds of health care expenditures, while 25 percent had no health care consumption at all (OECD 1987). A Swedish study on the consumption of prescription drugs found that 3.8 percent of consumers accounted for half of all costs, and that one-third of the population had no costs for prescription drugs.

These large differences in per capita expenditures are related to age and the risk of mortality. In Sweden, for example, annual per capita health care expenditures are closely linked to whether a patient died during the year or survived (table 6). This trend is indicative of two health spending characteristics in high-income countries: the tendency to consume more health care with advancing age (at least after infancy) and the tendency to have very large expenditures in the final year of life.

In retrospect this distribution of spending looks extremely inefficient, because some people die despite having consumed large amounts of care. But it is uncertainty about outcomes, not simply wastefulness, that leads to this result. Whether the distribution is equitable is hard to say, but the increasing expenditure with age does reflect increasing need as health deteriorates. In poor countries neither tendency is likely to be so marked, because fewer resources are available and people are more likely to die without receiving substantial care.

The distribution of health care expenditures is neither evidence of inequity nor a measure of service benefits. If it were possible to examine consumption over a lifetime instead of within a single year, the variation between people would

TABLE 5
Distribution of health care expenditures, United States, 1970, 1977, and 1980
(percentage of total expenditures)

Population expense group	1970	1977	1980
Top 1 percent	26	27	29
Top 2 percent	35	38	39
Top 5 percent	50	55	55
Top 10 percent	66	70	70
Top 30 percent	88	90	90
Top 50 percent	96	97	96
Bottom 50 percent	4	3	4

Source: Berk, Monheit, and Hagan 1988.

be much smaller, at least so long as they were of the same age. What we really need to know to answer questions about equity and efficiency is the lifetime consumption of health care and the resulting health status at different ages, and how this differs according to income and other factors. But improvement in health status over time and rapid technological change in health care make such comparisons meaningless for people of different ages.

Income-related equity in the use of services. Another way of looking at the distribution of health care expenditures is to look at consumption in different income brackets. A study of the United Kingdom and the United States found that about one-tenth of health care spending occurs in each income decile in both countries (table 7). This is rather surprising given the differences in health care financing and provision between the two countries: both income distribution and access to health insurance coverage are less equal in the United States.

In other words, in rich countries health care consumption is almost independent of income, thanks to near-universal coverage of insurance and especially of public insurance. In low- and middle-income countries with a less even distribution of income, the lowest deciles are unable to afford much health care, and insurance coverage is typically much less complete. For both reasons there are usually sizable differences in health care spending between high- and low-income earners. The poor are naturally more sensitive to prices than the rich, which greatly limits their use of full-cost private services (Gertler and van der Gaag 1990)

TABLE 6
Annual health care expenditures per capita in different age and mortality groups, Sweden, 1994
 (kronor)

Age group	Survivors	Died during the year
0-4	9,900	410,000
5-14	4,000	133,000
15-44	7,000	186,000
45-64	9,300	174,000
65-74	16,000	141,000
75-84	22,000	93,000
85 and above	23,000	61,000
Total	9,200	106,000

Source: SOU data.

and makes them more dependent on public subsidies. Although such subsidies are seldom enough to equalize health care consumption across income levels, they can transfer substantial amounts of real income to the lower-income deciles when coverage by public programs is high.

Van Doorslaer and Wagstaff (1993) used two methods to measure income-related inequity in ten (mainly European) countries. The first method involved ranking individuals by income and comparing the cumulative health care expenditure (standardized for differences in morbidity) across income groups. The second method controlled for morbidity by using regression analysis to test for significant income effects on health care received. They found that income-related inequity exists in most countries, and that it usually arises from the effect of income on the *amount* of care received by people who use at least some health care. In fact, the effect of income on the *probability* of seeking care was significant in only one country (Denmark). This result almost surely does not apply to developing countries, where income is a major determinant of whether people obtain care—not only because of the price of care, but because poor people often live far from the nearest doctor or clinic (particularly in rural areas), and travel time and cost are major deterrents to seeking care (Gertler and van der Gaag 1990).

Data on the distribution of health care expenditures in the population are important to understanding the opportunities and limitations for financing health care through direct payments, and for assessing the need for government

TABLE 7
Distribution of health care expenditures (consumption) by income decile, United Kingdom and United States
 (percent)

Income decile	United Kingdom	United States
1	9.1	8.9
2	11.0	10.3
3	11.2	8.8
4	10.4	9.6
5	10.3	9.5
6	9.5	9.2
7	9.5	9.3
8	8.8	10.8
9	9.7	11.7
10	10.4	11.9

Source: Gottschalk, Wolfe, and Haveman 1989.

support to health insurance, to compensate for differences in age-related needs and in incomes. They are less informative about the appropriate taxes to use to finance public health care, although the fact that expenditures usually rise with age carries some important implications for how social insurance is financed, particularly as to whether it is funded or pay-as-you-go. Systems with pay-as-you-go financing are vulnerable to changes in age composition as the population ages; funded systems escape that problem but are vulnerable to cost-raising technical change in medicine. To have a better idea of which taxes are most appropriate, we need to examine the taxes that are used and who pays them.

Distribution of income and tax payments: progressivity of financing. The way health care is financed affects people in a number of ways, and the distributional consequences are difficult to assess. An increase in direct payments may reduce the use of health care, which probably has a greater effect on the poor, who are sick more often. Higher direct payments also affect the distribution of disposable income, and thus other types of consumption. Depending on how taxpayers are affected, increased public financing can also have several consequences.

In the absence of consensus on how much more the better-off should pay than the worse-off, health care systems can be judged by the progressivity of the taxes used to finance them. A variety of indexes have been proposed to measure progressivity (Lambert 1989), the most common of which is Kakwani's index (1977). This index measures the extent to which a tax system departs from proportionality. The cumulative proportion of the population, ranked according to pretax income, is plotted against the cumulative proportion of tax payments to obtain the tax concentration curve. A zero index means the tax is exactly proportional to income; positive values indicate progressivity (the rich pay a larger share of taxes than their share of income) and negative values, regressivity.

Detailed data on the mix of funding sources are available for only a small number of countries (table 8). There are large differences among countries in the composition of the taxes used to finance health care. France, the Netherlands, and Spain rely on social insurance contribu-

tions; such contributions are negligible in Denmark, Ireland, Portugal, and Switzerland. The balance between direct and indirect taxation is less varied.

The distinction among direct taxes, indirect taxes, and social insurance contributions is important, but further distinctions are possible. Direct taxes can be applied at the central, regional, and local levels. Indirect taxes can be general, such as a value added tax (VAT), or on particular goods, such as an excise tax. Social insurance contributions can be paid by employers or employees and be proportional or have an upper limit (and thus be regressive). Different taxes and their design have different consequences and must be assessed against the objectives of health care and fiscal policy.

Kakwani progressivity indexes for thirteen countries are shown in table 9. Direct taxes are the most progressive, and indirect taxes are regressive, in all thirteen countries, and are especially regressive in Spain and the United Kingdom. Social insurance financing is regressive in Germany and the Netherlands (which explains why total public finance is slightly regressive in those countries) but is otherwise progressive, although much less so than direct taxes. Private direct (out-of-pocket) payments are strongly regressive, as is to be expected since medical care needs are largely independent of ability to pay. Because it spreads risk across income groups, private insurance is less regressive or even progressive, so total private payments are more equitably distributed than those paid out of pocket.

TABLE 8
Mix of public funding in OECD health care systems
(percentage of total public funds)

Country	Direct taxes	Indirect taxes	Social insurance	Total public	Public financing as a share of total (percent)
Denmark	58	42	0	100	83
France	0	3	97	100	78
Ireland	38	52	10	100	76
Italy	25	28	47	100	71
Netherlands	3	6	91	100	78
Portugal	29	64	7	100	56
Spain	10	8	82	100	79
Switzerland	78	18	4	100	72
United Kingdom	44	36	20	100	84
United States	52	15	33	100	44

Source: van Doorslaer, Wagstaff, and Rutten 1993.

TABLE 9

Progressivity of components of health care financing (Kakwani indexes), selected countries

Country, year	Direct taxes	Indirect taxes	General taxes	Social insurance	Total public	Private insurance	Direct payments	Total private	Total payments
Denmark, 1987	0.062	-0.113	0.038	0.000	0.038	0.031	-0.265	-0.241	-0.003
Finland, 1990	0.128	-0.097	0.056	0.090	0.060	0.000	-0.246	-0.246	0.017
France, 1989	0.000	0.000	0.000	0.094	0.094	-0.186	-0.228	-0.218	0.012
Germany, 1988	0.251	-0.092	0.112	-0.081	-0.040	0.093	-0.103	-0.022	-0.037
Ireland, 1987	0.267	n.a.	n.a.	0.126	n.a.	-0.021	-0.147	-0.096	n.a.
Italy, 1991	0.161	-0.112	0.038	0.112	0.075	0.177	-0.077	-0.057	0.045
Netherlands, 1992	0.200	-0.089	0.071	-0.129	-0.100	0.083	-0.038	0.043	-0.070
Portugal, 1990	0.218	-0.035	0.060	0.185	0.072	0.137	-0.242	-0.229	-0.045
Spain, 1990	0.214	-0.152	0.048	0.050	0.049	-0.012	-0.212	-0.190	-0.003
Sweden, 1990	0.053	-0.083	0.036	0.010	0.030		-0.240	0.027	0.029
Switzerland, 1992	0.172	-0.072	0.131	0.038	0.113	-0.270	-0.403	-0.319	-0.165
United Kingdom, 1992	0.284	-0.152	0.046	0.187	0.079	0.077	-0.223	-0.092	0.052
United States, 1987	0.192	-0.065	0.124	0.019	0.090	-0.175	-0.461	-0.288	-0.131

n.a. is not available.

Source: Wagstaff, van Doorslaer, and others 1996.

Overall, the way health care is paid for in these countries is nearly proportional to incomes. Since consumption of care is relatively independent of income, there is usually a substantial net transfer from the rich to the poor when benefits are compared with payments. The exception is Switzerland, where a large share of care is financed privately and regressively. Otherwise, the results do not seem to depend much on the exact combination of private finance and taxes.

These findings probably do not all carry over to developing countries. Out-of-pocket spending in these countries is undoubtedly regressive, as in high-income countries—in fact, it is generally more so, since it may be the only form of spending for the very poor, who do not have access to public subsidies. Private insurance spending is highly progressive because only the rich buy it, directly or through their employers. Indirect taxes, which the poor do not escape, are slightly regressive. Direct taxes are not used much in developing countries because of the ease of evading and difficulty of collecting them; thus they may be less progressive than in industrial countries. Social security payments can be regressive or progressive, since both coverage and the incomes to which they apply vary greatly between countries. Thus wage taxes are probably progressive when coverage is low (10–20 percent), even though the rich do not pay them, because only high-income workers are covered. They become less progressive or even regressive as coverage is extended, although even then the very poor do not pay them.

Efficiency aspects of publicly financed health care

As with equity, efficiency is a concern for how revenues are raised and how they are used. Put another way, the type and level of taxation used to finance health care may have effects both inside and outside the sector.

Excess burden of taxation. Since people prefer not to pay taxes, and since they usually have choices about employment and consumption that affect how much tax they pay, taxes affect economic behavior and hence the allocation of resources. This impact is referred to as the *excess burden of taxation*. The implication is that public financing comes at a price. All taxes other than a lump-sum tax are associated with a welfare loss. Thus there is a tradeoff between efficiency—which generally calls for a small tax burden—and equity—which calls for progressive subsidies and thus for a larger share of income taken in taxes.

The optimal tax structure is one that maximizes society's welfare, where the balance between deadweight loss and equity reflects attitudes toward the competing goals of efficiency and equity. It is possible to estimate only the deadweight loss; there is no theoretical basis for deciding how much a particular improvement in equity is worth paying for. Although the theory of optimal taxation offers a few simple insights, in practice there may be disagreements about values and about the empirical question of what the tradeoffs are. Thus it is impossible to make recommendations

about the best mechanisms for financing health care from theory alone. It is also important to consider the problem of second best—that is, the design of government policies in situation where there are important distortions that cannot be removed.

A study for Sweden concluded that the excess burden is lower for a payroll tax or value added tax than for an income tax, because an income tax is easier to evade (Hansson 1984). Raising 1 Swedish krona (SEK) through a payroll or value added tax costs SEK 2.30 if the revenue is used for transfers and SEK 1.70 if the revenue is used for public consumption, making the excess burden SEK 1.30 for transfers and SEK 0.70 for public consumption. For an income tax the excess burden is SEK 3.00 for transfers and SEK 2.30 for public consumption. These are much higher estimates than earlier ones for the United States, which suggested that a tax on labor income, instead of a lump-sum tax, would cost only 2.5 percent of revenue raised in deadweight loss (Harberger 1964). They are, however, close to recent estimates on the deadweight loss of the income tax in the United States, which include the effects of tax avoidance through changes in the form of compensation (such as employer-paid health insurance or housing that is not be counted as income). Feldstein (1995) estimates that a proportional rise in all personal income tax rates involves a deadweight loss of \$2 per incremental \$1 in revenue.

Comparable estimates of the cost of raising tax revenue are scarce or nonexistent in developing countries, but the possibilities for evading taxes and changing economic behavior to escape taxation are at least as great as in industrial countries. One particularly important escape is self-employment in the autonomous or informal sector, where taxes on income are nearly impossible to collect. The difficulties of raising revenue explain both why governments pay for a smaller share of health care in most developing countries and why they rely on indirect taxes (sales and excise taxes), import and export duties, and social security contributions. These difficulties also explain why, when a social insurance scheme exists, it is rare for coverage to be universal, and why there is often a struggle over using those resources to subsidize health care for noncontributors.

Because of the problems of financing adequate public insurance, increasing attention has been paid to the design

of mixed systems in which the public sector provides some type of compulsory and universal plan but the private sector is allowed to offer complementary coverage. Such an arrangement might allow public funds to be concentrated on the poor without having to raise more resources generally, but there is no consensus about the overall effect on efficiency. This is true even when the argument over the introduction of government catastrophic insurance in a system of private insurance (and how such a mixed system would compare with a purely private competitive insurance market or an optimally designed government monopoly plan) is limited to the issue of moral hazard and excess consumption of health care (Besley 1989; Selden 1993; Blomqvist and Johansson 1996).

Effects on overall funding. Government finance may influence total spending on health care in different ways. The traditional argument has been that the introduction of public insurance, as with private insurance, will increase spending because of moral hazard—particularly when government finances care through tax subsidies on health insurance premiums and stimulates overinsurance. The optimal expenditure on health would include insurance, but the costs of that insurance should be recognized by the people paying for it, and they should make rational decisions about how much of it to buy.

Another argument is that in health care systems funded through direct taxation, there is a risk that expenditures may be too low. This could happen because public goods and externalities are undervalued by the public, or because people are unwilling to pay the optimal level of taxes if they do not think the resources are being used to buy identifiable insurance for themselves. This possibility has revived discussion of earmarked taxes, which dropped from the mainstream of public finance many years ago. A number of proposals have recently been put forward, particularly in the United Kingdom, for introducing a specific tax to finance health care (Jones and Duncan 1995).

One reason for these proposals is surveys showing that people favor increases in the scale of public financing (and provision) of health care. At the same time, some countries have cut public spending. Thus there seems to be little correlation between public expenditures and the preferences of voters. However, surveys may ask questions in such a way

that the respondents do not think of a real tradeoff between different types of spending. If the questions were formulated correctly, the discrepancy would be much smaller (Eckerlund and others 1995).

A second reason earmarked taxes might be attractive is that people would accept tax increases for health, but not for other areas. Earmarking provides greater transparency and responsiveness to the preferences of voters and thus would help ensure that the resources are used for health and nothing else. However, it is difficult to test the hypothesis that people are more willing to pay taxes for health services if they know the proceeds are earmarked for that purpose. Does earmarking make the government more responsive to public preferences, or are the benefits realized through behavioral responses by taxpayers (who consume more of the taxed goods, declare their incomes more honestly, and so on)?

An earmarked tax will not by itself determine the optimal level of spending. In fact, it will have no effect on total health care spending if revenues are insufficient to pay for everything, and other tax contributions are lowered to offset the earmarking. A designated tax is usually sufficient to pay for a health care program only in the case of social insurance. Even so, these contributions may not be strictly earmarked, since they often finance both health care and transfer payments such as pension or unemployment insurance. Using the same taxes to finance health care and pensions has caused severe problems in Latin America because pensions usually get priority, causing severe financial crises for health spending when revenues are inadequate for both (McGreevey 1990). Earmarking a tax for two uses is of little use unless the proportions are specified.

A third reason is that in some health care systems taxes can be described as earmarked for health, although the correspondence is not necessarily one-to-one. Sweden's county councils levy a regional income tax that is used mainly to finance health care. But the councils also spend the money on other areas, and part of their revenue comes as grants from the central government. In such cases where the tax is almost completely earmarked, offsetting adjustments in other revenue sources are likely to be small, and the link between sources and uses is effective. Earmarked taxes are common in Latin America, especially "sin taxes" on alcohol and tobacco, and part of the proceeds of lotteries are

usually earmarked for health. There is little evidence that this approach makes more resources available for health, since central budgets can adjust the contributions from other taxes.

From a theoretical perspective there are strong arguments against using differential commodity taxes for financing. First, if there is a well-designed income tax, differential commodity taxation is likely to add little, if anything, to the ability to redistribute income. Of course, where income taxes are poorly designed and hard to collect, there may be a gain from excise taxes; this argument applies to developing countries. Second, differential taxation may be administratively complex. Third, such taxes can be used to discriminate against certain groups. The arguments against differential commodity taxes are relevant for distortive taxes only.

For corrective taxes, such as a tax on products with negative externalities, the argument is different. However, the theory of corrective taxes does not tell us anything about how the revenue from these taxes should be used. One consequence of corrective taxes is that if the behavior is affected in the desired way, the revenue for health services will be smaller. And the more people smoke and drink, the more money will be available for health care. Thus governments may be ambivalent about reducing the behavior that brings in revenue, especially if any gains from reduced health expenditure will only materialize in the future. And health gains do not necessarily mean reduced lifetime expenditure on health care.

Effects on the allocation of resources within the health care sector. It is often advocated, or hoped, that a change in how health care is financed will increase efficiency in the allocation of health care resources. Some of the proposals for earmarked taxes can be interpreted in that way. But in theory there is no specific link between the way money is raised and the way it is spent. It is possible to combine different mechanisms for allocating resources in the health care system and different ways of providing government funds. Moreover, the level of spending is not in any significant way determined by the level or composition of public finance (OECD 1987, annex A). This observation does not rule out that changes in health care financing mechanisms can be an important element of health care reform in a particular

country at a particular point in time. However, general conclusions about the relation between efficiency and financing mechanisms cannot be supported by theory or empirical evidence.

An exception to this generalization occurs when specific sources or amounts of revenue are allocated not to overall health care spending but to specific programs or categories of spending, and the earmarking is not offset by changes in other sources of funds. This approach affects the allocation of resources between individual medical care (which is highly visible and therefore politically attractive) and public goods whose benefits may not be perceived or appreciated by voters; it is an extension of the argument that direct financing may be suboptimal for such goods. It is also an example of the issues raised by public choice theory (Buchanan 1963), which takes self-interest into account. It does not follow that intrasectoral earmarking will be optimal, but it may improve on the political allocation of resources that would otherwise result (particularly in a decentralized system, where one political level would choose differently than another). Colombia's current health system reform is an example of trying to use earmarking to improve the overall allocation of resources while leaving decisions about individual care to providers and insurers.

Conclusions and Recommendations

Direct out-of-pocket payments can solve part of the financing problem in health care, and are the natural way to pay for inexpensive goods and services. But health care can be so costly as to make direct payment infeasible, making risk sharing necessary. Private, competitive, voluntary insurance exists for this reason and can finance a large share of health care. Yet such insurance is unaffordable by the poor, discriminates against those most in need, and can be expensive to administer. For all these reasons, there remains a role for government in health care financing.

The issues relating to how much and what form of government finance are best affect both equity and efficiency and include poverty, high-risk groups, and the difficulties of predicting future needs and costs. We end with a brief summary of how health care is financed in the world today; consider what conclusions can be drawn about the proper role of government, the appropriate model for public finance,

and the sources of revenue; and examine some of the problems affecting developing countries.

The current situation

Public finance is the main source of revenue for health care systems in most parts of the world. In high-income countries public finance accounts for about 75 percent of the total. The main exception is the United States, where public finance covers only about 50 percent of health care financing. Taking into account the high health care expenditures in the United States, however, the share of public finance for health care relative to GDP is similar to that in other industrial countries. In developing countries public finance is less important, sometimes as little as 20 percent, and out-of-pocket payments are a larger share of the total.

The composition of public finance varies considerably, particularly in high-income countries. France, Germany, and the Netherlands rely mainly on social insurance, while Canada, the Nordic countries, and the United Kingdom rely on general taxation. (The United States is again unusual, in that it operates both kinds of publicly financed systems.) Social insurance is rare in developing countries, and it is common to find 100 percent direct financing in many African and Asian countries. At intermediate incomes—as in most Latin American and Caribbean as well as some Asian countries—the shares are variable, with some countries using both models and some relying primarily on social insurance.

Except for a few countries (Switzerland, the United States), private health insurance is a minor source of finance. In developing countries this is because most of the population cannot afford private insurance; in industrial countries it is because the state has assumed most of the insurance function. Private insurance usually complements public insurance, and a country may finance health care in different ways according to the income, employment, age, and location of the insured and according to the services covered and their cost.

Role of government financing

Government health care financing serves several purposes. One is to ensure the provision of public goods. Most public financing, however, is for private goods in the form of

individual health care, particularly when they are costly. The only reason for governments to finance inexpensive health care is to make available to the poor what the nonpoor can buy out of pocket.

More generally, the main argument for government intervention is the desire to achieve universal access to health care. This argument is based both on efficiency (arising from market failures in the provision of private insurance) and equity considerations (the financing of health care should be according to ability to pay, and the distribution of services according to need). The need to provide public goods and to alleviate poverty are important reasons for governments to pay for health care in developing countries; it is public insurance for high-cost care that accounts for the higher share of public spending in industrial countries. Variations in the general pattern of financing reflect differences in the resources available to governments, the functioning of markets, people's values, and the responsiveness of the political system to public preferences. There is little consensus or empirical evidence as to the "right" level of financing for health care, in total or by the state.

Government financing can be combined with many different models for delivering health care, by private as well as public providers. In particular, public finance does not imply public provision. As with private insurance, extensive government finance can create moral hazard and inefficiency in the allocation of resources to health care as well as within the health care sector. However, there is no simple relation between the source of financing and efficiency in health care provision and delivery.

Models for government finance

The fact that some high-income countries follow the directly or tax-financed model while others rely on social insurance, and that in many countries both systems operate at once, suggests that neither model is better than the other. There is no empirical evidence that the theoretical virtues of either model (universality and a less distorting tax base in tax-based systems, transparency and ease of revenue collection in social insurance) lead to systematically better health, lower costs, or any other sign of superiority. The fact that low- and middle-income countries tend to use only direct finance and to have little or no social insurance—

just as they have little or no private insurance—is not evidence to the contrary. It simply reflects the difficulty of financing insurance for a mostly poor population, and especially the problem of collecting the taxes on labor that usually finance social insurance. Explicit social insurance is harder to organize and depends on more favorable economic conditions, but that does not make it better or worse.

For many countries the question is not which model to follow so much as how they should interact when both already exist—social insurance for urban, formal wage labor and civil servants, and direct finance for the poor and informal workers. Should contributors to social insurance help subsidize the tax-financed beneficiaries, who usually have lower incomes? Should different taxes be pooled so that social insurance can be more extensive and not depend only on labor taxes? And how should either model relate to private insurance? Several countries have experimented with hybrid models that distinguish contributions from subsidies, in an attempt to meet the two government roles of protecting the poor and guaranteeing and regulating insurance for those who can afford it. Conclusions about how well any system works cannot be derived from theory or generalizations but depend on the specific arrangements for financing, coverage, and benefits.

Sources of revenue

According to the benefit principle, assuming that the purpose of government intervention is to achieve universal coverage, the tax base should be as broad as possible. Specific taxes (such as excise duties) that only part of the population will pay should not be used. Such taxes may be justified to curb the use of products with negative externalities, but there is no reason the revenues should be devoted to health care.

One way to achieve a broad tax base is to create a fund that receives revenues from several taxes. This is what general revenue financing does, but the fund could combine taxes in different proportions specifically to increase the stability of revenues and protect against cyclical variation. These outcomes would be useful because the need for health care, particularly for public subsidies, is likely to be countercyclical, increasing under adverse economic conditions. It is also important that the revenue base grow at least as fast as the

general economy, given the pressure to increase health expenditures as income grows. Income, value added, and sales taxes are good candidates. Indirect taxes, employer contributions to social insurance, corporation taxes, and other sources make it less clear to the public that there is a link between what they pay and the services they receive, which is what the benefit principle is about. Particularly with employer contributions there is a risk for misunderstanding about the incidence of taxes, and consequently a tendency to overinsure.

To achieve equity, government financing should be based on ability to pay, which makes a case for proportional or progressive income taxes. Taxes on labor income are second-best in this respect, since capital is not taxed and the contribution is usually proportional to earnings only up to some ceiling. An income tax also has the advantage of being transparent. The empirical evidence is that direct taxes are generally more progressive than social insurance contributions, which are more progressive than indirect taxes. In this respect, the same taxes that can be recommended for creating a broad base for funding are also those most likely to collect from people in proportion to their ability to pay. Excise taxes on luxury consumption are an exception: they are progressive but narrowly based.

Government finance by any combination of taxes and contributions is almost certain to be more progressive than out-of-pocket payments. This finding implies that governments should finance as much health care spending as efficiency considerations permit in developing countries, where a large share of finance is direct payments by consumers. Public finance may be less progressive than private insurance financing, but that is not an argument in favor of private insurance if the progressivity is simply due to the fact that only the rich buy private coverage. Public subsidies for insurance purchase by the poor (for example, through vouchers) can in principle respect ability to pay while giving people a choice of insurers. However, subsidies through the tax system—deducting the price of insurance from income for tax purposes—are regressive and should be avoided. They are also inefficient, stimulating the purchase of insurance without control over costs, coverage, or benefits.

From an efficiency perspective, taxes should minimize distortions to economic activity and encourage an optimal overall level of spending and an efficient provision of health care. Theoretically, lump-sum taxes are the ideal source of

public finance, since they do not create any distortions. Such taxes are difficult in practice, however, and choosing among different tax alternatives in terms of excess burden is difficult. The fact that the burden associated with any tax increases with the marginal tax rate reinforces the argument for a broad base of revenues that may include many different taxes at lower rates rather than a few taxes at higher rates. Unfortunately, there are few estimates of marginal or total deadweight losses due to particular taxes in developing countries, and the ranking of different taxes in industrial countries may not apply to conditions of much greater poverty, informal employment, and easier tax evasion.

The deadweight losses associated with taxes limit the amount that can be raised for health care spending without making an economy worse off. If people are willing to pay more for health care but not for public spending in general, then earmarked taxes are an attractive alternative for achieving a higher and more optimal allocation of resources to and between different health care services. Earmarked taxes are often used to pay part of government health care costs, but the arguments for such taxes are weak, and there is no evidence that they lead to more or better expenditure because the amounts raised are usually small and allocations from other taxes can be reduced to offset them. Social insurance contributions are usually the only earmarked taxes capable of paying for a health system.

Of course, another broad-based tax could be earmarked for health care, and if the revenues were large enough and the tax were used to buy insurance with subsidies to the poor, it might be possible both to guarantee adequate financing and to fulfill equity and efficiency criteria. For this purpose, as well as for a general ranking of taxes with respect to their distorting effects, a value added tax is more efficient than a payroll tax (since it does not tax labor while ignoring capital), and relative to an income tax encourages saving and discourages consumption. A value added tax is also harder to evade and, when taken in conjunction with the health benefit it provides, is clearly progressive (Fuchs 1996).

Structure of insurance

In addition to deciding how much insurance to pay for and for whom, and with which taxes, governments can also deter-

mine how to share costs with patients and what economic incentives to build into insurance. The same principles of optimal insurance apply to public financing and private coverage. Thus, for example, deductibles and coinsurance should be introduced so that the insurance protects against the highest financial risks rather than leaving patients unprotected after some limit. Public insurance generally does not respect these principles, and user charges are far from optimal. Especially in developing countries, this situation reflects the difficulty of discriminating according to ability to pay as well as the information requirements for efficient protection.

Another conclusion is that social insurance that is limited to special groups (such as the elderly or the poor), diseases, or treatments leaves part of the population without coverage and increases the risk for suboptimization. Basing eligibility on income or wealth also creates incentives for inefficient behavior in the intertemporal allocation of funds. It is probably better to establish a single insurance coverage and then reduce or waive payments by the poor.

Problems of developing countries

Although public and private levels of spending on health care differ substantially, the problems related to public spending are similar in economies at different income levels. In most countries general budget constraints make it difficult to increase public spending on health care, whether financed by debt, taxes, or reallocation from other sectors. High-income countries have nearly all slowed the rate of increase in health spending in recent years, sometimes stabilizing spending as a share of GNP. In very low-income countries, however, expenditures are still so low that even if funds were spent as cost-effectively as possible, they would meet only the most critical health needs. And many middle-income countries face simultaneously rising expenditures and unmet health care demands (World Bank 1993).

What can be done? More attention has been paid to what developing countries should buy with their public health care resources than to how those resources should be raised. These countries should concentrate spending on services that benefit society as a whole, particularly cost-effective public goods such as immunization, sanitation, health education, and control of vector-borne disease. Remaining

resources should be spent on private curative care, with some mix of consideration for costs (to provide catastrophic protection), effectiveness (to ensure real health gains), and response to needs perceived by the public (World Bank 1987 and 1993; Musgrove 1996). For very poor countries it is possible to design a basic package for which government finance would be justified; for less poor countries the choice of what services to finance becomes more complex.

What implications does an appropriate strategy have for public finance in developing countries? The general principles discussed above all apply, but three questions acquire particular urgency when governments' capacities to finance a reasonable level of universal care are limited:

- How can insurance coverage be increased without incurring perverse subsidies or overinsurance?
- How should users be charged for services that are publicly subsidized (see Gertler and Hammer in this volume)?
- How can governments ensure that benefits are concentrated on the poor?

If there is little alternative to charging users of government facilities and private providers that public finance subsidizes, then differential fees to protect the poor are crucial. In countries where high-income consumers carry private insurance but use public facilities for free, collecting the cost of services is urgent for both equity and efficiency. And the taxes used to finance what is not charged to users need to be as progressive and free of distortions as economic conditions allow. Tax expenditures in the form of tax exemptions are even less advisable than in richer countries.

Perhaps the most difficult question is how to extend catastrophic insurance coverage to people who cannot afford adequate, unsubsidized private insurance. The government can encourage the development of an efficient insurance market by imposing appropriate regulation on private insurance, which often operates with little control. To avoid subsidizing individual health care for the better-off, the government should avoid direct and indirect subsidies for private health insurance. And to avoid cost escalation, compulsory insurance plans should include a deductible and coinsurance up to a ceiling. When insurance is subsidized for the poor, both the deductible and the coinsurance payments must be lower, or the insurance cannot be used

when it is most needed. The problem is the same as for user fees generally.

Concentrating spending on certain services, as suggested above, will shift some resources from the rich to the poor, because the poor suffer somewhat more from diseases with cost-effective preventive or treatment measures. But the best way to ensure equity in government finance is through the financing mechanisms themselves—the combination of taxes, contributions, and fees that pay for services that the whole population may need.

Improving public financing of health care will not solve all the problems of the health sector. Political decisions are needed to ensure that funds are not only raised as efficiently and equitably as possible, but also are used for the poor and for services with public benefits. Nor are the suggested reforms simple to implement. In particular, they are likely to require much more information about insurance beneficiaries, patients, providers, and services than governments are accustomed to dealing with. Current reforms in several middle-income countries show just how important and difficult this process is. Still, there is scope for improving how public resources for health care are obtained and used, and the potential benefits are very large.

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From Beveridge to Bismarck: Health Finance in the Russian Federation

Igor Sheiman

For decades the Soviet health sector developed using the Beveridge model—that is, a tax-financed and highly organized system with an emphasis on universal access to comprehensive care. In the early 1990s a countrywide reform of the health care system began, the core of which was a transition to a payroll tax-based mandatory health insurance approach known as the Bismarck model. This shift is not limited to the method of raising health revenue, and entails profound changes in the way the system is managed and financed. This new approach is a reaction to the negative features of the former command and control system, the most important of which were chronic underfunding, government dominance of health care finance and provision, top-down noncontractual resource allocation, no consumer choice, and input-based funding of health care providers. These characteristics led to considerable inefficiencies and irrational structures in health care provision. Moreover, comprehensive and universal coverage were undermined by inadequate funding and inefficient utilization of health resources.

The main goals of reform are to:

- Raise additional funds
- Increase the internal and allocative efficiency of health care provision by moving toward a system based on contractual relationships between health care consumers and providers using new payment incentives
- Enhance the quality of care and ensure consumer protection through third-party payers
- Maintain social solidarity and equity while increasing consumer choice.

The conceptual basis of the reform is regulated competition, which combines market incentives and regulation in the purchase and provision of health care. The Health Insurance Act, passed in June 1991 and amended in early 1993, is the legal basis for health sector reform. The Act mandates universal coverage for all citizens, including a comprehensive package of medical benefits defined by the basic (national) and territorial programs of mandatory health insurance. The system is financed by an earmarked payroll tax and general budget revenue. Employers make income-based contributions to the newly created territorial mandatory health insurance funds (3.2 percent of payroll) and the federal mandatory health insurance fund (0.4 percent) to cover their employees. Local governments make contributions to the territorial funds for the nonworking population and directly finance a number of health programs and providers.

The system is highly decentralized. Each of the Federation's eighty-eight regions (*oblasts*), with populations ranging from 500,000 to several million residents, is responsible for its mandatory health insurance system. This approach reflects the country's general move toward political and economic decentralization.

Each territorial fund pools the premiums and allocates them to insurers based on a weighted capitation formula. Some *oblasts* have developed a pluralistic system of health care purchasing with a few competing insurers; others use a one-purchaser model acting through the local branches of the territorial fund. Since community rating restricts risk selection, competition among insurers is focused on increasing market share. Insurers, acting as third-party purchasers of health care,

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contract health providers and pay them according to the method determined by each oblast's mandatory health insurance regulation. Rates are set by multilateral tariff agreement with the involvement of the oblast health committees, mandatory health insurance fund, and medical associations (for details on the design see Sheiman 1994 and Klugman and Schieber 1996).

Three and a half years of reform implementation provide some indicative outcomes that are the subject of hot debate in Russia. Evaluations of the reform range from deep frustration to high enthusiasm and often depend on the vested interests of the evaluators.

The international community is increasingly interested in the process and outcomes of Russia's transition to mandatory health insurance. Although recent reports from the World Bank, the U.S. Agency for International Development (USAID), and other donors evaluate health reforms in a number of countries in Central and Eastern Europe and Central Asia (Ensor 1993; Klugman and Schieber 1996; Langenbrunner and others 1996; Goldstein and others 1996), their multicountry approach makes generalizations difficult and sometimes misses essential characteristics of health reform in individual countries.

This paper reviews recent developments in the Russian health sector and appraises their impact using traditional criteria. Thus the emphasis is on the reform's successes and failures in securing additional funding, achieving higher equity, providing efficient and quality care, and overcoming structural distortions. The main problems of the reform and potential ways of resolving them are then discussed. The paper concludes with health policy implications for transition economies.

The Reform's Impact on Health Finance

Current debates on health care reform focus on how to raise additional revenues to strengthen the health sector. This section assesses the new revenue-raising model's effects on health revenues and identifies the relative contribution of different sources of finance.

Public health expenditure trends

It is important to choose the right benchmark when estimating trends in health expenditures. Klugman and Schieber

(1996, p. 20) use 1990 as a benchmark for Russia and Central Asia. Here 1992 is used—the last year before reform and a starting point for big structural changes in the Russian economy.

Considerable changes in health spending occurred during 1992–95, with two opposing trends (table 1). During 1992–94 the share of public health spending in the economy increased substantially, from 2.6 to 4.1 percent of GDP. In 1994 real public health expenditures were 24 percent higher than in 1992. This increase is overstated, however, because the GDP deflator seems to understate growth in the prices of health goods and services, particularly pharmaceuticals. Still, even when a more reasonable price deflator for medical goods and services is used, real health spending in 1994 was 20 percent higher than in 1992.

Such growth was a rare positive trend in a declining economy, however. Mandatory health insurance started at a time of relatively good funding and high hopes. But by 1995 the opposite trend had started, and is still under way. Health spending has fallen in both absolute and relative terms. The share of health spending in GDP dropped to 3.3 percent in 1995 and, according to preliminary estimates, to 3.1 percent in the first nine months of 1996. Real health expenditures fell to pre-reform levels. Thus the drop in health spending was more substantial than was the decline in the country's overall economy. As a result the overall trend for the entire period is positive in terms of the relative weight of public health expenditures but negative in terms of the absolute volume of real health expenditures (with a 10 percent drop).

Expectations for mandatory health insurance were based on two assumptions. First, that local governments, after being liberated from centralized resource allocation, would reorient their budgets toward health and other social services. Second, that economic decline would not last long. Both assumptions were wrong. Regional and local governments

TABLE 1
Public health spending in the Russian Federation, 1992–95

	1992	1993	1994	1995
Public spending/GDP	2.60	3.77	4.08	3.29
Real health expenditure index	100	135	124	90

Source: Estimate based on Korchagin 1996 and Shishkin 1996.

face increasing fiscal difficulties and often cannot afford their new health care responsibilities. They also tend to support agriculture, new road construction, and other more tangible and visible services and projects. The economy has been declining for six years, and only in recent months have there been signs of improvement. As a result much less money has been infused into the health sector than was anticipated.

Still, the decline in real public health expenditures should be seen in the context of changes in other sectors. A 10 percent drop in real spending is somewhat tolerable given that education has lost 27 percent of its funding and culture has lost 31 percent. In relative terms the health sector is doing better than other social services, all of which have been funded for decades using the residual method—that is, after priority allocations to defense, agriculture, and other major sectors have been made. The new payroll tax protected the health sector from a more dramatic fall. To be more precise, substantially decreasing public resources have been redistributed toward the health sector with very little value added for health care providers and their patients.

Comparisons with other transition economies support the view that the new payroll tax has helped stabilize the health care system. For example, during 1990–94 all Central Asian countries experienced a much more substantial drop in health care funding, in both absolute and relative terms, than did Russia (Klugman and Schieber 1996, pp. 17, 20). Similarly, the shift to national health insurance systems has had a positive impact on public health funding in Croatia, the Czech Republic, Hungary, and the Slovak Republic (Goldstein and others 1996, p. 34).

Public health expenditure structure

The relative contribution of the two sources of public health funding is shown in table 2. The contribution of the payroll tax is increasing, but not to the extent that might have been expected. In 1995 it provided just 26 percent of public health revenue; general budget revenue (mostly from local budgets) is still the main source of health finance. This outcome is contrary to the design of health revenue under the Bismarck model, in which a payroll tax is supposed to be the main source of revenue, with the government providing small subsidies. A payroll tax provides 90 percent of public health revenue in France and the

Netherlands, and 78 percent in Germany. Even in Belgium, where state subsidies are more important, the payroll tax is still the main source of revenue—58 percent.

The reason the payroll tax accounts for such a small percentage of public health revenue in Russia is that, according to the legislation, workers are not supposed to contribute to mandatory health insurance. Thus, contrary to declarations about the transition to a mandatory health insurance model, the health system is still financed mainly by taxes. Moreover, local governments are reluctant to allocate resources to mandatory health insurance funds. Their contributions cover just 24 percent of mandatory health insurance enrollees, although they are supposed to pay for 56 percent of the population. In twenty-three regions local governments make no contributions for nonworking populations (Federal Fund of Mandatory Health Insurance 1995; Kravchenko 1996)—a clear violation of the legislation, which states that such contributions are mandatory and much be equal to per capita contributions for employees. The transition to mandatory health insurance has given local governments an excuse to underfund the health system, with the share of health expenditure coming from local budgets dropping from 18 percent in 1993 to 12 percent in 1996.

Total health expenditure structure

One of the goals of health reform in Russia was to enable citizens with high living standards to purchase health care using voluntary health insurance and direct out-of-pocket payments. This goal can be achieved by explicitly specifying the package of medical benefits under mandatory health insurance—that is, by determining a clear-cut border between public and private finance.

TABLE 2
Public health revenue in the Russian Federation by source, 1992–95
(percent)

Source	1992	1993	1994	1995
General budget revenue	100.0	88.9	76.5	73.9
Federal budget	17.8	9.5	9.1	6.3
Regional and local budgets	82.2	79.4	67.4	67.6
Payroll tax	—	11.1	23.5	26.1
Total	100.0	100.0	100.0	100.0

Source: Estimate based on Korzhagin 1996.

The main source of private spending—direct payments by enterprises that run their own medical facilities—has fallen dramatically (by half over the past four years) as the result of the economic crisis. This decline in direct health provision by employers has not been compensated by the growth of voluntary health insurance. Moreover, direct social services from employers have decreased substantially.

More than 500 private insurance companies underwrite voluntary insurance plans that provide enrollees with additional services and access to the best hospitals and polyclinics. But coverage is limited to 3–5 percent of health care expenditures. Voluntary plans are popular in Moscow, St. Petersburg, and other big industrial centers with well-equipped teaching hospitals and high living standards, but are less developed in the rest of the country. Most medical facilities are not involved in these plans because insurers prefer to work with the medical elite.

The role of formal private out-of-pocket health funding is negligible—no more than 1.5 percent of total health spending. Most private money comes to the health system through the black market as under-the-table payments, particularly in big hospitals in urban areas. Patients are increasingly charged for drugs, materials, and surgery. In addition, most pharmaceuticals for outpatient use are purchased out of pocket, although some groups are exempted from direct payment. Thus private spending is substantially understated because it is impossible to measure informal private (out-of-pocket) payments for items that are not fully covered by national health finance statistics. There has been no attempt to conduct a large-scale household expenditure survey to assess the scale of out-of-pocket health expenditures.

TABLE 3
Total health revenue in the Russian Federation by source, 1992–95
 (percent)

Source	1992	1993	1994	1995
Public ^a	73.5	84.5	88.3	83.5
Private ^b	26.5	15.5	11.7	16.5
Total	100.0	100.0	100.0	100.0
Total revenue/GDP	3.7	4.5	4.8	3.9

a. Sum of general budget revenue (federal, regional, and local) and mandatory health insurance contributions of employers.

b. Sum of consumer health expenditure and direct health expenditure of enterprises.
 Source: Estimate based on Korchagin 1996.

The private sector's role in total health expenditure has been declining (table 3). The health system still lacks an effective mechanism to raise private money. The main reason is that public commitments to the coverage, eligibility, and comprehensiveness of health care under mandatory health insurance are too declarative and are not based on an actuarial approach. The lack of specification for the package of medical benefits under mandatory health insurance also limits the development of formal private finance.

In summary, the expectations of additional funding have not been met. The payroll tax has brought insignificant growth to health sector resources. There has been no shift in the formal public-private mix of health finance. Private finance and provision are not structured as a component of national health policy, and have been developing in an unregulated, chaotic manner.

Impact on Equity

The transition to mandatory health insurance raises the issue of its effect on the equity of health care provision for different groups and on the redistribution of income. A prevailing attitude in the literature is that the general revenue approach ensures a higher degree of income redistribution and social solidarity than do social insurance models. Two arguments are usually presented. First, an income tax is more progressive than a payroll tax. Second, the Beveridge model tends to pool risks more equitably than the Bismarck model, which has trouble pooling risks among multiple sickness funds (Ensor 1993; Klugman and Schieber 1996; WHO 1996).

However, the effect a health care financing model has on equity is more dependent on the design of the system, particularly the way resources are allocated, than on the mode of fund raising. The Beveridge and Bismarck models may or may not be designed to pool risks by equalizing financial resources across groups and areas. Health insurance systems in Germany, the Netherlands, and elsewhere used risk-adjusted capitation formulas to ensure equitable allocation of resources (Van Vliet and Van de Ven 1992; Files and Murray 1995). Yet some countries with the Beveridge model have not made much progress in equalizing resources, and for seventy years the Russian health care system (using the Beveridge model) failed to achieve equitable health care

provision for different groups. The elite of communist society had access to high-quality medical facilities, employees of big enterprises enjoyed high standards of health care in the facilities owned by their enterprises, and high-income groups had better access to the best medical facilities.

The effect a transition to a payroll tax has on income redistribution also depends on a country's structure of taxation. If the earmarked tax replaces a highly progressive income tax, the impact on equity is clearly negative. But the replacement of highly regressive indirect taxes may increase social solidarity. In Russia the structure of tax revenue is skewed toward indirect taxes. The value added tax provides 44.1 percent of consolidated budget revenue and excise taxes provide 19.8 percent, while the profit tax supplies 18.3 percent and personal income taxes just 2.6 percent (*Izvestia* 1996). Given this taxation structure, the new payroll taxes may have a neutral or even slightly progressive effect.

In addition, it is easier to collect payroll taxes than profit taxes in transition economies with weak tax collection capacity, because it is harder for entrepreneurs to hide payroll than profits. In Russia mandatory health insurance tax collection provides about 90 percent of expected revenue (Federal Fund of Mandatory Health Insurance 1995), while the rate of income tax collection is so low that in late 1996 a presidential decree on emergency measures to collect taxes was required. However, the amount of payroll taxes actually collected is reduced by a number of factors inherent to transition economies, such as nonpayment of formal wages and underreporting of actual wages, particularly in small businesses.

One feature unique to Russia is that the health payroll tax has not increased the tax burden of employers. Instead, it replaced a portion of the old-age payroll tax when it became clear in 1993 that the pension fund had surplus funds. Although a basic package of medical benefits was estimated to require 7.2 percent of payroll, the health sector receives only 3.6 percent; the rest is covered by general budget allocations for health. The share of social costs in payroll is 41 percent—lower than in some Western European countries, but high for a transition economy that is starving for investment resources. High labor costs have narrowed resources for investment and growth. Moreover, this burden discourages employers from creating additional jobs,

thus forcing jobs into the black market or increasing the number of unemployed. Although it is unrealistic to expect an increase in the tax burden, tax revenue sources could be restructured, with a shift from a general to an earmarked health tax.

The negative effect reform has had on equity in health care provision is evident from data on the geographic distribution of health funds. There has been a sharp turn from highly centralized, top-down resource allocation to excessive decentralization of health finance and management. The Ministry of Health does not subsidize the oblasts. Moreover, the subsidies provided to the oblasts by the Ministry of Finance are not earmarked for health, and are usually allocated by oblast governments according to traditional budget priorities. Given the great differences between regions' industrial bases and taxation revenues, the gap between rich and poor regions is growing. Per capita health expenditures range from 720,000 rubles in Moscow to 470,000 rubles in Far East oblasts to 130,000 in Northern Caucasus oblasts (Kravchenko 1996, p. 54).

To some extent these inequities are offset by the federal mandatory health insurance fund, which provides small subsidies to seventy of the eighty-eight oblasts. But these resources are insufficient to fund the equalization program.

At the oblast level, territorial mandatory health insurance funds provide some equalization of health funding across areas using capitation formulas to allocate resources to insurance carriers. However, the equalization capacity of these funds is limited because they control less than one-third of health revenue. The remaining funding is allocated by local governments, with little or no risk pooling between local areas. Few oblasts collect enough taxes in the mandatory health insurance fund to implement the equalization program.

The lack of a uniform oblast funding policy and management strategy has limited access to health care in rural areas and small towns. Major city governments have no interest in providing specialty care to residents from areas where such capacity does not exist. They make their budgets with no regard to the needs of outside residents within the oblast.

Growing inequity in the Russian health system cannot be attributed to the transition to mandatory health insurance. It is the result of the excessive decentralization and

fragmentation of health systems that started before implementation of mandatory health insurance. Federal and territorial mandatory health insurance funds are looking for ways to equalize financial resources, but they cannot offset the isolationist strategies adopted by local governments.

Mandatory Health Insurance, Contracting Arrangements, and the Efficiency and Quality of Care

The recent innovations in the Russian health sector reflect the shift to contractual interactions between health funding authorities and health care providers. Acting as third-party purchasers of health care, insurers change the performance of providers. Although contractual arrangements are possible under the Beveridge model, the scope for contracting is higher under the Bismarck model. First, an independent insurer can interact with providers (or groups of providers) only through a contractual mechanism. Second, a third-party payer is more flexible in its purchasing policy, since it has no obligations to state-owned medical facilities and may reject the services of inefficient providers.

In theory, the division between finance and provision is clear-cut. Moreover, contracting has the potential to improve health sector performance by decentralizing management, improving health care planning and management, and increasing local choice of health providers. In practice, the effects of contracting depend on many preconditions, the most important of which are the role of purchasers in encouraging competition among providers, the design of contracts and methods of payment, the adequacy and stability of funding, and the skills to manage the contracts (Savas and Sheiman forthcoming).

In Russia contractual relationships are a growing part of the health system. The main outcome of this transition has been increased operational autonomy of providers. Providers are still owned by the state but are now self-governing entities that can sell their services to different purchasers. Hospitals and polyclinics can keep surplus funds, hire and fire medical personnel, reduce bed capacity, deploy new units (like outpatient clinics), and determine employees' pay without authorization of the health administration. After seven decades of the Soviet health system, health managers now have an interest in collecting management information, pricing

services, and increasing their workload—efforts that are essential to fulfilling contractual obligations, ensuring a surplus, and increasing the salary of medical personnel.

The problem is that the scope of contracting is still relatively narrow, with big differences across regions. For example, in Samara oblast around 80 percent of health expenditures are contracted; in most oblasts no more than 30 percent are. Many health authorities are reluctant to surrender control over resources and tend to allocate financial resources on a noncontractual basis, making contracting inconsistent. Contracting's effect on efficiency and quality can be evaluated by examining new payment methods, the new role of management information, mechanisms for quality control and consumer protection, and administrative costs.

New payment methods

Contracting has encouraged the development of performance-related payment methods. Of hospitals working under mandatory health insurance, 53 percent are paid by insurers based on rates for each inpatient diagnosis. Another 7 percent are paid a flat rate according to the average rate by specialty. These two methods are used for 6.2 million cases—64 percent of inpatient cases. This approach has created incentives to increase the occupancy of hospitals and reduce the average length of stay. Length of stay in these hospitals is lower for eighteen cost categories than in hospitals that are still paid using traditional methods (Langenbrunner and others 1996, p. 164).

In outpatient care, 19.4 percent of polyclinics are paid according to a capitation method, 14.0 percent for each episode of outpatient care, 12.2 percent on a fee-for-service basis, and 10.0 percent using some combination of these (Sheiman, Shevski, and Zelkovitch 1996). Polyclinics working under capitation tend to shift to provision of primary care and preventive services, while fee-for-service payments encourage them to increase the number of services. Fee-for-service payments were used in Moscow for three years, resulted in overutilization of some services, and gave way to capitation. Still, the negative experience was helpful for both insurers and polyclinics. Fee-for-service payments encourage the development of information systems that are used to monitor payment and management. Moreover, the shift

from input- to output-based indicators is helping to reduce unnecessary bed capacity and to create outpatient clinics and other alternatives to costly inpatient care.

The effect of performance-related payment methods on allocative efficiency and the structure of health care is much more controversial. Decades of bureaucratic control over health care systems created substantial distortions in the structure of health care provision that are unknown to Western countries. Estimates of inappropriate inpatient cases range from 20 to 35 percent. Inpatient care stays average 3.7 days; in the United Kingdom the average is 2.0 days, in the United States it is 1.2 days, and in the most successful managed care settings it is 0.3 days (OECD 1993; Kongstvedt 1993).

The main cause of long stays is the excessive number of physicians and excess capacity in medical facilities. Such capacity is nearly impossible to maintain in a financial crisis. Mandatory health insurance has not yet contributed to the reduction of excess capacity and dismissal of unneeded personnel. The failure to lower excess capacity can be attributed to a lack of skills in planning and utilization management. The prevailing mode of interaction between health authorities and health providers is still input-based allocation of financial resources. Insurers, as purchasers of care, contract providers predominantly on a cost-per-case basis without properly analyzing utilization and planning volumes of care. Contracting is noncompetitive and lacks cost containment mechanisms such as global budgeting, analysis of appropriateness of inpatient cases, and so on. Cost and volume contracts, which imply planning for volumes of care and linking that information to available resources, are not used. As a result limited resources are spread across too many medical facilities.

This conservative policy is aggravated by the peculiarities of rate setting. The prevailing approach is to exclude utilities and some other fixed costs when calculating rates of payment. These expenditures are directly paid by local governments. In other words, most providers do not pay anything for heating and electricity. Thus they are not interested in closing facilities, even if there is excess capacity.

The main reason for the conservative policy is a deeply rooted strategy to build the health system by establishing new facilities rather than to improve the performance of existing facilities. Despite financial crisis, this approach has

not changed. In their reports, federal policymakers still praise themselves for "maintaining and strengthening the network of medical facilities." According to a recent statement by the Ministry of Health, an additional 34,500 hospital beds were put in place during 1993–95 (Tzaregorodtsev 1996).

There is evidence that some purchasers are interested in modern cost containment mechanisms. For example, in Kemerovo oblast rates are regulated in order to avoid inappropriate admissions and strengthen primary care. As a result the share of inpatient care spending in total spending dropped from 64 to 60 percent over the past three years. To reduce excess capacity, Kemerovo's health committee and mandatory health insurance insurers introduced utilization management procedures, with an emphasis on reducing the use of hospital resources. Excess hospital capacity was identified and three hospitals were closed within a few months. In Samara oblast the financial scheme of "poly-clinic as fund holder" stimulates primary care providers to assume the main burden of health care (Galkin 1995). The scheme has helped lower the share of inpatient care expenditures. Other regions are experimenting with different approaches to managed care in order to overcome structural distortions.

The USAID-sponsored Zdrav reform program, with Abt Associates, Inc. as a major contractor, helped develop managed care principles and techniques in six oblasts and several cities during 1994–96. Currently, Kaiser Permanente International and Boston University, as new contractors, are implementing a new program focusing on the same mechanisms. Efforts to disseminate outcomes of the Zdrav reform program have started, as has involvement at the federal level through the Duma and the Ministry of Health.

Thus Russia has followed an approach used in many countries: starting with relatively open-ended performance-related payment methods and then replacing them with more advanced managed care approaches and cost containment mechanisms.

New role of management information

One of the most beneficial outcomes of mandatory health insurance has been a growing demand for management information. When financial mechanisms changed, invest-

ment in clinical and financial information systems increased. Nearly all territorial mandatory health insurance funds and insurers have established information systems. Health care purchasing is increasingly based on data on utilization and costs across medical facilities, specialties, patient groups, and even diagnostic groups. Data on cross-boundary flows of patients are also collected.

Physicians, health purchasers, and decisionmakers are increasingly using computer systems to communicate, monitor, educate, acquire data, keep records, check bills, store information, analyze data, and support decisions. The systems add basic value to patient and managed care, provider-payer contracting, and financial management.

Quality control and consumer protection

Mandatory health insurance funds and oblast health committees have developed medical-economic standards that specify requirements for the process and outcome of health care for each diagnosis. Insurers have established units that review the cases and impose sanctions on providers that violate standards. The units also identify cases of delayed admission to hospitals and penalize polyclinics for the delay. Insurers also scrutinize inpatient cases where the length of stay is substantially shorter than the norm specified by the standard. The scope of this work is growing. For example, in Kemerovo oblast 8 percent of inpatient cases are subject to quality control by insurers. About 70 percent of collected penalties are returned to medical facilities to support quality improvements (Kemerovo Department of Health 1995).

Insurers are increasingly acting as champions of patients' interests. They have set up special units that are responsible for settling patients' claims (including court cases), monitoring patient satisfaction, and recommending quality improvements. Independent expertise brings discipline into the system, making physicians improve their performance.

The preoccupation with uniform requirements and norms is one drawback of these innovations. In some cases these requirements make physicians too defensive of their clinical practice and impede innovations. Moreover, it is hard for insurers to ensure compliance with standards when services are severely underfunded. These efforts are also being

criticized for their emphasis on imposing penalties rather than ensuring quality. There is growing interest in developing quality assurance systems based on continuous quality improvement models. There is also interest in integrating such systems with payment mechanisms.

Administrative costs

Most oblasts use a pluralistic model of purchasing with a number of insurers. Mandatory health insurance funds spend 2.6 percent of collected premiums on administration. Independent insurers spend 3.9 percent, for a total of 6.5 percent. Such levels are comparable to those in Western countries (Poullier 1992). In addition, mandatory health insurance funds use (temporarily) free resources for banking operations, which have high financial returns given galloping inflation and high interest rates (the investments made by mandatory health insurance funds are protected by regulation). Federal mandatory health insurance fund managers claim that the revenue from these operations exceeds administrative costs (Kravchenko 1996). This is only partly true, because premiums might have been used for financial operations not only by purchasers but also by providers (presumably with a smaller return due to an absence of banking skills).

It is hard to draw any generalizations about the size of administrative costs. These costs should clearly be taken into account when analyzing the effect mandatory health insurance has had on the performance of the health care system. It is also clear that Russia cannot afford 545 private insurers with luxurious offices and well-paid employees. In general, multiple funds have higher administrative costs (Poullier 1992).

Intense debates are under way on this issue. Amendments to the Health Insurance Act have been submitted to the Duma that would replace private insurers with mandatory health insurance funds as major purchasers. An alternative approach, taken in Moscow, is to decrease the number of insurers by merging small entities. Moscow's network of twenty-five companies is being merged to form eight larger ones that will share the mandatory health insurance market on a cartel basis. This approach will likely decrease administrative costs, but at the cost of less competition among insurers.

Implementation Issues

Obstacles to successful reform

Health reform in the Russian Federation faces many obstacles. Some are objective, others are the result of poor design in the finance and management of the system.

Economic and political instability. Economic instability aggravates health system underfunding, making it difficult to introduce performance-related payment methods. Providers are responding to the new payment methods, but incentives in the informal market are much stronger—simple under-the table payments are easier than sophisticated formal payment arrangements.

The unstable political situation also impedes radical changes in the system. Local policymakers may recognize the need to close some facilities and fire some personnel, but they are reluctant to do so because elections take place twice a year.

Excessive public commitments. Given the current economic situation, the government should no longer try to deliver free care to all groups. Excessive state guarantees distort economic relationships in health care because unbalanced mandatory health insurance programs hinder full-scale contracting between purchasers and providers. In addition, free care is becoming more elusive and public discontent is growing. Having declared health care entirely free of charge, the government is losing its capacity to provide it to the groups that need it the most. The health bureaucracy tends to refer to the “constitutional rights” of citizens for free care rather than look for better ways to attract private money.

Poorly specified roles and responsibilities of the government and mandatory health insurance funds. The establishment of mandatory health insurance funds and insurance carriers has divided the roles and responsibilities for health finance and provision, creating misunderstandings and conflicts between old and new actors in the health care system. The system is fragmented both vertically and horizontally. Local governments and mandatory health insurance funds in most oblasts separate their responsibilities for funding health across health system subsectors (insurers may pay for outpatient care, local

governments pay for inpatient care), items of expenditure (utilities and equipment are paid for by the government, while other items are paid for by insurers), population groups, and specialties. These distinctions impede planning and management of care focused on more cost-effective arrangements. In addition, providers act under different economic regimes: contractual (with insurers) and noncontractual (with local governments). This approach limits the application of performance-related methods and so reduces the efficiency of the contractual part of provider performance.

Little or no market pressure. The transition to health insurance has introduced elements of competition, but mostly on the purchasing rather than the provision side of the market. Independent insurers compete vigorously to expand the mandatory health insurance market. The main tools of competition are contracts with the best-equipped medical facilities, sound consumer protection procedures, and efficient quality control. But little has been done to encourage competition among providers. In primary care there is no alternative to large state-owned polyclinics. In the hospital sector there are elements of competitive purchasing by insurers, but they are neutralized by the policy of local governments and health committees to support hospitals regardless of their performance.

The private sector is the only area with substantial competition. Hospitals, polyclinics, and private health insurance companies are competing for patients and subscribers. Voluntary health insurance plans are offering additional services.

Lack of management capacity. Despite recent progress in building capacity, purchasers still lack effective management skills. Contracting requires skills that were not needed under direct public provision, including identifying cost-effective medical interventions, planning volumes of care, and negotiating, evaluating, and monitoring providers' performance. These skills are especially needed at the middle and bottom levels of the system, where capacity is extremely weak.

The proposed strategy

The following points are drawn from “Health Finance and Management Reform Strategy in the Russian Federation,”

written in 1996 by a group of independent experts under the USAID Zdrav reform project, with Boston University as the main contractor (Starodulov, Sheiman, and Zelkovitch 1996).

Reforming state commitments. State obligations to provide free care should be balanced with available resources. Declarations guaranteeing comprehensive health care must give way to an actuarial approach that develops a package of medical benefits under the basic mandatory health insurance program. Major changes are needed to implement the new approach.

Improving management of inpatient care, with an emphasis on avoiding inappropriate admissions and tightening requirements on length of stay. This will require better planning of volumes of inpatient care as the main component of the purchasing policies of insurers and local governments. A package of medical benefits should be based on realistic estimates of utilization and identification of excess capacity. According to preliminary estimates, a 12–15 percent drop in the number of bed-days (which can be achieved in 1997) would ease the most dramatic shortages of funding, and thereby partly balance the basic program of mandatory health insurance.

Adopting a new procedure for establishing the basic mandatory health insurance program. The minimum social standard, set by the USAID program, must be approved by the Government and the Duma together with the premium size and budget allocations required to support this standard.

An analogous procedure of determining the state's duties should be accepted at the oblast level. The volume of state budget allocations to implement the oblasts' mandatory health insurance program should be determined by subtracting employer premiums from the approved program cost.

When estimating costs for the territorial mandatory health insurance programs, determining the level of mismatching with available resources and using the data to develop cost sharing. To minimize negative social implications, it is appropriate to set limits on primary care and to provide free medical services to people who cannot afford even minimum contributions. Specific forms of cost sharing have been proposed. There is also the option of rationing utilization by

putting nonacute cases on a waiting list. People who want to reduce their waiting times should pay for part or all of medical service costs (mostly through the voluntary health insurance system).

Shifting excess capacity to the private sector, especially for inpatient care in big cities. A precondition for implementation of this approach is an efficient purchasing policy based on the analyses and planning capacity of both short- and long-term providers. This would require restructuring the hospital sector merging some facilities and changing their case mix. The strategy also proposes restructuring big polyclinics into free-standing physician practices to increase competition between physicians and phase out the least competent ones.

Some of these proposals have become part of the current health policy agenda at the federal level. The Duma is reviewing proposed amendments to the Health Insurance Act providing for a new procedure to determine the volume of state guarantees. The basic mandatory health insurance program for 1997 has been drafted by a group of experts based on the concepts of resource management and actuarial approaches. As mentioned above, Kemerovo oblast is experimenting with planning health care volumes and developing more cost-effective alternatives.

Integrating the system vertically and horizontally. The goal of this effort is to centralize management and finance responsibilities sufficiently to integrate the oblast health care system and equalize resources across local areas. Two mechanisms are proposed. First, establishing an earmarked federal fund for resource equalization based on mandatory health insurance contributions as well as federal budget revenues, with a clear-cut equalization formula and close coordination between the federal mandatory health insurance fund and Ministries of Health and Finance. Second, at the oblast level, centralizing the mandatory health insurance contributions of local governments and allocating most health revenue on a capitation basis.

In addition, the multisource model of funding care providers through mandatory health insurance programs, health committees, and local governments (by types of service, budget items, and population groups) should be scrapped in favor of a one-channel model. All cash inflows to the public health system should be pooled at a level higher than

individual care providers. Specifically, management of 70 to 80 percent of the funds should be carried out by a single funding party—that is, competing insurers. Merging cash flows will allow competing insurers to build up a reasonable care provider contracting model, work out efficient incentives, improve the care delivery structure, and control utilization.

Shifting to payroll tax as the main source of health revenue. With mandatory health insurance funds controlling a negligible portion of funding, it is hardly possible to claim that a transition from the Beveridge to Bismarck model is taking place. Rather, a transitional model is emerging that has no analog in the world. Eventually it should be transformed into either a tax-financed or a social insurance model.

The existing fund-raising scheme should be modified to emphasize earmarked taxes. Their share of total health revenues should increase substantially from the current 26 percent to at least 50 to 60 percent. To achieve this goal, the payroll tax should be increased, although the overall tax burden should be lowered (for example, by lowering income taxes). This implies a transition to the fund-raising scheme used under the Bismarck model, with employees obtaining insurance for themselves and their dependents.

Several arguments favor this shift:

- The health sector remains one of the last budget priorities. An earmarked payroll tax can be a reliable and predictable source of health revenue, even in a declining economy.
- Less dependence on general budget revenues will allow local governments, health committees, and mandatory health insurance funds to clarify their roles and responsibilities. Collecting most revenues, mandatory health insurance funds will serve as the main funding party, responsible for the integrated purchasing policy.
- A shift to a payroll tax as the main source of funding will result in vertical integration of the health system, since under current legislation the centralization of financial resources can be achieved only through mandatory health insurance channels.

Conclusion

The transition to mandatory health insurance has had a controversial effect on health sector performance. Clearly, it

has induced positive changes that would be impossible under the former “frozen” system, with its emphasis on command and control methods. Yet the experimentation of the late 1980s, with health committees as purchasers of care, has not been supported by the health bureaucracy because of a feature inherent to the owners of medical facilities—a tendency to control providers directly and allocate resources on a noncontractual basis. Independent insurers as purchasers of care have started the transition from a highly integrated to a contractual mode of relationships with providers.

The reform has helped stabilize funding during a period of economic crisis, encouraged a transition from input- to output-based payment methods, introduced tougher quality control and elements of consumer protection, and created new incentives to collect information and use it for decisionmaking. However, resource allocation is becoming less equitable, the system is disintegrating vertically and horizontally, and structural distortions in the health system have not been addressed. Thus reform has not fully met original expectations, but it has had some promising outcomes.

The failures of reform can be traced to an unfavorable economic and political environment and to mistakes in the design of the reform. The biggest mistake is the isolation of mandatory health insurance from the overall health system. Because this approach makes the system less coherent, it impedes implementation of the strategy for phasing out excess capacity and overcoming structural distortions in health care provision.

The way health funds are raised cannot automatically increase resources and change the performance of the health system. Rather, the design of relationships between purchasers and providers determine actual changes in the system. At the core of the reform is a shift from an integrated to a contractual model.

The lessons of the Russian reform for other transition economies can be summarized as follows:

- Moving toward a payroll tax-based model may raise additional funding, provided the economy is not declining too steeply and too long. But the change in the funding method cannot be seen as the main area of reform. It is much more important to ensure the operational autonomy of providers, to increase their support for health policy objectives through performance-related payment methods and managed care mechanisms.

- If the mandatory health insurance model is used as the basis of health reform, mechanisms should ensure that this model prevails and can be easily implemented. To that end, payroll taxes should replace general taxes as the main source of health funds, supplemented by state subsidies (with little or no additional tax burden for employers); mandatory health insurance carriers should control most health revenue, with the government directly responsible for a small portion of health care funding and provision; the roles and responsibilities of mandatory health insurance funds and the government should be clearly specified; and coordination mechanisms should be developed. One predominant model of raising and allocating funds may be the best way to avoid vertical and horizontal disintegration of the health system.
- Contracting should be the prevailing model of health care finance, planning, and management. The share of revenue allocated directly by the government should be limited to clearly specified expenditures or services. Contracts should be designed in the context of health policy objectives, the most important of which is to eliminate the structural disproportion and excess capacity of inherited systems.
- Regardless of the fund-raising model, purchasers should encourage competition among providers by allowing more consumer choice, using competitive procedures for contracting, and dismantling local monopolies wherever possible. In addition, purchasers should ensure an open selection of providers in order to fund them for the real value of their services, and carefully monitor and evaluate providers' performance.
- Under the mandatory health insurance model it is critical to base state commitments on an actuarial approach rather than on declarations about free care for all. This requires planning of volumes of care, improving management of health care, and making bold political decisions about cost sharing or rationing of health care.

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Private Insurance: Principles and Practice

Deborah J. Chollet and Maureen Lewis

Private health insurance is a growing phenomenon in much of the world. Fueled by rising incomes and growing dissatisfaction with publicly financed (and often publicly delivered) health care services, private insurance coverage typically begins among large company managers in white-collar industries, and in multinational companies with large numbers of employees. However, informal insurance arrangements exist even in the poorest countries, reflecting a universal desire for financial protection and, in some countries, access to better-quality health care than is offered in the public system.

A private insurance market can offer a number of advantages over a purely public system of health care financing. It can allow governments to develop and maintain smaller and targeted systems of health care financing to serve people who do not have access to private insurance. Private insurance can help health care providers (private and public) rebuild infrastructure and amortize needed investment when government payments for health care are inadequate. In the best cases private insurance encourages health care systems—both the financing and the delivery of care—to innovate and to become more efficient, and offers a point of reference for improving the quality and efficiency of care in the public system. Typically encumbered by politics and bureaucracy, governments may find it difficult to innovate without a private market to lead the way.

Despite these advantages, private insurance presents a number of problems. First, health insurance can be unaffordable for low-income people. In principle, governments can develop subsidies to help low-income people buy insur-

ance, but such systems can be difficult to design and to administer. Second, insurers may want to deny coverage to people who are sick, and to limit coverage for high-cost conditions or services. By refusing people who are sick or by deterring them from seeking coverage, private insurance can contribute to higher average costs in public financing programs that enroll larger populations and serve as the insurer of last resort. The selection of low-cost patients into private insurance can cause serious problems for the public financing system (or the health care delivery system that it finances) if it cannot readily adjust to higher average costs—even when total costs decline. Governments can require private insurers to accept sick people, restrict how insurers price coverage, and require insurance plans to cover various types of high-cost health care. However, insurers may be unwilling to enter or remain in markets with such requirements.

Other problems with private insurance derive from the complexity of insurance contracts. Consumers typically do not understand many aspects of insurance contracts. Because consumers usually are unable to detect which insurers are unscrupulous or financially unsound, the market can attract these insurers. Consequently, insurance regulators play an essential role in stabilizing a competitive private insurance system. However, insurance regulation is more art than science. It should encourage innovations that improve efficiency and service, but it must require financial integrity and discourage practices that threaten the stability and effectiveness of the health insurance system—and, in turn, the health care system that it supports.

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This paper has three sections. The first section reviews private health insurance principles—what private insurance is, how it works, and why insurance practices tend to evolve in particular ways. It then discusses the role of government regulation—specifically, how regulation can stabilize and guide the performance of private insurance markets—drawing on examples from OECD countries (especially the United States, which relies the most heavily on voluntary competitive private health insurance) and developing countries.

The second section addresses the extent of private insurance coverage in developing countries, summarizes selected countries' experience with private insurance, and describes emerging regulation in these countries.

The final section offers conclusions and a number of lessons for developing effective health insurance regulation. By melding theory, practice, and experience, we hope to provide a context for evaluating the role of private health insurance and for designing effective systems of health insurance regulation in all countries.

Principles of Private Health Insurance Markets and Regulation

Like all forms of insurance, health insurance is a system of protection against financial loss. In a health insurance system a group of individuals agree to pay certain sums for a guarantee that they will be compensated for costs related to the use of specific kinds of health care. Formal health insurance contracts typically stipulate that covered health care services must be medically necessary and provided by appropriately trained health care professionals. Because health providers generally prefer to see patients who are insured rather than risk nonpayment for care, in many countries having health insurance (private or public) is equated with having access to health care.

The premise of health insurance is simple: individual health care needs can be unpredictable and costly, but relatively few people need health care at any particular time. Thus, by pooling the risk of large health care expenditures over many people, health insurance can make necessary health care affordable to all.

Private health insurance systems differ from public financing systems in several ways. Most important, a private insurance plan typically competes for customers, either with a public system or with other private health insurance plans. Thus consumers may choose among plans that have different features (more or less financial protection, different access to physicians and hospitals, a greater emphasis on customer service and satisfaction, and so on). Typically, these plans also have different prices, and consumers have to decide if a more desirable insurance plan is worth its higher price. In principle, competition among health plans

will tend to drive up the quality and drive down the price of available insurance. But different prices are often associated with a range of plans that provide different benefits and may be difficult to compare. People with low incomes are unlikely to be able to afford any insurance at all, much less insurance that offers them access to comprehensive health care.

By comparison, in a public financing system consumers typically do not choose among health plans. Moreover, public financing may or may not allow patients to choose among hospitals, physicians, and other service providers. A public system typically is financed in large part through taxes that are unrelated to the use of health care but that may be related to ability to pay. Thus differences in the quality of coverage may not be a problem. Instead, problems with public financing usually derive from the absence of competition and, therefore, the absence of incentives for public systems to respond to consumers. Public systems typically have little incentive to continuously improve quality and customer service and also contain costs.

During the past two decades managed care plans have emerged in a number of countries. Managed care plans combine the financing and delivery of health care in the same contract, offering enrollees both insurance protection and a prescribed network of health care providers. In industrial countries managed care plans have been offered as a lower-cost alternative to financial insurance plans that do not constrain participants' choice of provider. But as enrollment in managed care plans has grown, some plans are also striv-

ing to be known as a better-quality alternative to the fragmented, fee-for-service system of health care delivery. Unless otherwise indicated, in this paper health insurance includes both financial insurance plans (which pay for covered services from any qualified provider) and managed care plans (which pay only for covered services that are delivered by providers who are under contract to the plan).

Roles of Private Insurance

Most countries have a private health insurance sector. In general, private insurance tends to emerge when the public financing system is perceived as financing lower-quality care (usually also restricting patients' choice of provider) or covers only some types of health care. Reflecting the diverse reasons that a private insurance sector would emerge, the role of private insurance varies widely among countries that allow or encourage it. In general, these roles are of three types:

- *Coverage for people who are ineligible for public insurance.* For example, in the United States private insurance is considered the main source of coverage, while public insurance is intended to cover groups whom the private insurance market is likely to fail—the elderly (in Medicare) and people who are unable to work (children, the elderly, and the disabled) and poor (in Medicaid). People who are ineligible for public insurance do not always buy private insurance. Some rely on public hospitals (funded by local government) for care. In communities that do not have a public hospital, people without insurance may be unable to obtain routine care.
- *Coverage for people who withdraw from a universal public insurance program.* For example, in Germany individuals may withdraw from the national payroll tax–financed system of sickness funds, which offer coverage to all resident workers, their families, and retirees. People who withdraw are not required to buy private insurance, but they usually do so. Few people withdraw from the national public insurance system, however, since they can never reenter it. In Chile insurance is compulsory but individuals can choose between buying regulated private insurance or relying on publicly financed and delivered health care. This approach has created a two-tier system in which

healthy and high-income people buy private insurance and others rely on the public system.

- *Supplemental coverage for services not covered by a universal public insurance program.* For example, in the United Kingdom, where the public insurance program is popular and provides comprehensive coverage, people may buy private insurance to finance care from specialists in private practice, “jumping the queue” for specialty care in the public program. Similarly, in Brazil no one may withdraw from the public system, but some people buy private insurance to get more timely or higher-quality care in the public system. In Australia private insurance pays only for hospital care, either in private facilities (which offer patients a choice among physicians) or in public facilities. In the United States enrollees in Medicare, the social insurance program for the elderly and the disabled, can buy private supplemental coverage to pay for the public plan's extensive deductibles and coinsurance amounts, and to pay for major items (such as prescription drugs) that are not covered by the public plan. About one-third of retirees have a private Medicare supplement insurance plan.

Annex tables 1 and 2 provide additional detail about the alternative roles of private insurance in selected countries.

In many countries a large portion of health care spending is financed privately, either through insurance or out of pocket. But rarely does private insurance finance most health care use. In the United States, where private health insurance is unusually well developed (but purchase is voluntary), private insurance financed only about 37 percent of all personal health care spending in 1994; 59 percent was publicly financed. The Republic of Korea is unique in that private insurance is mandatory, and it finances most health care.

Even in industrial countries where public health care financing is universal, private insurance may still finance a significant share of health care. For example, in the United Kingdom private insurance financed 14 percent of health care in 1990. Similarly, in Canada (where public health care financing is universal and private insurance is prohibited from covering publicly insured health care services) a sizable minority of people buy private insurance to finance services that are not covered by provincial programs. Information about the shares of health expenditures financed

TABLE 1

Private and public expenditures for personal health care services, selected countries

(percentage of total expenditures)

Country	Private health care expenditures			Public health care expenditures		
	Issued or prepaid	Out-of-pocket	Total	Social insurance programs	Other	Total
Argentina	—	23	—	36	22	58
Brazil, 1995	—	—	—	—	—	75
Canada	20	—	—	75	—	—
Ecuador	—	63	—	17	14	31
Egypt	—	—	—	9	30	39
France	21	—	—	75	—	—
Germany, 1985 ^a	7	7	14	69	12	81
India, 1990–91 ^b	3	75	78	—	—	21
Jamaica	9	—	—	35	—	—
Jordan, 1994	—	—	53	39	8	47
Kenya, 1994	—	—	—	—	—	43
Niger	14	—	—	67	—	—
Nigeria	44	—	—	45	—	—
Peru, 1995	—	28	—	36	30	69
South Africa, 1993–94 ^c	37	14	55	—	—	45
Tanzania	14	—	—	68	—	—
Thailand, 1992	—	74	74	2	24	26
Tunisia	25	—	—	67	—	—
Uganda	15	—	—	47	—	—
United Kingdom ^d	13	—	14	85	2	87
United States, 1994 ^e	32	3	37	30	29	59
Uruguay	14	—	—	76	—	—

Note: Unless otherwise indicated, source did not provide a reference year. In all cases data are the most recent available.

a. Excludes 4.3 percent of expenditures financed from other sources.

b. Excludes 0.8 percent of expenditures financed by external donors.

c. Excludes 4 percent of private spending categorized as industrial health expenditures.

d. Excludes 1 percent of private spending not allocatable to categories.

e. Excludes 3.4 percent of private spending from other sources. Social insurance figures include Medicare Part A and Part B.

Source: Lewis and Medici 1995; Musgrove 1996; Reinhardt 1995; World Bank 1995 and 1996; Collins and others 1996; Abel-Smith 1995; Levit and others 1996; Fernandez 1997; TAI 1997; Nittayaramphong and Tangcharoensathien 1994; Rafeh in this volume.

by private insurance, out-of-pocket expenditures, and public insurance programs in selected countries is summarized in table 1.

Concept of Insurable Risk

Risk is defined in terms of both the probability and the magnitude of potential health care expenditures. A high-risk situation may entail a high probability of expenditure (regardless of how great the expenditure may be), a high magnitude of expenditure (regardless of the probability), or both.

In general, health care for any illness or condition that occurs randomly among a population is insurable. But in a number of high-risk circumstances health care may be uninsurable. In these circumstances insurers will be unwilling to offer coverage, or will design insurance contracts in par-

ticular ways—usually trying to package coverage for uninsurable risks together with coverage for insurable risks. The kinds of situations in which some or all health care may be uninsurable are described below.

Nonrandom health care risk

Possibly the main reason that health care would be uninsurable is if it were nonrandom. For example, during a war or civil conflict health care risks are systemic: the likelihood that any person will need health care is highly correlated with the likelihood that many others will need care as well. Similarly, in communities where serious, communicable health problems have reached epidemic proportions (for example, in communities with a high incidence of AIDS), much health care may be uninsurable. In these communi-

ties insurers may be unwilling to insure much of the population, or they may refuse health care for the specific injuries or illnesses that are most likely (for example, those due to war or civil conflict).

High-probability health care services

Even when the incidence of illness or injury is random, some health care services may be uninsurable if the probability that people will use those services is very high. The reason such services may be uninsurable relates to how insurance prices are determined. Specifically, the price of an insurance plan that would cover high-probability losses may equal or exceed the cost to consumers of remaining uninsured, even if they could afford to buy coverage.¹ When this is the case, private insurance for those services may not emerge. Instead, insurers may offer insurance products that specifically exclude coverage for high-use services or for services that, when covered, would attract enrollment by high-use patients. In the United States mental health care is one example of such a service; most private insurance plans strictly limit coverage for mental health care or care related to substance abuse.

Very low-cost health care services

Similarly, very small health care expenditures may be uninsurable, whether they are likely or not. For very small losses, the administrative costs of insurance may exceed consumers' demand to be protected from the associated risk. This does not mean that private insurance would not cover such expenditures, but it probably would not cover only such expenditures. Instead, insurers would package coverage for very small expenditures with coverage for more costly, less likely, and therefore insurable services (such as hospitalizations).

Uninsurable individuals or groups

Finally, health care that is insurable for some people may be uninsurable for others. Specifically, insurers are likely to view people as uninsurable if they are likely to need extensive and costly health care. This is the main reason that private insurance (when it is voluntary) does not finance most health care spending, even in countries with a well-devel-

oped insurance sector. If regulation permits, insurers will shun people with chronic health problems, people who are terminally ill, or people living or working in circumstances that suggest a high risk of illness or injury. Even if private health insurance is available to such people, it may be unaffordable.² Although affordable private health insurance may emerge for relatively high-risk populations (such as the elderly), it is likely to be available only to supplement extensive coverage from a public insurance program.

Dynamics of Private Insurance Systems

In private, voluntary health insurance systems, people can choose whether to buy health insurance. In a competitive system they can also choose which health insurance plan to buy. In many countries some workers "buy" health insurance through their employers, taking insurance in lieu of higher wages. In this case the employer is the direct buyer of the health insurance plan for a group. Alternatively, consumers may buy health insurance directly, either as individuals or as a family—much as they would buy any product. As with most products, buyers will tend to choose an insurance plan that has a lower price if its essential features are acceptable.

Insurers can lower the price of a health insurance contract in four ways:

- By trying to insure only low-risk people, denying coverage to people who are sick, or excluding coverage for some conditions.
- By offering less coverage, limiting the scope or extent of covered services.
- By discouraging excessive use of covered health care services.
- By reducing the administrative costs of the plan.

Each of these methods can create immense problems for some consumers. Consumers may be unable to buy adequate insurance (or any insurance), especially if they are sick, and they may find that customer service under their plan (for example, timely and accurate payment of claims) is poor. But each method offers an economic advantage to consumers who are healthy. Because healthy consumers are unlikely to need much health care, they are unlikely to use their health plan extensively if at all. Thus private insurance can offer them relatively low-cost financial protection.

Insuring low-risk people: insurance underwriting and pricing

Consumers seeking insurance are always more knowledgeable than insurers about their health status and about the likelihood that they will need health care.³ Moreover, consumers who have or anticipate health problems are more likely to seek insurance than are healthy consumers.⁴ These facts dictate a great deal of how insurance contracts are sold. Enrollment by people with greater health care needs than the insurer anticipated when setting the price of insurance is called *adverse selection*. Adverse selection can destabilize an insurance pool⁵ and even cause it to fail.⁶ Thus insurers have developed techniques to avoid or reduce adverse selection. Possibly the most important of these is *underwriting*.

Insurance underwriting is the practice of evaluating individual health status and either rejecting potential buyers who are deemed to pose excessively high risk or placing them in plans with other people who represent approximately the same risk. Insurers are inclined to underwrite in order to avoid adverse selection, but competitive insurance markets also tend to reward insurance plans that exclude or isolate people with extensive health care needs. That is, in a competitive market consumers search for the lowest-priced plan that provides them with the coverage they want. Insurance plans that are able to exclude high-risk participants are likely to be less costly and more comprehensive than plans that insure everyone and try to control cost in other ways. Thus consumers who are searching for the lowest-priced insurance plan are likely to prefer an insurance plan that excludes people who are more costly than they are.⁷

Insurers that underwrite coverage typically require applicants to disclose their medical history (allowing the insurer to review their medical records) and may require that applicants undergo a physical examination by an approved physician. They may require applicants to present such “evidence of insurability” at the time the contract is first issued, and again each time the contract is renewed. Thus, while insurance underwriting enables insurers to price insurance plans more accurately, many consumers find it to be personally intrusive and offensive.

Insurers that are able to identify high-risk consumers may nevertheless be willing to sell coverage to many of them if they are able to price insurance differently to consumers

in different classes (or tiers) of risk. The practice of pricing insurance based on enrollee health status (or various indicators of medical risk) is called *tiered rating*. Tiered rating is a natural, stable result of competitive insurance markets: tiered rates simply reflect differences between the risks contained in different insurance pools.⁸ However, critics of tiered rating view it as splitting up risk unnecessarily. They argue that tiered rating makes health insurance unaffordable to people who have health problems or even to people who are in a demographic group that might suggest higher medical expenses. They argue that a single rate class, several rate classes reflecting broad geographic differences in the cost of care (*pure community rating*), or broad rate classes based on demographic factors but not reflecting individual differences in health status (*modified community rating*) would make health insurance more affordable to high-risk people by forcing other members of the pool to subsidize them. But since low-risk consumers tend to prefer low-cost insurance products over subsidizing people with predictably higher health care costs, community rating does not naturally occur in insurance markets. (Underwriting and community rating are discussed further in a later section on insurance regulation.)

Although some insurers re-underwrite enrollees at the time of renewal, they are more likely to rely on a pricing strategy which assumes that customers who are renewing coverage are likely to have more (and more costly) health care needs than new customers in the same plan. The practice of charging more for renewal than for first-issue coverage in the same plan is called *durational rating*.

Durational rating assumes that the claims experience of any risk pool will worsen over time—a phenomenon that in fact is usual in insurance pools. Some participants who were healthy at the start of the contract become sick or injured. Women become pregnant and require maternity and obstetric care. Participants who were unfamiliar with the provisions of their health insurance plan at the start of the contract (and therefore hesitant to seek care) begin to learn what services are covered and what they must pay out of pocket. In plans that restrict choice of provider, participants must select a doctor within the constraints of the plan; they will hesitate to use care for minor health problems if they have not yet taken the time to make their selection. For all these reasons, insurance claims rise gradually

over the course of an insurance contract. Thus insurers are inclined to offer a low price to attract new participants, but they will raise the price at renewal to reflect the growth in average medical losses as the insurance pool ages.

As with tiered rating, durational rating has its critics, who argue that it is evidence of a noncompetitive insurance market. They liken it to simple price discrimination, noting that insurers raise prices when people become sick and (in markets where insurers underwrite) when no other insurer will sell them an insurance plan. Moreover, they argue that insurers use durational rating to “churn” their business: by raising the price of insurance at renewal, durational rating encourages people to shop for new coverage and to change insurers frequently. When they change insurers, they are underwritten again as new business. People who have health problems may be denied coverage altogether, or they may be denied coverage for the care they are most likely to need. People who are healthy are able to find new insurance at a lower price.

In either case durational rating will encourage consumers to sort themselves into different insurance plans, separating high-risk consumers from low-risk consumers. By isolating people into relatively homogeneous risk pools, each of these practices—underwriting, tiered rating, and durational rating—tends to reduce cross-subsidies among people who are insured. In many countries this outcome is socially unacceptable; and the more perfectly insurers are able to achieve this result, the more unacceptable it is. Nevertheless, it is an economically efficient result: it minimizes involuntary transfers among individuals. Regulating insurers to “correct” this result (that is, to force more heterogeneous risk pools) increases excess burden by artificially raising prices to low-risk consumers.

In addition to underwriting and pricing, insurers have developed two other techniques to reduce or to avoid adverse selection in their health insurance plans: marketing to groups rather than to individuals and excluding coverage for preexisting conditions.

Group coverage. To limit the amount of adverse selection that can occur in a health insurance pool, many insurers prefer to insure people who have grouped themselves for reasons other than the purchase of insurance. Such groups typically include employees of a particular firm, members of a professional or trade association, or even mem-

bers of a social organization. Many insurers require that the sponsoring organization pay a significant share (at least half) of the cost of coverage for group members to ensure that even the lowest-risk group member would find enrolling advantageous. Also, insurers may require that a minimum percentage of the group (for example, 80 percent) enroll in the plan regardless of the sponsoring organization’s contribution, further reducing the chance that adverse selection will occur within the group.

Group underwriting reduces the insurer’s need to bear the cost of careful, individual underwriting. Instead, the insurer can look at the broad demographics and circumstances of the group and decide whether it represents an insurable risk. However, in highly competitive markets (where competition has driven insurers to set prices very low) insurers may attempt to underwrite *within* the group—denying coverage to some group members based on their health status. When within-group underwriting occurs, it typically is in insurance markets for small-group coverage. For reasons related to how large-group coverage is negotiated and priced, it is rare in the large-group market.

Preexisting condition exclusions. To deter people from seeking insurance after they become sick, insurance contracts typically exclude coverage for conditions that existed (or that could have been known to exist) when the insurance contract started. Preexisting condition clauses typically stipulate a “look back” period to deem medical conditions as preexisting (for example, medical conditions that were manifest or could have been known to exist six months before the start of the insurance contract). For such conditions the contract will stipulate an exclusion period (for example, six to twelve months into the contract period) during which any care related to a preexisting condition is uninsured, but care related to other conditions is insured.

Preexisting condition exclusions are particularly problematic when participants with ongoing health problems try to change insurance plans, or when they lose and try to regain coverage. When health insurance is provided through an employer, workers may change insurance plans or lose coverage altogether when they change jobs. But the propensity of consumers to buy insurance only when they are sure to need health care is so great—and the potential for adverse selection to destroy a health insurance pool is so signifi-

cant—that in markets like the United States insurers are almost never willing to write an insurance contract that does not exclude or delay coverage for preexisting conditions.

Limiting the scope or extent of covered services

Insurers may be willing to insure relatively high-risk people if they can deny coverage for specific high-cost illnesses or procedures. Coverage exclusions for care related to specific high-cost illnesses (for example, hemophilia or diabetes) or for specific procedures (for example, organ transplants) reduce the amount of insurance available to some or all buyers in the market. These exclusions differ from preexisting condition exclusions in that they apply equally to all buyers of that particular plan, regardless of health care status at the beginning of the insurance contract. Moreover, such exclusions are permanent: they exist for the life of the contract.⁹ U.S. insurers have used coverage exclusions for services such as obstetric care to develop low-priced plans that predictably attract low-risk buyers; in this case a disproportionately large number of young men.

Discouraging excessive use of covered services

Consumers tend to use more health care services when they are insured than when they are not, even when their health status does not change. This tendency is called *moral hazard*, a term that at one time implied a judgment about consumer dishonesty but no longer carries that connotation.

Moral hazard partly reflects efficient consumer behavior: people use more health care when insurance reduces the price that they must pay for each service. To a fully insured consumer, the cost of using an additional health care service is zero; thus they are very likely to use it.¹⁰ But since consumers typically rely on the medical judgement of health care providers, much moral hazard behavior reflects the propensity of providers to deliver more services when insurance makes them affordable for their patients.¹¹ Most insurance plans incorporate cost-sharing features that are designed to deter excessive use of medical care by making consumers pay some of the cost of insured health care.

In some industrial countries (and especially in the United States) managed care has emerged in part to control moral hazard—as it relates both to consumers' propensity to use

more care and to providers' inclination to offer more care when it is insured.¹² Managed care plans typically establish networks of primary care physicians from which enrollees choose, as well as a network of specialists under contract. The plans cover expenditures for specialty care only if the primary care physician refers the enrollee to a specialist in the network. Managed care plans typically attempt to establish a lower-cost "culture" of practice among their primary care physicians, emphasizing greater use of preventive care and less aggressive treatment for some conditions.¹³ Thus, while the features described below are widely used by financial insurance plans, managed care plans use them much less often and much less extensively.

Deductibles. An insurance plan deductible requires the insured consumer to pay all charges for covered services out of pocket until the total cost reaches the deductible amount. After that, the insurance plan begins to pay. Insurance plans also may impose separate deductibles for specific types of services (for example, hospital care or prescription drugs), either to deter unnecessary use or to avoid the cost of administering very small claims.

To administer a deductible, the insurance plan must keep an accounting of each enrollee's expenditures for covered services (and adjudicate which expenditures qualify for reimbursement from the plan), even though the plan does not issue payment. Although this process has been greatly facilitated by the growing use and sophistication of computer technology, deductibles nevertheless require careful record-keeping and, therefore, administrative cost for the plan.

This cost is worthwhile if the deductible effectively deters unnecessary use. However, a number of studies have found that patients may not distinguish appropriately between necessary and unnecessary health care. Instead, they may respond to deductibles and other means of cost sharing by delaying necessary care, potentially raising the ultimate cost of care by seeking care too late. Still, in the short term (that is, within the duration of an insurance contract) deductibles are very effective in reducing the use of covered health care and, therefore, in reducing plan cost (Lohr and others 1986).

Deductibles are rare in managed care plans, in part because they are administratively infeasible for most of the care that the plan insures. That is, because the health care

providers who contract with managed care plans characteristically do not charge a separate fee for each service, most plans do not have an obvious way to compare the value of delivered care against a deductible. Also, the concept of a significant deductible is incompatible with managed care plans' emphasis on preventive care and low-cost care within a network of primary care providers.

Coinsurance. Coinsurance is the share of costs for covered services that the consumer is required to pay out of pocket. Typical coinsurance levels for covered services range from 10 to 20 percent. Like a deductible, coinsurance is intended to reduce moral hazard by imposing some of the cost of care on the insured consumer. Coinsurance may apply uniformly to all covered services, or only to some—for example, only to inpatient hospital care. Separate, higher coinsurance amounts may apply to types of care for which underwriting is particularly difficult and high use can pose a serious cost problem for the plan—for example, outpatient mental health care.

Insurance contracts that use coinsurance typically also set an out-of-pocket limit above which the coinsurance amount drops to zero. For example, consumers may be required to pay a \$10 deductible, plus 20 percent of any expenditure for covered services, until the sum of these out-of-pocket payments reaches a specified amount. At that point the insurance plan will pay 100 percent of covered charges up to the plan's external limit, if any. The enrollee's cost of using health care in such a plan is depicted in figure 1.

As with deductibles, coinsurance provisions create administrative expense: they require insurers to keep a careful accounting of accumulating health care expenditures for covered services, and to adjudicate each claim. For the same reasons that they are unlikely to impose deductibles, managed care organizations are unlikely to use coinsurance to deter moral hazard.

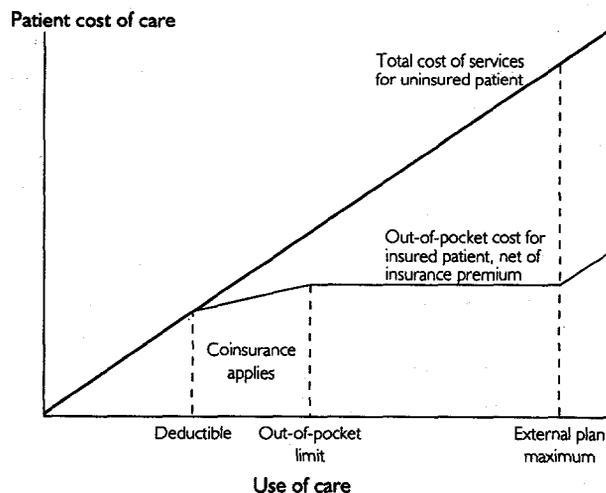
Copayments. A copayment is a small fee that an insurance plan requires patients to pay each time they obtain a covered health care service. Like coinsurance, copayments are intended to encourage patients to exercise judgment about their need for care. Copayments typically apply to specific services that are discretionary in nature (such as

physical therapy or a second routine examination during a calendar year). Unlike coinsurance, copayments impose no significant administrative cost; they require only basic record-keeping by health care providers (who typically collect the copayment). Because copayments are administratively simple, managed care plans are more likely to use them than any other form of cost sharing to manage consumer demand.

Internal and external limits on coverage. Most group insurance plans and all individual insurance plans place a limit on the cumulative amount that the plan will pay for covered services. An external limit on coverage is a limit on the total value of coverage under the plan, usually over the full period of the contract (for example, total plan payments per year). An internal limit on coverage is a limit on the total value of coverage for a particular service covered by the plan. Commonly, insurers will place internal plan limits on coverage for mental health care, but may also limit coverage for inpatient care. Internal limits may be denominated as units of currency, or as a maximum number of inpatient days or outpatient visits. Many plans place one or more internal limits on coverage as well as an external limit.

Plan limits serve a number of purposes for insurers. Internal limits may deter people who anticipate needing substantial amounts of a particular type of care from seek-

FIGURE 1
Out-of-pocket health care expenditures for an uninsured patient and for an insured patient in a conventional health insurance plan



ing health insurance, since the plan would not cover all the care that they would need. Thus insurers are able to limit the cost of failing to underwrite accurately. Plan limits also limit the amount of moral hazard that the plan will sustain. With respect to mental health care services, moral hazard is the most significant reason that insurance plans typically place an internal limit on coverage. Although such services may be curative, whether mental health is restored is largely a subjective judgement by the patient or the provider—neither of whom is directly responsible for paying most or any of the cost of care. Finally, plan limits reduce the amount and cost of reinsurance that an insurer needs, either as a matter of prudent business practice or to comply with regulation.

Plan limits have very different effects on consumers and health care providers. Limits on coverage may leave a significant “tail” of uninsured expenditures, exposing consumers to financial risk and the risk of needing to terminate care because they are unable to pay. For providers, professional ethics and concern for the patient may conflict with the plan terminating payment for care. Even in cases where plan limits are very high (for example, in employer group insurance plans in the United States most external plan limits are \$1,000,000 or more), patients who reach these limits may be in-hospital, and the hospital may be ethically unable to terminate care. While these cases are rare, when they occur the hospital generally continues care without payment.

Reducing administrative costs

While the practices and features of insurance plans described above effective in avoiding or reducing adverse selection and moral hazard, some can raise a plan’s administrative costs. For example, while careful underwriting can be an effective way to avoid adverse selection, it can also add significant administrative cost. As a result insurers have developed a number of practices that are effective alternatives to careful underwriting.

Possibly the most important of these practices is group underwriting—that is, accepting or rejecting entire groups instead of screening individual health status. Moreover, writing coverage for large groups may offer other administrative-cost advantages for insurers. For example, the cost of

marketing to a few large groups of enrollees can be much lower than the cost of marketing to many small groups or individuals. Finally, client-initiated turnover in the insurer’s business (and thus the administrative cost of the contract) can be less. Employee turnover in large firms is lower than in small firms (so fewer workers enter and leave the plan during the contract period), and large firms are less likely to go out of business than are small firms.¹⁴

The economic advantages to insurers of writing group coverage generally diminish with the size of the group.¹⁵ For very small groups the administrative cost of a group insurance plan approaches that for individual coverage. U.S. insurers report that the marketing and administrative costs of individual and small-group coverage can make coverage 40 percent more costly per enrollee than the same coverage for a large group. Moreover, because many insurers do not want to undertake the considerable cost of aggressive underwriting, some of the largest insurers (those that can achieve significant economies of scale for administrative costs such as claims processing) will not cover individuals or small groups. The absence of large insurers may further explain the high administrative costs in these markets.

The greater administrative cost of insurance for individuals and small groups in the United States can make coverage extremely costly and, for many, unaffordable. Lacking any legal requirement that everyone be insured, many individuals and small groups without access to group coverage are uninsured. This experience is not universal, however. In the Czech Republic quasi-private insurance plans that compete with the large, central government plan enroll groups and individuals alike, and find feasible the statutory 7 percent limit on the plans’ margins over medical losses. In Australia, where private insurance supplements public coverage but covers only inpatient care, private insurers are not particularly concerned about adverse selection or the high administrative cost of marketing to individuals, and are not inclined to foster a group market.

To reduce the cost of underwriting coverage for groups or individuals, insurers may practice a form of underwriting commonly called *redlining*: denying coverage to broad classes of groups or individuals without actually considering their insurability. For example, if insurers deem residents of a particular geographic area—such as a low-income urban area—as high risk, they might routinely deny coverage to

anyone who lives or works in that area. Insurers might also redline workers in particular industries or occupations if they are likely to be exposed to hazardous materials or suffer a job-related injury.¹⁶

Finally, various plan design features that curb the high use of health care under the plan may also yield administrative efficiencies. For example, a plan deductible allows the insurer to avoid fully processing and paying small claims. The net effect on administrative costs is likely to be small, however, since financial insurance plans must adjudicate even small claims in order to accumulate claims against the deductible.

Managed care plans that pay their primary care doctors a salary or a fixed fee per patient (instead of fee-for-service) can vastly reduce the amount of paperwork involved in sending and paying bills and thus can substantially reduce administrative costs. But because well-run managed care plans require active management of a large network of health care providers, the net cost advantage of these plans typically relates to lower rates of hospital admission among managed care participants, not to lower administrative costs.¹⁷

Government Regulation of Insurers

Government regulation of insurance typically has three goals: maintaining a stable insurance market, protecting consumers, and maximizing consumer participation in the private market. Various practices related to each of these goals are described below.

Stabilizing the insurance market: standards for insurer entry and exit

Regulation to stabilize insurance markets includes setting financial standards for market entry and ongoing operations, ethical standards for market entry, and conditions for insurer exit from the market. Entry or exit standards that are set too high will allow fewer insurers into the market and reduce competition among insurers that do enter. In turn, insurance prices are likely to be higher in a less competitive market, and buyers will have less choice among insurance products. But standards that are set too low can allow financially unsound or unscrupulous insurers into

the market. Such insurers prey on unsophisticated consumers who find many aspects of insurance contracts difficult to understand.

Financial standards for entry and operation. The most effective and efficient way to minimize the chance that people will buy insurance from financially insecure insurers is to bar such insurers from entering the market. Thus governments may require that insurers be licensed.¹⁸ As a condition of receiving a license, insurers may be required to meet minimum standards for financial soundness and to demonstrate past or intended ethical business practices.

As evidence of financial soundness, governments may require that an insurer meet minimum capital and surplus requirements. A capital requirement establishes a minimum level of financial assets for insurers seeking to enter (and remain in) the market. Governments may require that insurers hold these assets in highly secure investments.¹⁹

In addition, governments that regulate private insurance typically establish a surplus requirement: a minimum level of financial assets that an insurer must hold relative to its estimated liabilities (principally, its estimated medical losses). Both capital and surplus requirements may be set by law, and they may vary by class of business. For example, insurers that write both personal health insurance and personal life insurance may be required to meet separate minimum capital and surplus requirement for each class of business.^{20, 21} The government also may set the surplus standard higher for insurers that write a larger amount of coverage. By scaling the surplus standard to the insurer's volume of business, the government can encourage insurers to enter the market and reduce the likelihood of a major market disruption from the insolvency of a large insurer. Finally, governments may require that insurers entering the market bring a higher amount of initial surplus, which they may then deplete (so long as it exceeds the minimum surplus that they must hold on an ongoing basis) in financing their initial operations.

Successful solvency regulation entails intensive periodic review of each insurer's fiscal condition. Typically, insurance regulators are given broad statutory authority to audit and investigate insurance companies. U.S. insurance regulators even have statutory authority to assume control of domestic insurers in financial difficulty, with the intent of "rehabilitating" the insurer—modifying the insurer's man-

agement and financial practices to improve its prospects for remaining solvent.²²

In developing countries establishing solvency standards for insurers entails careful review and standardization insurers' accounting and actuarial practices. If regulatory standards for capital and reserves are to be meaningful, insurers must use a common accounting convention to measure the value of assets and liabilities. The government must establish the basis for evaluating assets and health insurance liabilities, and require all licensed insurers to report on that basis. The risk of financial distortions (and the opportunity for unsound financial practice) by insurers rises when accounting principles are unclear and industry practice varies.

However, even with common accounting practices, anticipating health insurance liabilities in developing countries can be extremely difficult. The introduction of private insurance may cause health care prices and real spending for health care to accelerate sharply. Thus the integrity of the plan's actuarial estimates rely fundamentally on how well the plan is able to control the cost of covered services. Such controls are generally more reliable in managed care plans, especially if they pay providers a fixed fee per patient (called *capitation*) for most or all care covered by the plan.

Because plans without meaningful expenditure controls may be unable to anticipate liability with sufficient accuracy, regulators must carefully consider whether to let them enter the market. If the insurer's premium levels are likely to be insufficient, it is at great risk of insolvency—even when it holds the required reserves. Especially in newly developing markets, regulators should review the adequacy of insurance premiums as vigilantly as they review compliance with financial standards.

Governments can also prohibit specific organizational forms of insurance that are deemed financially unstable (even though they may purport to broaden enrollment in private insurance plans). These may include multiple-employer trusts, fraternal organizations, or membership associations. Since not all regulators agree on which organizational forms are inherently unstable, some jurisdictions may allow organizational forms that others prohibit.

In the United States and many other industrial countries insurers are prohibited from directly engaging in any business that is not reasonably related to insurance. For example, insurers may be prohibited from affiliating with banks,

based on concerns that the insolvency of one could contribute to the insolvency of the other. But insurers may form a holding company to affiliate with an unrelated enterprise.²³ Still, any affiliated enterprise can destabilize an insurer, and insolvency problems have resulted from holding company affiliations (U.S. House of Representatives 1990 and 1994). Especially in countries with a newly emerging private insurance sector, governments should consider regulatory safeguards in order to prevent such situations.²⁴

Finally, many countries have some arrangement to guarantee insurance benefits if an insurer becomes insolvent. In some countries the government operates the guaranty system; in others a government-authorized private agency or association performs that role, but all insurers are required to participate as a condition of licensing.²⁵ Government-authorized private guaranty funds may be financed by an assessment on all health insurers (usually at the time of the insolvency). These assessments may be limited by law (for example, to 2 percent of gross premium volume per year). Government-run guarantee funds also may be financed from sales taxes on insurance premiums. If the guaranty liability exceeds what is collectible within the annual assessment limit, participating insurers may be reassessed each year. Thus guarantee-fund payments to policyholders may stretch over a number of years in the case of a large insurer insolvency. Insolvency guarantee funds may pay policyholders only a portion of each claim (for example, 60 percent), and may leave policyholders responsible for much of the cost of care that would have been paid by the insurer had it remained solvent.

Nonfinancial standards for entry and operation. Regulation governing the ethical practice or intent of insurers may take any of several forms. Some governments require that officers, board members, and incorporators meet residency or citizenship requirements. Some countries require that certain minimum ownership rights be held by nationals. Governments also may investigate the experience or character of individuals seeking licensing.²⁶ They may require that insurers domiciled in another jurisdiction or country demonstrate that they are lawfully organized and licensed in their home jurisdiction. They may require that insurers seeking a license submit a proposed business operation plan, assessing the economic soundness of that plan as part of

the process of admitting the insurer into the market. Finally, states may prohibit some organizational forms of health plans if their practices are deemed too difficult to monitor and regulate. For example, at least one U.S. state (Minnesota) will not license managed care plans that are operated as for-profit enterprises.

Conditions for insurer exit. Constraints on market exit can be as important as restrictions on market entry. Allowing insurers to haphazardly enter and leave the market increases market instability and erodes consumer confidence in private insurance systems. Ideally, insurance regulators should examine an insurer's commitment to staying in the market as a condition of admitting them to the market. But such an appraisal can be difficult, and regulators may instead rely on establishing conditions for exit.

Exit rules for insurers may take several forms, all of which are designed to minimize market disruption as a result of insurer exit. At a minimum, departing insurers should be required to give reasonable notice to policyholders and to submit a plan demonstrating how claims and other obligations will be satisfied. They also may be required to pay a processing fee to the regulatory agency to cover the cost of overseeing an orderly exit (Skipper 1992).

Reporting requirements, examinations, and professional oversight. Reporting requirements constitute the core of insurer surveillance. Governments should require all licensed insurers to submit full financial reports annually, and may require abbreviated financial statements quarterly. At a minimum, these reports should allow the regulatory agency to understand whether the insurer is operating within the financial limits dictated by law or by prudent business practice.

In most developed insurance markets governments conduct periodic onsite examinations of insurers' financial records. For example, all U.S. states require onsite examination of domestic insurers, typically every three to five years. Regulators also might conduct a targeted examination if they suspect that an insurer is in financial difficulty (Skipper 1992).

Governments also may enlist the accounting and actuarial professions to discourage inappropriate insurer behavior and to reveal it if it occurs. For example, insurance regulators may require insurers to submit an independent

actuarial opinion certifying the adequacy of their reserves relative to the nature of the risk they have assumed. (All U.S. states now require that licensed insurers submit an actuarial opinion each year.) Regulators also may require that insurers submit to a periodic financial audit by an independent certified public accountant, and that the results be disclosed.²⁷ The costs of these professional certifications should be paid by the insurer.

Consumer protection

Consumer protection regulation typically is of two types: regulation that governs the language and marketing of insurance contracts and regulation that governs the relationship between insurance plans and health care providers. Given the complexity of even relatively simple insurance contracts, government regulation of the language of insurance contracts can be extremely important. Governments can require that insurers explain coverage using common terms and that specific features of health insurance plans be explained in all insurance contracts. Such features might include the plan's deductibles, coinsurance provisions, copayment amounts, out-of-pocket limits, and internal and external limits on coverage. Plans that contract with provider groups (physician group practices or specific hospitals, for example) and restrict or modify coverage according to policyholders' use of those providers should also be required to fully disclose the nature and details of those limitations. To enforce the use of clear language and honest marketing practices, insurance regulators should require insurers to submit all marketing and enrollee materials, and they should be prepared to review these materials in a timely manner.

In practice, much of the consumer protection provided by regulatory agencies occurs only after a problem arises and in response to consumer concerns and complaints. Prompt and vigorous response to consumer grievances can be an effective and efficient way to augment review of insurers' contract language and marketing materials. This is especially true in large or fast-growing insurance markets, where the paperwork burden of meticulous document review can overwhelm a small regulatory agency.

Regulation that governs the relationship between health plans and providers is sometimes also considered consumer (or patient) protection. Typically, such regulation seeks to

preserve the professional autonomy of health care providers—especially if they participate in managed care contracts, which may discourage providers from recommending high-cost treatments or from referring patients to specialists for care.

Two main forms of regulation have emerged affecting the relationships between health care providers and managed care plans. “Any willing provider” regulations prohibit insurers from “locking out” physicians or other health care providers who are willing to accept the plan’s payment levels, practice guidelines, and reporting requirements for participating providers. Conversely, antitrust regulation may prohibit health insurance plans from “locking in” providers—that is, requiring that providers who contract with them not accept payment (or patients) from any other insurance plan.

Health care providers generally view regulation of either type as essential to maintaining their professional independence and, therefore, protecting the best interests of their patients. Health insurance plans, however, view these regulations as limiting their ability to establish a professional culture of conservative (low-cost), high-quality medical practice among providers who contract with them.

There is no simple resolution of these competing perspectives. But many analysts believe that the development of generally accepted measures of health care quality would reduce the need for such patient protection regulations. They contend that quality measures would allow both regulators and enrollees to monitor the quality of care in competing managed care plans and in financial health insurance plans. They believe that health plans would begin to compete on quality (as well as on price)—reducing the need to regulate relationships between health insurance plans and providers as long as the quality of health care financed by the plan remains acceptable.²⁸

Improving the fairness of private insurance

In the United States a growing body of state regulation is emerging to reconcile insurer practices with social perceptions of fairness. These regulations generally are of three types: those prohibiting or restricting medical underwriting, those prohibiting or restricting insurers from setting prices based on health status, and those requiring insurance

plans to cover specific types of services or health care providers. Each type of regulation is discussed below.

Guaranteed issue and renewal. Guaranteed issue regulation requires insurers to accept all applicants for coverage, regardless of their health status. By contrast, jurisdictions that require guaranteed renewal (and by inference, not guaranteed issue) allow insurers to underwrite when they first issue coverage, but prohibit them from underwriting when the insurance contract is renewed. Thirty-six U.S. states require guaranteed issue of some or all insurance products in the small-group market; thirteen require guaranteed issue in the individual health insurance market.²⁹

Guaranteed issue regulation may require insurers to accept applicants into any health insurance plan that they offer, or into only one or two selected plans. By itself guaranteed issue regulation does not address how insurers may set prices for these plans.

Community rating. Sixteen U.S. states require insurers to use some form of community rating—to charge one price for all plan participants within broad geographic or demographic groups, without regard to health status. Community rating regulation prohibits insurers from using the tiered or durational rating techniques described earlier. Alternatively, some states require insurers to price within specified “rate bands”—that is, they allow insurers to price coverage according to health status, but limit the variation in rates around the median rate that insurers charge for the same plan.

Insurance rate regulation is intended to subsidize plan participants who are more likely to need health care. Thus, to achieve a public policy goal (more affordable coverage for people with ongoing health problems), rate regulation creates some economic inefficiency by forcing involuntary cross-subsidies among plan participants.

Experience suggests that guaranteed issue regulation neither destabilizes health insurance markets nor causes a significant increase in the average price of health insurance. However, actuarial research indicates that it does raise the price of coverage for some low-risk consumers (American Academy of Actuaries 1993). In states where insurers are required to guarantee issue and to community rate health insurance products, some small insurers have left the market, and some insurers have complained that plan costs have

risen because younger and healthier enrollees have left their plans (Chollet and Paul 1994). However, it is unknown whether participants who exited these plans became uninsured or simply changed plans.

In newly emerging private insurance markets the transition effects of guaranteed issue and rate regulation might be greater than in well-established markets. Well-established markets may have one or two relatively large insurance companies that anchor the market and that absorb much of the market's high risk. In most U.S. markets Blue Cross and Blue Shield plans play this role. Many "Blues" plans have periodic open enrollment (once or twice a year, for three to six weeks) during which they guarantee issue. (In some states periodic open enrollment is a condition of the Blues' non-profit, tax-exempt status.) Moreover, the Blues historically have community rated their products (again, sometimes as a condition of their nonprofit status), although many no longer do so. In markets that have one or two large insurers anchoring the market and accepting all applicants (at least periodically), the large insurer may already hold much of the market's high risk, and smaller insurers may develop new marketing practices that in effect preserve their underwriting advantage.³⁰ Thus strict guaranteed issue and community rating regulation may have few early effects in well-developed markets.

But in developing markets that have only a few small insurers writing coverage, such regulation may have a chilling effect on market development. Health insurers in developing markets are likely to experience immediate entry of high-cost participants, to have a smaller base over which to spread risk, and to have no ready reinsurance market to finance the high risk that regulation requires them to accept.³¹

Rate review or approval. Governments that do not require insurers to community rate their health insurance products may still undertake rate review. They may even require that insurers receive government approval for their rate levels and increases. Where rate review and approval are required, insurance regulators typically examine the reasonableness of insurers' loss ratios: that is, the ratio of payments for medical care to premium income. In effect, approval of the insurer's rates is approval of their loss ratio.

A number of U.S. states have established target loss ratios for health insurers; eight states require insurers to meet or exceed a minimum loss ratio in order to have any rate increase

approved. The federal government also has set a target loss ratio for insurance products that supplement Medicare coverage for the elderly and the disabled, although it leaves rate review to the states.

Mandated benefits. Health care providers can be the greatest opponents of insurance plans that limit the scope of covered benefits as a way to offer low prices. Health care providers who favor specific benefit mandates usually make two arguments: that without a mandate the insurance market is evicting patients who need a specific type of care and who cannot afford to pay for it out of pocket; and that their services represent lower-cost alternative to other types of care. The second argument is usually very difficult to prove conclusively.

In every U.S. state various types of health care providers (psychiatrists and psychologists, chiropractors, physician assistants and nurse practitioners, marriage counselors, homeopathic medical practitioners, and even faith healers) have sought and won legislation requiring that insurance plans cover their services. Their success has led states to regulate the content of health insurance plans extensively, encouraged employers to self-insure (by federal law, the states cannot regulate self-insured plans; Jensen, Cotter, and Morrisey 1995), and increased the cost of health insurance (Jensen and Morrisey 1990; Jensen 1993). Most state legislators have come to understand the economic inefficiency that these regulations can create, and the rate of new enactment has markedly diminished.³²

Some mandated benefits are not so clearly inefficient, however. Instead, they may correct market failures that arise from consumers' misinformation about the coverage that their plan provides. For example, every U.S. state requires health insurers to cover newborns immediately under the parents' family health insurance plan. This requirement prohibits insurance plans from deeming any congenital health problem of the newborn as a preexisting condition and, therefore, denying coverage for care that is often life-saving and usually very costly. If few parents anticipate that their policy would not cover such care when they purchase family insurance, such regulation may correct for consumers' imperfect information. However, it also may raise the price of coverage, and probably encourages insurers to develop health plans that exclude coverage of obstetric care altogether.

Private Insurance in Developing Countries

The first section of the paper has provided the context for reviewing the coverage and circumstances of private insurance in low- and middle-income countries. Although the theory and practice of insurance have been honed in OECD countries (particularly the United States), non-OECD countries have drawn on that experience, experimented with different approaches, and had distinct experiences with private insurance. This section emphasizes the practice and experience that has evolved from these efforts.

The extent of private insurance in any country is related to a number of factors. Among the most important are personal income, maturity of financial markets, extent of private health care services, cultural factors, and government policy. These characteristics also determine how insurance evolves and its pace of growth. Annex table 2 summarizes the characteristics and coverage of private insurance in thirty-four non-OECD countries, as well as in Mexico and Turkey. The table includes countries with relatively strong insurance markets, as well as some with emerging markets. Countries with negligible markets, like Bangladesh and Ghana, are not included despite available data.

In Africa private insurance coverage is highly variable, ranging from South Africa (with a well-established market and 16 percent coverage) to countries like Angola (with no measurable market). Outside of Côte d'Ivoire, Kenya, Nigeria, and Zimbabwe private insurance is negligible, although the potential for growth exists throughout the continent. The Commonwealth countries in the region are the most likely to have an established private insurance market. Although these markets have a foothold in Tanzania and Uganda, they are limited. Higher-income countries with large employers have pioneered and established private insurance, but small, poor communities also have chosen to share risks.

Private insurance is extensive in Latin America and the Caribbean, where a long tradition of private providers and payers offers a solid base for expansion. Moreover, the proliferation of social insurance through social security institutes and employer-based sickness funds throughout the region has made reliance on insurance to finance health care

common practice. The existence of mature insurance markets has helped strengthen the health insurance industry and support its growth.

Traditionally, much of Asia has relied on out-of-pocket expenditures to finance health care, and even public programs tend to require copayments. Private health insurance is negligible in these countries (see annex table 1). Indeed, China has no private insurance. The one outlier is the Republic of Korea, which has the most privately financed health care system in the world, with 94 percent of the population covered by compulsory private health insurance. India, with its 3.3 percent coverage and 1 billion people, has the most individuals covered (33 million). In all these systems, copayments are attached to the use of most services. At the other extreme, Bangladesh and Pakistan are seeing the beginnings of an insurance industry, with current enrollments in the thousands.

Although private health care is common in the Middle East, private insurance is just being established. Lebanon's emergence from years of civil war make it an exception, but its private sector-oriented health system will likely lead to rapid growth in insurance-type financing. With an established private sector and rising incomes, demand for private insurance is likely to increase in other Middle Eastern countries, where it already has a significant foothold. Egypt is a prime example (see Rafeh in this volume).

Eastern Europe and Turkey have limited private insurance coverage. In Eastern Europe low coverage can be ascribed to comprehensive social insurance, and in Turkey to high inflation, traditional distrust of life insurance, and cultural factors (Fuenzalida-Puelma 1996). The region's potential for private insurance is strong given rising incomes and growth in private providers. Moreover, some Eastern European countries perceive private insurance as a source of funds to recapitalize their health care delivery system.

In some countries community groups, rural cooperatives, and mission hospitals have created networks of informal insurance funds to finance catastrophic care or health services for members. Nonprofit organizations like the Grameen Bank in Bangladesh have expanded into health insur-

ance-type arrangements, and cooperatives and other community endeavors have led to private arrangements for financing health care. Government has taken a role in Zaire and Guinea-Bissau, providing physical infrastructure and often seed capital to establish community insurance funds that are usually designed, managed, and operated by communities to pay for health care services for a defined population (TAI 1997; Shaw and Griffin 1995; La Forgia and Griffin 1993).

Private health insurance coverage data give an idea of the extent of health insurance in developing countries. But the nature of those systems—how they operate, how they are regulated, and how well they meet the objectives discussed in the first section of this paper—vary significantly. Indeed, the orderliness conveyed in the first part of the paper is not always apparent in these countries. The following sections discuss the characteristics of these countries' health insurance systems, emphasizing the differences relative to U.S. approaches; impediments to development of a private insurance industry in different countries; and the role of health insurance regulation, and its scope and limitations, in developing countries.

Health Insurance in Developing Countries

As in OECD countries, private health insurance is rarely the main source of health care financing in developing countries. Instead, most private insurance is supplementary (an outgrowth of social insurance that covers services not included by the social insurance or "primary insurance" benefit plan) or additional to services financed under an existing public system. Characteristics of insurance are very different from those in industrial countries. Indeed, even the rationale for insurance in non-OECD countries is different, with basic costs covered but rare, high-cost procedures excluded.

Benefit plans

Private health insurance plans in developing countries typically exclude costly or chronic diseases and have low benefit ceilings (in terms of number of inpatient days or total expenditures). In many cases these limits translate into insurance plans that do not cover catastrophic care but cover

everything else. In Turkey cancers, heart conditions, and even high blood pressure are outside the package of most benefit plans, and in Brazil plans typically exclude infectious diseases, chronic conditions, mental illness, kidney dialysis, and AIDS (Fuenzalida-Puelma 1996; Lewis and Medici 1995).

Argentina's sickness funds have highly differentiated benefit plans because benefits are a function of earnings (since the revenue base is drawn from a percentage of wages). Thus high-wage industries provide insurance that covers a full range of surgeries, psychiatric services, cancer treatments, and dental care, while low-wage industry insurance funds cover only limited care, strictly ration access to costly care, and force members to rely on public facilities (World Bank and IDB 1997).

Uruguay's sickness funds, the *Instituciones de Asistencia Médica Colectiva*, have a legally mandated benefit package and exclude services that are covered by the reinsurance fund (see below on reinsurance). Private insurance is often purchased for specific types of benefits: emergency, medical, surgical, diagnosis, or hospitalization. There are no requirements for private insurance benefits.

In Korea expensive high-technology medical services (CAT scanning, magnetic resonance imaging, PET scanning, some chemotherapy) are excluded from private insurance plans, and hospitalization coverage is limited to 180 days a year (210 days for the elderly; Yang 1996). In addition, the quality and scope of benefits varies by income level. This pattern is also apparent in Chile's private insurance companies—higher-income industries receive a more generous package of services because their contributions are higher (World Bank forthcoming).

Benefit plans are often regulated by government to ensure a basic level of coverage under private insurance plans (as in Uruguay for social insurance and much of Europe for both social and private insurance). In countries where government does not play a role in defining primary insurance coverage, benefits are less likely to include low-risk, high-cost events, and high-risk individuals are less likely to obtain private coverage.

In the absence of government requirements on the scope of benefits, private insurers typically cover only low-risk groups, leaving government to finance catastrophic care through supplementary insurance and to provide services

to the chronically ill as the insurer of last resort. Although market segmentation may bolster the insurance industry and may also maximize the number of people who are insured voluntarily, it has social consequences that many countries find unacceptable. Hence the role of health insurance regulation.

Government policy and health insurance

Most governments have not taken a strong position regarding private health insurance. And since insurance regulation is almost nonexistent in most countries, policymakers are not always aware of the extent or nature of private financing. Some policies, however, encourage private insurance. Among the most important is not having a policy against private insurance, or at least allowing companies to experiment with different ways of financing health care for employees.

Policies that permit people to opt out of social insurance (although usually with some nominal payment to the government) are also important, as in Egypt, Singapore, and Uruguay. But opting out may have negative effects on the risk pool that remains under social insurance. The young and the healthy are the most likely to opt out, leaving lower-income and less healthy individuals in the social insurance system and raising the average cost of services in the publicly sponsored system. Even where there are costs to opting out—as in Egypt, where 1 percent of earnings must continue to be paid to the government (Rafeh in this volume)—these tend to be nominal, and do not discourage people from buying alternative coverage.

Developing country governments often allow opting out in order to share the cost of health service delivery with the private sector, provide citizens with choice of payers and providers, and reduce the overall burden on public provision. More recently, governments have seen private insurance as the possible financial base for recapitalizing a decayed health delivery infrastructure; this is most relevant in Eastern Europe. Some countries have responded to demands for choice by allowing competition among approved private providers under a regulated or mandated (social) insurance system (Brazil, Chile, Korea, Philippines, Uruguay) or by contracting out specific services to private plans. Chile and Korea rely extensively on opting out of the public sys-

tem but require that citizens have health insurance coverage—which is why both countries have a robust private insurance industry. The costs of this private coverage are borne by consumers, reducing overall government expenditures.

In Argentina and Uruguay users are not satisfied with the cost and quality of services provided under the sickness funds, which is putting pressure on governments to make changes and spurring the purchase of insurance and services from the private sector. It is not clear, however, whether these developments are reducing the government's health care financing burden. Indeed, in Uruguay costly high-technology services remain the financial responsibility of the government.

Reinsurance

Reinsurance allows insurance companies to spread the risks that they assume from policyholders. Because spreading risks allows health insurers to include rare events in the package of covered services, reinsurance is in effect insurance for insurance companies. Reinsurance can take the form of sharing risks among affiliated insurers, sharing high risks among a large number of participating companies, and transferring risks to another insurer, among other options. Some governments require sharing among licensed insurers, but this is rare outside OECD countries (McIsaac and Babbel 1995).

The ability to spread risk across enrollees is often reinforced by reinsurance that ensures insurance company solvency in the event of high, unforeseen risk. Indeed, the amount of risk that an insurer can absorb increases with the availability of reinsurance; otherwise companies tend to be small and vulnerable to unforeseen high risks. Reinsurance coverage is rare in countries where capital markets are weak, and unavailable where actuarial data are poor. In Turkey reinsurance companies consider health insurance a high-risk business for many of these reasons. Limited benefit packages are one symptom of a lack of reinsurance, and most developing countries implicitly rely on government as the insurer of last resort. In Brazil and Egypt the government finances high-technology tertiary services through supplementary insurance, and covers people who lose private coverage.

Sickness funds in Argentina and Uruguay have public reinsurance systems—that is, the government taxes and manages reinsurance funds. Argentina does this through the Fund for Highly Complex [Procedures] (*Fondo de Alta Complejidad*), which theoretically finances rare and costly treatments but in reality finances overflow from the sickness funds (World Bank and IDB 1997). Uruguay's National Fund for Resources (*Fondo Nacional de Recursos*) is a form of social insurance that finances sophisticated medical procedures at specialized medical centers located in the sickness fund facilities. Mandatory contributions from workers finance, among other procedures, cardiovascular surgery, renal dialysis, and transplants. The fund functions as de facto reinsurance for the sickness funds, whose risk pools are heterogeneous.

Impediments to Health Insurance Development

Impediments to the establishment and development of private health insurance stem from rigidities in the market, immature capital markets, and direct and indirect government policies regarding insurance, capital markets, and health sector activities.

Health insurance is often a by-product of other forms of insurance—as in Egypt, Jamaica, and Turkey—and often serves as a loss leader for other insurance products. Inadequate actuarial data raises risks for investors and restricts reinsurance to catastrophic losses. Access to and the cost of capital and reinsurance have posed problems for private insurance growth in Côte d'Ivoire, Hungary, and Jamaica (Fuenzalida-Puelma 1996; TAI 1997; Lewis 1988). In Costa Rica, where private insurance is illegal, health insurance exists but is arranged by employers in creative ways through contracts and other payment mechanisms. There are no insurance companies.

A government's role in fostering or impeding private health-related investment is a key element in the growth of private health care financing and service delivery. Moreover, private financing requires private service delivery to be viable, and private service delivery requires private financing. Import controls (Jordan), high tariffs (Nigeria), foreign ownership restrictions (Brazil, Philippines), inflation (Peru, Turkey), and political uncertainty (Côte d'Ivoire) are commonly cited as reasons

for limiting or not investing in private insurance (TAI 1997). But in some instances these difficulties have had little effect on the growth or profitability of private health insurance markets. Argentina and Brazil, for example, weathered years of high inflation accompanied by growth in private insurance—suggesting other mitigating factors for investors.

Government policy toward the sector also inhibits investments. Indeed, lack of transparency regarding laws and regulation and extensive bureaucratic hurdles have limited investment in health insurance in countries such as the Czech Republic, Egypt, and Indonesia. Inconsistency in financial and health policies discourages private activity, and in Turkey has contributed to slow growth and limited products in the insurance market (Fuenzalida-Puelma 1996; Rafeh in this volume; TAI 1997; World Bank 1992).

Policies that subsidize or make capital accessible for infrastructure expansion, often for designated areas or underserved groups (as in Brazil, Colombia, and Jordan), have resulted in a large number of private health care facilities (World Bank 1994 and 1996). Such facilities encourage development of a private health insurance industry.

Finally, limited administrative and management capacity of companies or intermediaries have shrunk private insurance in Kenya and Tanzania. In both countries high incidences of fraud among consumers and providers have resulted in a shift from third-party payers to self-financed plans among large companies. Self-regulation clearly is not viable in these circumstances (TAI 1997). Similar lapses have occurred in other countries, particularly where the private insurance market is small (as it is in Kenya and Tanzania).

Similar problems arise in countries like the Dominican Republic, where private insurance is evolving based on small employers or individuals who purchase health insurance and obtain care from small clinics and individual practitioners under fee-for-service arrangements. Because public oversight is minimal, transactions costs are high and abuses are difficult and costly to monitor, the insurance market is inherently unstable.

Some governments have made concerted efforts to improve the climate for private investments in insurance and insurance-provider arrangements. South Africa has done so through deregulation, Uganda and the Philippines through tax reform, and Sri Lanka through a policy encouraging private insurance and reducing tariffs on medical imports.

The ability to repatriate profits in Eastern Europe has produced a favorable investment climate despite the current government-dominated health financing system. The absence of such impediments make other difficulties more manageable for investors (TAI 1997).

Health Insurance Regulation

The problems discussed earlier—adverse selection (companies avoiding high-risk enrollees), moral hazard (increased consumption by consumers who are covered by insurance), imperfect information (consumers who do not understand the market in which they are purchasing health insurance), and high administrative costs—are highly relevant to developing countries. This section summarizes available information on the regulation of private health insurance in developing countries, and the experiences to date.

The incentives of private insurers are often incompatible with the social objectives of affordable universal coverage that many governments have pledged to ensure. This is why few countries have been able to build their health care systems exclusively on private insurance financing. These two sets of objectives have become so intertwined that regulation of insurers has evolved not only to ensure that the insurance market is competitive and financially sound, but also that it meets social objectives of access, adequate benefits, and consumer responsiveness. This distinction is important. Chile, Korea, South Africa, and the United States can rely on private insurance because the social contract does not guarantee equal access to the same set of services. Efficiency and reliance on market forces are bigger priorities, and the private insurance market is seen as the best way of achieving those objectives.

Insurance regulation is essential in societies that endorse the concept of equal access to payers of health care, to ensure that companies cannot exclude high-risk individuals or costly preexisting conditions. Moreover, the cost increases frequently associated with largely private payers (as in Brazil, South Africa, and the United States) cannot be contained effectively without incentives for controlling the cost and volume of care. In short, governments can play a key role in promoting cost containment through insurance regulation. But this function is secondary to fairness, efficiency, and financial accountability functions.

Regulation of private insurance is most commonly an extension of insurance law, and the institutions that oversee health insurance are often part of or affiliated with (generic) insurance regulation. This is the case in Brazil, South Africa, and Turkey, among others. Insurance regulation oversees financial viability, reserves, reinsurance, and exit from the industry. Even where those functions are competently executed for the non-health insurance industry, as in South Africa, their record in regulating and enforcing rules for the health insurance industry is poor.

Regulation is generally weak and uneven in much of the developing world. This shortcoming is partly attributable to an inadequate regulatory framework, but also to weak institutional capacity. With a few exceptions (Colombia, Hungary) there are almost no comprehensive regulations for health insurance. Even Korea, with its heavy reliance on private insurance, has almost no regulations. Moreover, even when there are regulations on the books, enforcement is often limited or ineffective.

Regulatory institutions in developing countries

The body regulating private payers varies by country. It can be central, state, or even local. What is crucial is that regulators be independent of the industry and have the authority to influence insurer behavior to prevent abuse and damage to the industry and consumers.

Argentina. The Argentine regulatory agency, *Administración Nacional del Seguro de la Salud* (ANSSAL), is responsible for overseeing the financial adequacy of sickness funds (*Obras Sociales*). The agency is largely political, with close ties to organized labor and with inadequate and inappropriately trained staff. These features have undermined effective regulation and enforcement of rules, since political imperatives prevail in the face of financial difficulties. Current reforms aim to improve the scope, benefits, and solvency of the better-run *Obras Sociales*. Doing so, however, may exacerbate the regulatory agency's weaknesses, since it will require it to play a larger and more complex role.

Brazil. Private payers have burgeoned in Brazil in the past decade, and the variety of financing mechanisms has grown commensurately. The *Superintendencia de Seguros Privados*,

the São Paulo state insurance regulatory body, oversees only indemnity insurance, which represents just 4 percent of all private financing. Almost no control or oversight is provided in the establishment, operation, and medical and financial performance of the prepaid group practices, medical cooperatives, and company health plans (self-insured companies) that together with insurance finance health services.

Colombia. Colombia's new health care reform law includes a set of decrees establishing a health regulatory institution (*Superintendencia de Salud*) that is meant to take on many of the functions outlined in the first section of this paper. The regulatory structure was modeled on those of OECD countries and is designed to address a range of issues that traditionally are not included in middle-income countries' health insurance regulations. The *Superintendencia* is intended to ensure adequate structure, performance, and outcomes by accrediting private prepaid plans (to be financed through vouchers), establishing basic quality standards and handling consumer complaints, and ensuring the financial solvency of insurers by monitoring reserves, liquidity, and capital.

Hungary. All private insurance products in Hungary come under the aegis of the State Supervisory Authority of Insurance. Originally set up to oversee all insurance, the authority has been expanded to include for-profit health insurance companies. The law was revised in 1993 to conform to European Union standards. Nonprofit insurance is regulated by the law governing voluntary mutual insurance funds. Limited regulatory opportunities have left these institutions largely untested, but the necessary structure is in place to deal with a potential market (Fuenzalida-Puelma 1996).

Korea. Korea's compulsory national health insurance law of 1989 expanded private health insurance based on fee-for-service payments, with the government setting fee schedules in consultation with other players. Further government regulations have not been developed.

Turkey. Recent insurance reform in Turkey has included establishment of the Department of Life and Health Insurance in 1995 and the creation of an insurance supervision board to regulate the insurance industry. Health insurance oversight is almost nonexistent.

Uruguay. Although its system is based on sickness funds, Uruguay takes a different approach to regulation, and has a relatively comprehensive set of regulations. In 1981 the government made a legal distinction between for-profit payers and the nonprofit sickness funds (called *Instituciones de Asistencia Médica Colectiva*, or IAMCs), and regulations for the two groups differ.

For-profit insurance plans are accredited by the Ministry of Public Health, which requires them to meet certain standards, defines norms for their establishment and operation, and requires them to provide it with basic information on a regular basis. The Ministry of Economy and Finance regulates financial aspects of the IAMCs.

Financial oversight

Monitoring the financial practices and solvency of private health insurers is probably the best understood and most widely addressed issue in regulation. However, experiences and policy vary considerably across developing countries.

In Chile regulation of financial solvency has been the sole responsibility of the *Superintendencia de ISAPREs*, the regulatory body of private insurers, or ISAPREs (*Instituciones de Salud Previsional*). The superintendency monitors financial reserves and ensures that the ISAPREs remain financially viable.

As the first such arrangement in Latin America, the ISAPREs were established for individual rather than group policies. As such, they have engaged in aggressive "cream skimming" (attracting low-risk, low-cost populations into private health plans). Because they are not required to accept any enrollees, the ISAPREs have refused to insure high-risk workers or the elderly. People with preexisting conditions and chronic diseases, as well as the elderly, have been forced to rely on the public health system. The lack of regulation has led to classic problems of adverse selection in private insurance.

Financial oversight is the most developed and systematic element of Colombia's new regulations. Insurance regulations require that insurers be visited every three months, and an information system has been designed to allow tracking of financial flows and productivity. Insurers can invest in other enterprises, but the health investments must be a legally autonomous entity (that is, a subsidiary company) with separate investment interests (Londoño 1997). The

scope of the new regulations and the country's limited experience with this form of regulation have made implementation difficult. Indeed, the regulations place a large burden on regulators, who must deal with institutions that are not accustomed to systematic government oversight.

Among sickness funds in Argentina, South Africa, and Turkey, all but South Africa's Medical Schemes (sickness funds) run chronic deficits that are financed with government subsidies (TAI 1997; World Bank and IDB 1997). Although the Medical Schemes are experiencing financial difficulties, the lack of regulation inhibits the government from stepping in, and the weaker schemes are in danger of collapsing.

Argentina's Obras Sociales have recently run high deficits, and some are insolvent. While the Argentine regulatory agency, *Administración Nacional del Seguro de la Salud*, is responsible for overseeing the financial practices of the Obras Sociales, it has been largely ineffective. As a result the government has periodically been forced to step in to prop up ailing Obras. The system is currently being restructured to address these and other deficiencies.

Prohibitions on underwriting

Underwriting by insurance companies is economically efficient for the reasons discussed in the first section of this paper: it is efficient to group homogeneous risks and to price insurance coverage accordingly. The social consequences of such practices are considered inequitable and unacceptable in many countries, however. As a result health insurance regulations often include measures to prevent or discourage such practices.

In Colombia insurance policies are either group or individual, but individuals cannot legally be denied a basic policy—although certain conditions cannot be claimed within the first six months or year of the insurance contract.

Uruguay's nonprofit IAMCs are tightly regulated in all financial and access issues; for-profits have relative freedom in the scope and pricing of health insurance products. The IAMCs have defined enrollment procedures and premiums; copayments and physician fees are set by the Ministry of Economy and Finance.

The IAMCs underwrite potential enrollees and must grant enrollment rights if there are no preexisting conditions. People with preexisting conditions have immediate

access to emergency care, but must wait one year for surgery or two years for medical care. Under pressure from the IAMCs, the government passed a decree that imposes entry restrictions on individuals over the age of 50 or 60. These restrictions can be total (that is, rejection of applicant because of age) or partial (constrained access to services such as medication or outpatient services).

The strict regulation of nonprofits and the absence of regulation of for-profits have divided the market in much the same way it has in Chile. The for-profits (ISAPREs in Chile) have designed contracts that appeal to the young and the healthy, and the IAMCs (Ministry of Health in Chile) are increasingly serving the elderly and the chronically ill. Thus the costs of the IAMCs keep rising, as they do in the public system in Chile. The IAMCs, however, are overregulated; it is difficult to become efficient when prices, costs, and beneficiaries are beyond the insurer's control.

Nongovernmental regulation

In countries where government has not provided a regulatory framework for private health insurance, private groups have started to step in to try to maintain the industry's credibility and integrity. The industry's goals are to protect its market and survival—but unlike government, it does not seek to protect consumers. The standards set by the health insurance industry are necessarily voluntary, and enforcement is problematic. The limited experience in middle-income countries is consistent with this principle.

Financial integrity and fairness in access are neither monitored nor required under any specific Brazilian legislation or legal decree. The concerned trade group for prepaid group practice, ABRAMGE (*Associação Brasileira de Medicina de Grupo*), officially requested government regulation to protect the integrity of the industry, but the government refused. The group has created its own regulatory body, CONAMGE (National Council for Self-Regulation of Company-Based Prepaid Group Practice), which represents about 90 percent of all enrollees in such plans. The association is attempting to provide guidelines that will reduce fiscal irregularities and false advertising. A spin-off association, the National Council for Self-Regulation of Advertising, is considering setting up a regulatory arrangement for advertising among its members. However, both

are voluntary programs, and punitive actions against transgressors have not yet been spelled out, limiting the clout of such efforts (World Bank 1994).

Korea, lacking regulation or careful monitoring, has seen a rise in inefficient risk pooling, excessive technology acquisition, and fraudulent billings. Some self-regulation has been introduced by the Federation of Korean Medical Insurance Societies, which represents a large portion of insurers. The federation has established a National Insurance Appeals Committee to handle enrollee problems, developed a process for identifying designated treatment facilities, and overseen a program that provides training, routine inspections, and audits to ensure proper operation of member insurers (FKMIS 1986). Although these mechanisms do not necessarily work well (Yang 1996), they provide an infrastructure on which to build a potentially viable regulatory system.

Turkey's private health insurance industry views regulation as essential to maintaining its integrity. Given the lack of government action, health insurance companies are setting standards for their members' organization and payment of providers. They are not, however, setting financial performance standards, and enforcing their policies is difficult (Fuenzalida-Puelma 1996). However, these initiatives suggest the importance of regulation in protecting both consumers and the health insurance industry in Turkey, as in all countries.

Orderly entry and exit

Controlling entry into the insurance market promotes financial viability and ethical business conduct. The careful monitoring that occurs in the United States is difficult to replicate in developing countries. Still, simple controls such as limiting the types of investors and banning previous abusers can help establish a process of orderly entry. Exit regulations ensure that firms leaving the business do not leave their clients without coverage or with large debts (because they have not been reimbursed for services consumed). Strict entry regulations are rare in developing countries; exit policies are more common.

In Colombia entrants into the market must be licensed by the government and have minimum capital reserves. Troubled insurers are counseled, and firms that exit are taken over by the *Superintendencia* and their assets liqui-

dated. Insurance contracts are then transferred to other insurers. Chile's regulatory body cannot intervene when insurers falter, but upon exit it takes over the firm, pays off creditors (including patients awaiting reimbursements), and liquidates assets (Oyarzo 1997). In Uruguay IAMCs were originally required to have a minimum of 20,000 enrollees; those below that level were merged or exited from the market, with the insured transferred to other IAMCs.

Consumer protection

Consumer protection regulation is just beginning in non-OECD countries. India's 1986 Consumer Protection Act was passed with great fanfare and was an important start. However, professional groups claimed that the law undermined the physician-patient relationship, and weak enforcement has resulted in few changes. Public interest groups are now pressing for judicial intervention and government enforcement of the law. Despite progress in filing complaints, there are serious backlogs in bringing these cases to adjudication (Bhat 1996).

A similar situation exists in Brazil, where consumer protection laws exist but adjudication under these statutes is difficult to assure. Options for individuals who have encountered problems tend to be protracted, and often result in unsatisfactory decisions from a less than transparent process (World Bank 1994).

In Chile the *Superintendencia* does not regulate benefits, is not responsible for quality lapses in provision, and is prohibited from giving information to consumers to influence their choice among competing private health funds (Oyarzo 1997).

Uruguay has attempted to introduce competition into its social insurance system. The nonprofit IAMCs are closely regulated, but consumers can choose among them (although, as discussed, there are restrictions among the elderly). Enrollees can transfer among the IAMCs subject to certain enrollment requirements and a maximum hiatus of two months between departing from and enrolling in another IAMC.

Enforcement experience

Many countries lack an adequate regulatory structure, and those that have regulations in place often cannot enforce

them. Indeed, enforcement at all levels of government has encountered difficulties in the countries for which there are data.

Despite the logic and strength of Colombia's new regulations, enforcement is having mixed results. Part of the difficulty, and an issue that has emerged elsewhere, is the politicization of the regulatory function, which ultimately undermines the effectiveness and credibility of regulation. Still, the gains from establishing an appropriate structure are a significant achievement (Londoño 1997).

Sickness fund systems in Argentina, South Africa, and Turkey share some of these difficulties in regulation. First, because these systems are employment-based, there is no competition among funds. Second, government regulations often control the decisionmaking of the sickness fund administrators, leading to problems. Third, few of these arrangements ensure that abuses associated with health insurance (moral hazard) and enforcement of the social contract (adverse selection) are mitigated through legal and regulatory measures. Finally, none of the funds is accountable to enrollees, firms, government, or regulatory bodies.

Argentina's regulatory agency, ANSSAL, has had trouble with enforcement partly because of its complex relationship with the sickness fund owners who lead trade unions. Indeed, recent reforms suggest that ANSSAL will need to strengthen its role to include overseeing enrollment, providing technical and financial assistance for mergers, and closing Obras Sociales. Despite this increased role, ANSSAL continues to be challenged by enforcement (World Bank and IDB 1997).

In Brazil there are no institutions to protect against financial insolvency or sloppy exits from the market, a threat that could undermine the country's entire private insurance market. Some forms of regulation have been tried in various Brazilian states, but weak and politicized enforcement has undermined the effectiveness of these experiments (World Bank 1994).

Inappropriate regulations

Regulation is difficult for most countries, especially in the health sector. While there is an important role for government in many areas, there is also a risk of inappropriate regulations that control the sector in an unreasonable man-

ner rather than regulate it. Rigid price controls on private insurance, generic space requirements, and infrastructure and technology specifications can generally be classified as nuisance regulations, and ultimately provide little in the way of true regulation.³³ The objective of health insurance regulation is to move away from controls to a set of incentives and disincentives that ensure the proper conduct of business. Most countries, however, have focused on bureaucratic requirements and have ignored the more difficult but essential functions for regulating private payers.

The concept of price controls is an important one. During periods of high inflation in the 1980s Brazil froze private health insurance prices, including those for managed care plans. This led to overcompensation in price adjustments when controls were lifted, in order to hedge against a return to price controls. A similar pattern occurred with price controls in Uruguay. Both initiatives' sole objective was to stop price increases—the reasonableness of health insurance prices was never considered. Such policies distort the market for health insurance, and in the end have little impact on overall prices.

In the United States some states approve insurance rates. These typically involve general targets for premium increases based on loss ratios (that is, costs/revenues). This approach allows profit levels to be contained while allowing health insurance companies maximum flexibility in management and sufficient profit to ensure competition in the market.

Some regulations are too specific and have offered perverse incentives. In 1989 Uruguay's government decreed the necessary infrastructure, equipment, and inpatient capacity that the private sickness funds (IAMCs) were to possess based on an assessment of resource availability and the perceived effectiveness of those resources. Financial feasibility was defined according to national and regional health capacity as well as financial constraints. These were adopted in another decree that set IAMC investment levels and increased monthly premiums accordingly. The result has been overcapacity, rising maintenance costs, and higher utilization, part of which government finances and part of which comes from private insurance premiums.

Most health sector regulations in developing countries are weak, and regulatory structures (where they exist) are often unenforced or inappropriate.³⁴ Weak regulations discourage private insurance because there is a dearth of

competent providers from whom to purchase health care services. Moreover, when payers and providers merge (as they do under managed care), regulations on the organization and delivery of health services have an increasing impact on health insurance regulation, its structure, and enforcement. Hence, although a separate issue, regulation of providers (hospitals, clinics, physicians, and other health

professionals) has a direct bearing on health insurance regulation and the regulatory environment in general.

These lapses—either in terms of impeding growth of the private sector or allowing it free rein with no controls or policy signals from government—lead to an uncertain business environment and an inhospitable climate for private investment in health insurance.

Conclusions and Lessons Learned

Private insurance exists in almost every country, and its potential is significant. In countries that already have a large private insurance sector, it is likely to remain, since reversing government policy toward a major consumer industry can be politically difficult. Whether countries choose to encourage, discourage, or simply accept private insurance, it is important that governments understand the health insurance industry.

Private health insurance has both benefits and pitfalls relative to purely public financing systems. Private insurance can improve the availability and quality of health. It can help health care systems rebuild infrastructure and amortize needed investment when government financing for health care is inadequate. It can offer consumers a choice of providers, and thereby generate incentives that reward high-quality providers and penalize poor quality (at least as perceived by consumers). Similarly, private insurers are becoming increasingly adept at distinguishing efficient from inefficient providers, and can develop methods that systematically reward efficiency. (By contrast, public financing systems often reward efficiency and inefficiency alike.) Finally, although private insurance can siphon off lower-cost people and leave the public sector with higher average costs, it can reduce the total financial burden on government.

The pitfalls of private insurance are, in many cases, the flip side of their advantages. Private insurance systems are naturally dynamic. When private insurance plans compete with one another for enrollees (or when one or more private insurance companies compete with a public insurance program), the composition of any one insurer's risk pool can change as consumers move from plan to plan. Plans that experience adverse selection, even when they are well-run and efficient, can fail.

Thus insurers have developed a number of underwriting and pricing practices to avoid accepting sick people when they apply for coverage. From a purely economic perspective, these techniques can improve economic efficiency, although they may be socially unacceptable. These practices expedite the formation of homogeneous risk pools in which participants' expected costs are similar. When these risk pools form and are priced efficiently, they reduce involuntary cross-subsidies among participants—a result that is economically efficient. But they can also reduce the ability of sick people to find insurance, increase administrative costs, and reduce the percentage of health care expenditures that actually finances health care. By attracting healthier risks, insurers can quickly erode the broad risk pooling that social insurance attempts to create, straining the social contract's ability to ensure the universal, equal coverage that many countries have embraced.

Moreover, the ability of private insurance systems to improve access and quality, and to help recapitalize health care capacity, can cause health care costs to accelerate as private insurance grows. Greater access produces greater use of health care services; the acquisition and use of costly technologies further increase costs. The challenge to regulators—and to private insurers that hope to expand private coverage—is to keep private insurance affordable while encouraging ongoing improvements in the quality of health care. This is not a simple task.

Other potential problems of private insurance are unrelated to its advantages: financial instability, unethical behavior, and unreliable consumer orientation. Governments can resolve these problems, but only if they establish clear, problem-focused regulations and enforce them systematically.

Regulation of private insurance can take many forms. Depending on its nature, scope, and enforcement, regulation can have different effects on consumers and providers, and therefore on costs. In Germany all aspects of the private, noncompeting sickness funds are so closely regulated as to be quasi-public institutions; company behavior and performance are tightly controlled. At the other extreme, most non-OECD countries have almost no oversight or regulation. The absence of regulation can have effects on the industry that are as perverse as those caused by excessive and irrational regulation.

Regulation is essential for any country that has a private insurance sector. Some of the most important lessons for regulators about health insurance include:

- *Know your industry and the major players.* Information about the practices of companies and their managers, and about the performance and financial integrity of health insurers, is essential to preserve the industry and to protect consumers. Regulators who are unfamiliar with the specifics of their country's insurance industry will be unable to anticipate and prevent abuses.
- *All health insurance systems must balance efficiency with cultural notions of fairness.* Countries that have adopted a sweeping social contract, and seek to ensure absolute equality to all, will have important problems with the economic efficiency of the insurance system they create. Conversely, countries that allow insurers to isolate sick people into high-cost insurance pools, and offer no means to subsidize people with high health care costs, will have a system that may be economically efficient (in that it does not force involuntary cross-subsidies) but that most people will consider unfair or inadequately protective. All insurance systems, public and private, must strike a balance between economic efficiency and equity. Where they lie on the spectrum will be determined by each country's social and political culture, and by its economic resources.
- *Health insurance companies, whether for-profit or nonprofit, must make a profit.* Government can regulate insurance companies' profit levels (usually by regulating price increases), but preventing profit will undermine the company and the industry. Without profit, insurers have no means of financing investment in efficient management systems and effective systems of health care cost management.
- *Regulation can be too perfect.* Governments that have had very little regulation may find it impossible to leap to a comprehensive system of insurance regulation. For example, Colombia's new comprehensive set of insurance regulation is an impressive move by the government to ensure oversight of insurers and health care providers. But the regulation imposes an abrupt shift in culture. As a result the breadth of the changes and the adoption of sophisticated methods have been difficult to establish and to enforce. A better approach may be to start with a core set of regulations that rectify egregious problems; once these regulations become effective, regulators can turn systematically to other areas of concern. Tradeoffs need to be made between regulatory needs and the ability to effectively enforce regulations.
- *Regulations must be effective and offer proper incentives.* In many countries nonfinancial regulations are nuisance regulations. They create significant bureaucratic red tape and have little impact on quality or other desirable outcomes. For the insurance industry such regulations merely raise costs. To be effective, regulations must have a clear objective, and the laws and decrees put in place must serve that end as directly as possible. The experience of a number of countries suggests the need to revise and craft legislation to strengthen appropriate incentives and to discourage pernicious company behavior.
- *Regulation without enforcement is like a tiger without teeth.* An effective regulatory system relies on an effective enforcement strategy. Regulations that succumb to political imperatives or that allow exceptions undermine the process and purpose of regulation. Sound regulatory requirements will be ineffective if they cannot be enforced or are not enforced systematically.

Finally, even countries that want to retain a broad public insurance program to finance health care can benefit from understanding and judiciously using principles of private insurance. If it is encouraged and directed toward explicit system goals, competition is a powerful tool for improving efficiency and quality. For example, the Czech Republic has initiated competition within its public insurance program, allowing regional government-sanctioned insurance plans to form and compete with the national plan. As might be expected, some of the new regional plans are doing well: they are attracting growing enrollment. They are

also causing the national plan some discomfort, since it believes that it is being left with sicker enrollees. This experience bears observation, but in the short run it will motivate an ongoing search for ways to improve administrative efficiency and customer satisfaction in all plans.

Private health insurance offers benefits and costs to society. Its importance and applicability vary by country

and culture, but in most countries it is well-established. The challenge to governments is to regulate private insurance effectively: to assure the financial stability of insurers and the integrity of insurance contracts, and to strike a balance between the social acceptability of private insurance and insurers' competitive drive toward economic efficiency.

Annex table I Roles, characteristics, and extent of private health insurance coverage and main alternatives, OECD countries

Country	Role of private insurance	Characteristics of private insurance	Share of population with private insurance	Main alternative source of financing
Australia	Supplemental to universal public coverage	Pays only for hospital care in private facilities, including inpatient physician charges that exceed the public fee rate for inpatient care.	45 percent	Public universal program (Medicare) financed from the general income tax.
Belgium	Supplemental coverage for the self-employed	Pays for ambulatory, nonsurgical care.	n.a.	Compulsory social insurance covers risks for the entire population and minor risks for all but the self-employed.
Canada	Supplemental to universal public coverage	Only covers services not covered by the provincial public plans.	n.a.	Universal public insurance plan financed from national and provincial general revenues. Physicians are in private practice and predominantly paid on a fee-for-service basis. Balance billing to patients is prohibited by law.
France	Supplemental to universal public coverage	Pays for private hospital and physician charges that exceed contractual fees paid by the public program. About 25 percent of physicians (mostly specialists) balance bill patients for care. Covers required deductible.	n.a.	Comprehensive public insurance program. Private provider fees are negotiated by the public insurance program. Supplementary private insurance to cover cost sharing is common.
Germany	Alternative to universal public coverage	People who opt out of the statutory system in favor of private insurance cannot ever rejoin the statutory system.	9 percent (1986)	Universal entitlement for the statutory health insurance system comprising 1,200 self-financing sickness funds organized by geographic area, firm, trade, or craft. Membership is compulsory for people within a specified income limit and for retired people who participated while working. About three-quarters of participants in the statutory system are mandatory; one-quarter participate voluntarily.
Ireland	Supplemental to universal public coverage, with two levels of benefit coverage	Voluntary private insurance, sold by a monopolistic statutory health insurer to people who are partly eligible for public program coverage, covers physician fees and private hospital accommodations (including private beds in public hospitals).	30 percent (1991)	Public program is funded from general taxation and provides comprehensive benefits. About one-third of the population relies exclusively on the public insurance program with no out-of-pocket payments for care; the rest of the population is partly eligible. Of these, more than half pay for some care out of pocket, but have no supplemental private insurance.

Annex table I Roles, characteristics, and extent of private health insurance coverage and main alternatives, OECD countries (continued)

Country	Role of private insurance	Characteristics of private insurance	Share of population with private insurance	Main alternative source of financing
Netherlands	Alternative to universal public coverage	Mandatory regulated private insurance coverage for acute care for higher-income patients; insurance plans reimburse patients.	30 percent (1991)	Compulsory universal public coverage for chronic care; public coverage for acute care is compulsory for about 70 percent of the population.
Spain	Supplemental to universal public coverage	Typically covers supplementary voluntary payments for hospital and physician care.	n.a.	Compulsory national system of public hospitals and publicly salaried physicians, funded from general revenues and social insurance contributions. Some provinces have their own social insurance system.
United Kingdom	Supplemental to universal public coverage	Covers acute care services, supplements or substitutes for payment by the National Health System.	10 percent (1990)	Comprehensive, compulsory national system of public hospitals and publicly salaried physicians, financed from general revenues. Patients are assigned to primary and institutional care providers largely by place of residence. Efficiencies have emerged from recent reforms that introduced systems of provider accountability, not on competition among plans or providers.
United States	Primary, voluntary coverage for people ineligible for the national social insurance program for the elderly (Medicare) or federal-state public assistance health program (Medicaid). Public insurance enrollees may buy supplemental private insurance.	Primarily a tax-exempt, voluntary benefit from self-insured or insured employer plans. About 7 percent of people under 65 buy private individual (nongroup) coverage. About one-third of elderly public insurance enrollees buy supplemental private coverage. In any year, 16–19 percent of the population under 65 is uninsured all year.	71 percent of population under 65 (1995)	Public assistance coverage is available to poor individuals in specific circumstances (under age 13, over age 65, or permanently disabled); eligibility and coverage varies by state. Nearly all persons over 65 qualify for coverage from the social insurance program (Medicare).

Source: Altman and Jackson 1991; Chollet 1996; Day and Klein 1991; Enthoven 1991; Hurst 1991; Reinhardt 1995.

Annex table 2 Roles, characteristics, and extent of private health insurance coverage and main alternatives, non-OECD countries

Country	Role of private insurance	Characteristics of private insurance	Share of population with private insurance	Main alternative source of financing
Argentina	Additional to social welfare funds run by trade unions	White-collar workers typically redirect 75 percent of mandatory health contributions to private, prepaid medical plans that vary in coverage. The plans normally contract with private hospitals.	19 percent	Compulsory social welfare funds operated by government-affiliated trade unions, as well as federal, provincial, and municipal health services (22 percent), social insurance (36 percent), and out-of-pocket payments (23 percent).
Brazil	Additional to publicly financed care from largely private facilities	Most enrollment is in prepaid group practices, medical cooperatives, or employer plans that own or contract with health care facilities.	25 percent (includes managed care); indemnity plans are 4 percent of total	Compulsory public insurance program and federal, state, and municipal services. Out-of-pocket expenditures are significant.
Chile	Alternative to the public health system	Benefits are tied to amount of contribution and age, sex, and number of dependents. Large companies provide complementary coverage or create their own private ISAPRE.	27 percent	FONASA collects 7 percent compulsory health insurance premium and allocates them to ISAPREs or the Ministry of Health. The ministry's system is subsidized by the government.
Colombia	Supplemental to public coverage	New entities called EPSs may be state run (6), private (12), or nonprofit (7). EPSs compete with the public system.	11 percent	Half the population is affiliated with the public insurance system, which is supported by a compulsory wage tax that also finances the EPSs.
Costa Rica	Additional to public coverage	There are no private (health) insurance companies. The wealthy use private facilities whose services are financed by new payers and providers.	Low	Good-quality public social security system.
Côte d'Ivoire	Additional or supplemental to public options	Most insured are covered by their employers. Insurance payments are made to providers based on a "payment guarantee" issued to patients prior to hospital admission.	7 percent	Ministry of Health facilities. Social security system for formal workers provides generous benefits and less generous <i>mutuelle</i> for government employees and dependents. More than half of expenditures are private.
Czech Republic	Complementary to public insurance		None	Compulsory universal social insurance with contributions to 1 of 20 licensed insurance companies with generous, publicly mandated medical and dental benefits.
Dominican Republic	Additional to social security and supplemental to other public services	Largely employer-provided care in prepaid, PPO, and indemnity plans.	14 percent	Poor-quality social security and Ministry of Public Health services. Expenditures are 10 percent social security, 20 percent ministry, and 52 percent private (NGOs and for-profit).
Ecuador	Alternative to public coverage; additional to social security	Employer-operated medical plans finance use of private clinics and doctors.	12 percent	Poor-quality social security system and Ministry of Health services. Expenditures are 17 percent social security, 14 percent ministry, 63 percent private, and 6 percent other.
Egypt	Alternative/supplemental to public coverage	Employer-run and -financed clinics. Typical private plans are noncontributory, cover all employees, and reimburse costs up to a fixed level.	3 percent	Poor-quality compulsory Health Insurance Organization and Ministry of Health services. Expenditures are 30 percent government, 54 percent households, and 9 percent social insurance.
Guatemala	Additional to public coverage	Employer-provided, prepaid group health insurance for non-union employees. Comprehensive major medical plans. HMOs and PPOs have emerged as other options.	5 percent	Poor-quality social security and Ministry of Health services.

Annex table 2 Roles, characteristics, and extent of private health insurance coverage and main alternatives, non-OECD countries (continued)

Country	Role of private insurance	Characteristics of private insurance	Share of population with private insurance	Main alternative source of financing
Hungary	Supplemental to public coverage	Many companies grant free medical consultations in-house or in private clinics. Recent modification of law will increase private provision.	Low	Social security based on contributions.
India	Alternative to public coverage (operated at state level)	Expensive medical insurance provided to the rich by employers. Government employees have their own system.	3.3 percent	System funded and operated by federal and state governments. Expenditures are 75 percent out-of-pocket, 6 percent federal, and 16 percent state government.
Indonesia	Alternative to public coverage	Employer-provided plans with internal limitations or coinsurance to limit costs. HMOs and PPOs becoming increasingly popular.	Minimal	Public system (JAMSOSTEK). Expenditures are 70 percent out of pocket, 4 percent of which is for private insurance.
Jamaica	Alternative to public coverage	Typically covers outpatient and some inpatient care.	15 percent	Ministry of Health services with some user fees, but free for the indigent.
Jordan	Alternative to public coverage	Mainly provided as a health benefit of large firms.	12 percent	Civil Insurance Program for government employees and the indigent, and Royal Medical Services for the military. Both are financed by payroll tax and general revenues; cover 58 percent of the population. About 53 percent of spending is private.
Honduras	Additional to public coverage	Employer-provided plans through prepaid and indemnity plans.	1.5 percent	Expenditures are 9 percent for social security (formal sector workers), 29 percent for Ministry of Health, and 61 percent out of pocket.
Kenya	Alternative to public coverage	Employer-operated, noncontributory plans of urban-based companies that offer coverage for dependents. Five companies are active. Direct employer contracting with providers (self-insuring) is more common.	11.4 percent	State-run compulsory insurance system covers people in formal employment and their dependents—about 25 percent of the population.
Korea, Rep. of	Compulsory health insurance	417 autonomous health insurance funds; restricted access to high technology and ceilings on inpatient care. All funds have deductibles and copayments for doctor visits, outpatient services (30–55 percent), and inpatient care (20 percent).	94 percent	6 percent of population covered by public Medicaid insurance program. Government subsidizes private funds.
Lebanon	Alternative to NGO and public insurance	90 private insurance companies have entered the market recently anticipating economic recovery. Copayments are standard for most services.	8 percent	Three public insurance schemes cover private employees (28 percent), civil servants (9 percent), and the military (11 percent). Expenditures are 31 percent government, 61 percent private sources, and 8 percent donors.
Malaysia	Alternative to public coverage	Large or foreign employers provide private plans with different levels of coverage for categories of employees.	3 percent	Well-run public system.
Mexico	Additional to public coverage and compulsory social insurance for formal sector workers	Large employers provide coverage to non-union employees. Typical plans are noncontributory, but there is a trend toward providing higher benefits and employee contributions.	1–2 percent	Social security systems for formal sector workers and government employees, and Ministry of Health for the poor. About 47 percent of expenditures are private.

(Table continues next page)

Annex table 2 Roles, characteristics, and extent of private health insurance coverage and main alternatives, non-OECD countries (continued)

Country	Role of private insurance	Characteristics of private insurance	Share of population with private insurance	Main alternative source of financing
Nigeria	Supplemental to public coverage	Recent introduction of medical insurance on a limited basis in tandem with a self-funded arrangement. Typically noncontributory.	0.4 percent	Free treatment at government clinics, though patients often pay for medication, medical aids, and so on.
Pakistan	Alternative to public coverage	Multinational and public sector employees receive almost blanket benefits from their employers. Limited otherwise.	Low	State-run system through Ministry of Health and limited Employee Social Security Insurance.
Panama	Supplemental to public coverage	Companies commonly provide group medical insurance for white-collar and sometimes plant workers. Typically non-contributory.	Low	Public social security system and Ministry of Health services.
Peru	Alternative to public coverage; additional to social security	Group medical insurance for white-collar workers, characterized by deductibles, coinsurance, cost sharing, and maximum benefit levels.	6 percent	Expenditures are 36 percent public social security system, 30 percent Ministry of Health, and 28 percent out-of-pocket.
Philippines	Supplemental to public coverage	Two categories of group medical insurance: basic hospitalization (for typical medical expenses) and major medical (pays for a percentage of covered medical expenses in excess of a specified deductible amount). Usually paid by employers.	1.6 percent	Medicare program through compulsory social security system (covers 8.5 percent), and growing managed care options. About 54 percent of spending is out of pocket.
Poland	Limited	High social security taxes (46 percent of gross salary) restrict health as an employee benefit, but investment is pending.	Minimal	Free government-provided health care. Patients cover half of all costs through informal payments, and 29 percent indicate that they pay "gratuities."
Singapore	Alternative to public coverage	Insured or self-financed private medical schemes are provided by companies on a scheduled reimbursement basis for outpatient and hospitalization benefits. Major medical not common.	Low	High-quality public system of Central Provident Fund, Medisave, and Medishield allows consumers to choose extent of coverage.
South Africa	Alternative to employment-based sickness funds; public coverage is not widespread	Traditional medical schemes (sickness funds) and insured plans, most of which require employee and employer contributions (evenly split). All medical plans under severe cost pressures.	16 percent of population (69 percent of whites; 7 percent of blacks)	Limited government system. Expenditures are 45 percent public, 34 percent medical schemes, 3 percent insurance, and 14 percent out-of-pocket.
Sri Lanka	Alternative to public coverage	Employer-provided medical insurance for executives; some contributory insurance for others. Practice varies among the five insurance companies, active mostly in Colombo.	2 percent	Low-quality public hospitals. About 47 percent of the population uses private health care services, and 60 percent of total expenditures are out of pocket.
Thailand	Additional to public coverage	Common for companies to provide medical insurance for all employees on a noncontributory basis, in the form of scheduled indemnity programs.	0.7 percent	In 1992 expenditures were 24 percent public services, 2 percent other public insurance, and 74 percent out of pocket.

Annex table 2 Roles, characteristics, and extent of private health insurance coverage and main alternatives, non-OECD countries (continued)

Country	Role of private insurance	Characteristics of private insurance	Share of population with private insurance	Main alternative source of financing
Turkey	Additional to compulsory social insurance for 65 percent of eligible population	Most insurance plans are individual rather than group policies offered by 29 insurance companies. Multinational companies offer health care benefits to Turkish managers and some office workers and dependents.	500,000 policyholders	Three social security systems of variable quality. Ministry of Health covers the rest. Two-thirds of payment are private.
Uruguay	Supplemental insurance	Sickness funds cover 55 percent of the population through own and contracted facilities. 35 supplementary insurers offer medical, surgical, dental, diagnostic, and mobile/emergency plans.	5.9 percent	Private sickness funds finance defined benefits (48 percent of expenditures). Expenditures also covered by social security, Ministry of Public Health (16 percent), and out of pocket (14 percent).
Venezuela	Additional to public coverage	Employer-contracted medical insurance common in offices with 50 or more employees. Typically contributory and includes dependents.	Low	Public social security institute and Ministry of Health.
Zimbabwe	Alternative to public clinics	Private mutual medical organizations with reasonable level of benefits. Employers and employees typically split costs. Membership common for middle and upper classes.	5 percent	Poor-quality state-run system for low-income people.

Source: Bhat 1996; California Consortium 1996; Fernandez 1997; Fuenzalida-Puelma 1996; La Forgia and Couttolenc 1993; La Forgia and Griffin 1993; Lewis 1988; Lewis and Medici 1995; William M. Mercer Limited 1996; Nittayaramphong and Tangcharoensathien 1994; Rafeh in this volume; Shaw and Griffin 1995; TAI 1997; World Bank 1992, 1994, 1995, 1996, and forthcoming; World Bank and IDB 1997; Yang 1996.

Notes

1. In competitive markets the price of insurance coverage is equal to the expected value of loss, plus administrative and marketing expense, plus an additional fee (called a *loading*). In general, insurance loadings are larger as consumers are more risk averse (that is, as consumers are willing to pay more to avoid risk). As the probability of loss approaches 1 (that is, certainty), the cost of insurance may exceed consumers' cost of sustaining the loss, even if consumers are risk averse. Consumers are more likely to insure against high-probability losses and high-magnitude losses in competitive markets (where the price of insurance equals the marginal cost of producing insurance) than in monopolistic markets (where the price of insurance exceeds marginal cost).

2. For high-risk populations the price of insurance reflects the high probability of high loss. However, the price may also include a deterrent surcharge, reflecting the absence of a competitive market for these risks.

3. In the professional literature consumers' greater information about risk is called *asymmetric information*. Ligon and Thistle (1996) provide a technical presentation of possible contractual remedies to asymmetric information problems in insurance markets, although not specifically with regard to health insurance.

4. In the extreme case consumers would buy health insurance not to manage risk, but to gain a subsidy for perfectly anticipated medical expenditures. The magnitude of the subsidy to a consumer with asymmetric information is positively related to the difference between the anticipated expected value of personal loss and the "pure" premium—that is, the average expected value of loss among the insured population. Consumer demand for insurance in markets with asymmetric information generally is assumed to be greater as the opportunity for such a subsidy increases. Such consumers would include people who have either an unusually high probability of illness or even a slightly higher probability of a very costly illness.

5. An insurance pool (or risk pool) is a collection of individual risks that corresponds to a specific price for an insurance product. Each insurer may form many pools, each of which is defined by the specific insurance contract and the group or class of insured risks over which the price is calculated. A risk pool may include either unrelated individuals or groups.

6. The logic of this is as follows: If an insurer sets the price of coverage too low relative to the plan's medical losses, it will be forced to raise the price at the first opportunity. But by raising the price the insurer will lose low-risk enrollees and retain high-risk enrollees, because the new price is high relative to low-risk consumers' expected value of loss. When that happens, the insurer may enter an *underwriting spiral* (sometimes called a *death spiral*), a repeating sequence of setting higher insurance prices and losing low-risk enrollees. The ultimate consequence of an underwriting spiral is the loss of the insurance arrangement's ability to

adequately pool risk. Insurers that experience an underwriting spiral in a particular insurance product typically will cancel that product if they are unable to stabilize experience by redesigning the product to retain low risks.

7. Over time this behavior will cause insurance pools to dissolve and form in ways that reduce differences in the risk embodied in any one pool. Called *separating equilibrium* (Rothschild and Stiglitz 1976), the propensity of consumers to separate themselves into relatively homogeneous risk pools is a well-recognized phenomenon, especially in competitive insurance markets.

8. Tiered rating helps stabilize insurance markets as follows. Because consumers gravitate toward risk pools that include members whose risk is similar to or less than their own, insurers that attempt to aggregate dissimilar risk (and set a single price regardless of differences in individuals' risk) will see an exodus of low-risk participants from the pool. By aggregate pricing only similar risk and pricing insurance accurately at the outset, insurers hope to avoid an underwriting spiral (see note 6).

9. Many insurance plans exclude coverage for any procedure that is deemed experimental. In the United States insurance exclusions for experimental procedures are controversial; many patients (and their physicians) feel that the transition from experimental procedure to accepted practice is a matter of professional judgment. No single agency, public or private, judges which procedures are experimental and which are not. While the insurance contract may identify specific procedures that it deems experimental and will not cover, in most cases each insurer's medical director makes a decision about whether a specific procedure is deemed experimental at the time that the insured patient requires care.

10. In the broadest sense, the rapid adoption of new and costly medical technology that occurs when most consumers are insured (despite improvements in the quality of care) also may be viewed as moral hazard. Thus private insurance in many countries may not cover advanced forms of medical technology. For example, in Korea private insurance typically excludes expensive high-technology medical services such as computerized axial tomography (CAT) scanning, magnetic resonance imaging (MRI), positron emission tomography (PET) scanning, and some chemotherapy (Yang 1996).

11. This source of moral hazard is generally considered indistinguishable from the phenomenon of supplier-induced demand: the propensity of health care providers to recommend more care when consumers are insensitive to price. Of course, full insurance is the main reason for consumers' price insensitivity.

12. Critics of managed care argue that managed care plans also can discourage sick people from enrolling in any number of ways—for example, by establishing a relative small network of specialty providers, by excluding primary care providers who have established caseloads of sick people, and by limiting coverage for high-cost services such as mental health care.

Indeed, reviewing the research literature on selection bias in U.S. managed care plans, Hellinger (1995) concludes that health

plans that restrict the choice of enrollees to a specific set of providers (that is, health maintenance organizations of all types and exclusive provider organizations) often do experience favorable selection. This result holds for both the elderly and nonelderly population enrolling in managed care plans. However, over time the selection advantage experienced by HMOs tends to decline as enrollee utilization regresses toward the mean (Welch 1985).

13. Extensive research on the costs of managed care plans consistently concludes that the main reason for the lower cost of managed care relative to financial insurance plans is the lower rate of hospitalization, controlling for patient diagnosis and other relevant characteristics.

14. In addition, large employers usually employ professional benefits managers who are accessible to the insurer and able to promptly resolve questions about enrollment and claims. U.S. insurers consider the ability to communicate efficiently with large-group customers to be an important aspect of the lower administrative cost of that business.

15. The reasons for this are the inverse of those that make large-group customers attractive. Specifically, marketing to many small groups is more expensive than marketing to fewer large groups, and may not differ appreciably from marketing to individuals. Moreover, small groups are much less likely than large groups to be able to afford a full-time professional plan administrator, making the resolution of questions and disputes about coverage more difficult and time-consuming for the insurer. Because of the greater risk and cost of insuring small groups, insurers typically underwrite small groups very carefully to avoid adverse selection.

16. For at least two reasons, insurers may redline workers in some occupations or industries even if those workers have separate insurance to pay for job-related injuries or illnesses. First, such workers are more likely to pose difficult (and therefore costly) problems for claim adjudication: every claim would have to be examined as being potentially related to their employment. Second, workers who suffer health problems from past exposure or injury cannot easily bring a claim against past insurers of job-related illness. Instead, they will bring the claim against their current health insurer. Thus insurers may redline to protect themselves from inadequacies in other insurance sectors (specifically, insurance for job-related injuries) and from adverse selection by workers who are aware of past exposures or injuries but may conceal them from an insurer.

17. In the United States the best managed care plans are increasingly active in developing and using medical practice protocols to improve the efficiency and quality of care. However, the development and implementation of practice protocols can generate significant administrative costs. In general, financial insurance plans are much less inclined to invest in measuring and improving the quality of care, since they do not affiliate with any particular set of health care providers.

18. In the United States and many other countries individuals and businesses are not prohibited from buying insurance from

an unlicensed insurer. However, when they do buy from an unlicensed insurer, they are not protected by regulatory standards.

19. Most U.S. states allow only certain classes of assets to be admitted to the balance sheet, and many restrict the share of assets that insurers can hold in certain categories. For example, in most states common stock cannot account for more than 10 percent of a life insurer's assets. Some states also limit investments in medium- to lower-grade bonds (Skipper 1992).

20. In the United States the National Association of Insurance Commissioners—a voluntary association that advises states about regulatory standards and practices—is developing risk-based capital measures and standards. Risk-based standards would vary minimum levels of insurer capital and surplus by the financial risk of the instruments in which these funds are invested and by the insurer's operational characteristics. This initiative is expected to encourage greater uniformity of capital and surplus requirements among states.

21. Some U.S. states do not require that reinsurers be licensed, since direct insurers are considered sophisticated buyers. However, uncollectible reinsurance has been a source of some direct insurer insolvencies. Some states indirectly regulate reinsurance operations by not allowing direct insurers reserve credit for reinsurance placed with unauthorized reinsurers.

22. Such actions generally require a court order. In some states the regulator may assume control of an insurer without a prior court order if the regulator decides that immediate action is needed to preserve assets. However, such "quick take" actions are subject to subsequent judicial review (Skipper 1992). In some cases where an insurance regulator has assumed control of an insurer, the regulator has discovered illegal behavior by members of the insurer's management or governing board, and has initiated civil or criminal prosecution.

23. A holding company is a parent corporation that typically owns all or most of the stock of a number of constituent subsidiaries, but occasionally may own less than a majority share based on control or investment motives (Munn, Garcia, and Woelfel 1991).

24. U.S. state insurance regulators commonly require that an affiliated insurer construct a corporate "firewall"—that is, a provision of incorporation that formally protects the insurer's finances from insolvent affiliates.

25. Each U.S. state operates two guarantee funds (by convention, for life and health insurers and for property and casualty insurers) to compensate policyholders for financial loss due to insurer insolvency. As an artifact of their historical development, health insurers may be classified in either group. Differences among states in the amounts guaranteed, persons eligible for protection, extent of coverage, premium base for assessment, caps on assessments, and rights to recoup guarantee payments can lead to very uneven economic results and drawn-out litigation over large amounts of money when a multistate insurer becomes insolvent (Skipper 1992).

26. In the United States the National Association of Insurance Commissioners maintains two electronic databases to help states in this effort. The Regulatory Information Retrieval System contains information on people and companies against whom regulatory actions have been taken. The Special Activities Database facilitates the confidential exchange of information among regulators, allowing them to inquire into the activities of companies and individuals of regulatory concern, including people who may be involved in fraudulent activities.

27. Every U.S. insurer is required to retain an outside firm of certified public accountants that is accountable to the insurer's governing board. Regulators sometimes have the right to approve the choice, and insurers typically retain a large national accounting firm. The accounting firm periodically audits the insurer (reviewing its financial statements) and presents the audited financial statements to the insurer's board with an opinion on whether the insurer's financial statements conform to generally accepted accounting principles as well as statutory accounting principles. The accounting firm usually also submits a management letter to the board—in effect, a “report card” on the insurer's financial management.

This system is not perfect, however. Outside accountants are not always thorough, and insurers can hide financial distortions. The accounting firm that conducts the audit may be friendly to the insurer's management, especially if the insurer also retains them for consulting services that generate more revenue than the audit. While the board should expect the accounting firm to be responsive to management in operational matters, but committed to the board in evaluating fiscal condition and management, striking that balance can be difficult (Akula 1997).

28. De Sa (1996) summarizes the current state of quality measurement and prospects for quality competition among managed care plans.

29. No state regulates underwriting or pricing in the large-group market (typically defined as groups of 50 to 100 or more). In general, this market functions very differently than small-group and individual markets. Specifically, insurers “experience rate” large-group clients; experience rating allows them to assume little or no risk and to negotiate a fee to cover administrative cost and profit.

30. For example, smaller insurers may offer insurance agents incentives (such as salary or fee bonuses) to screen informally for poor health status and to send applicants with health problems to another insurer. Even if such practices are illegal, they are extremely difficult for regulators to detect and document.

31. Reinsurance is a set of products sold to insurers to help them finance unusually high risk. It may be written as aggregate reinsurance (paying all claims after the insurer exceeds a threshold of total liability) or as specific reinsurance (paying all claims per enrollee above a threshold amount). Reinsurance companies pool risk across insurers, but all of the basic principles of insurance apply in reinsurance markets. Specifically, if reinsurers believe that all or many insurers in a market are likely to exceed the reinsurance threshold,

risk is nonrandom, and reinsurers will be reluctant to do business in those markets. Such a situation may arise if the introduction of health insurance is likely to cause a sudden acceleration in providers' charges—either because more care is delivered or because providers are able to shift costs (that is, to charge privately insured patients more than publicly insured or uninsured patients for the same service). Because managed care companies typically pay negotiated rates to hospitals and specialty providers and may capitate primary health care services, they may be more attractive to reinsurers in developing markets than financial insurance plans that have fewer options for controlling plan costs.

32. During the past decade many U.S. states have enacted laws requiring that health care providers prove their services are a lower-cost alternative to more conventional medical treatment before the legislature will consider proposals to require that their services be covered. Few states that have enacted such a requirement have subsequently enacted any laws requiring coverage for specific services or providers.

33. Variants of these controls are obviously valid in some settings—for example, space requirements for technology to protect health workers and patients and minimal standards for specific providers (for example, requiring that providers have the necessary equipment before government finances those services), among others.

34. Other elements of the health system—controlling hospital construction, licensing health-related businesses, medical practice, consumer protection—are much less common, not enforced, and/or counterproductive. Among these the most common are licensing of health business (as in Bangladesh, Hungary, Jordan, Philippines, Thailand, Turkey, and Uganda). South Africa licenses new hospitals, but responsibility for enforcement is at both the federal and province levels, allowing enforcement to fall between the cracks. The same is true in India. Regulations on space allocations are often enforced in Brazil and the Czech Republic, but have little or no impact on quality, effectiveness, or efficiency of health service delivery in either the public or private sector (TAI 1996; Bhat 1996).

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Private Health Insurance in Egypt

Nadwa Rafeh

This paper reviews health care financing in Egypt, particularly the role of private insurance. It begins by providing an overview of Egypt's health care system, reviewing the political and socioeconomic environment, current health indicators, the epidemiological transition of disease over time, resource distribution, and equity in service delivery.

The paper then describes the various sources of health care financing—public and private—that are in place, including government financing, public financing and social insurance schemes, and private financing. Attention then focuses on the current status of the private health insurance sector, analyzing its strengths and weaknesses from the perspective of society, consumers, and insurers.

Finally, the paper concludes by reviewing the factors that will influence the development of the private health insurance market in Egypt and describing the public sector's role in providing group coverage.

Egypt's Health Care System

Egypt's Ministry of Health was founded in 1936. The ministry quickly became responsible for a wide variety of health services and began developing new services. The first new service was a health insurance program for schoolchildren in Cairo (Kemprecos 1993). During this period significant portions of health care services in Egypt were provided by private voluntary associations (*gami'yat*).

In 1962 President Nasser's National Charter declared medical care, education, employment, minimum wages, and health insurance benefits to be basic rights for all citizens.

That same year, all private voluntary associations were brought under the regulation of the Ministry of Social Affairs, and those providing health services were required to register with the Ministry of Health. Under Nasser the government owned, operated, and financed health care facilities. In addition, two hospital networks nationalized by the Nasser regime were formed: the Health Insurance Organization and the Curative Care Organization. Until then Health Insurance Organization hospitals had been private hospitals run by foreigners and Curative Care Organization hospitals had been run by the Charitable Association of Modern Women (Kemprecos 1993).

In 1973 Egypt entered a new phase of economic and political development under President Sadat, who initiated policies aimed at increasing economic growth by encouraging foreign investment and private sector development. These policies, continued today under President Mubarak, have had a major impact on the provision and financing of health care services. In the past twenty years the number of private medical facilities has increased dramatically. Today a significant portion of health care is delivered through private hospitals and clinics.

Since 1986, under the guidance of the International Monetary Fund and the World Bank, Egypt has been implementing significant economic reform. However, reforms aimed at ending public sector dominance of the economy are proceeding slowly. There is little confidence in government privatization efforts, and legislation to support and expand these efforts has not been well developed or implemented.

The government continues to play a major role in public health through a wide range of programs and special-

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ized centers. The Ministry of Health's strategy emphasizes prevention, primary health care, drug manufacturing, free care for the indigent, and environmental protection. Successful attempts have also been made to improve health indicators through maternal and child health programs, population and family planning programs, vaccination programs, laboratories and blood banks, and control of infectious diseases.

Basic health and epidemiological profile

Historically, infectious diseases were the main cause of sickness and premature death in Egypt. Government-sponsored efforts to control infectious disease have been successful, however. The prevalence of schistosomiasis, a major health problem, dropped from 36 percent in 1981 to 10 percent in 1991 (MOH-IDC 1993). The incidence of neonatal tetanus also has dropped, from 20.7 percent in 1986 to 9.3 percent in 1990, reflecting significant government efforts through the Child Survival Project.

In addition, since 1980 the government has implemented a series of family planning and child and maternal health care programs that have helped improve health indicators. The crude birth rate fell from 37 per 1,000 people in 1981 to 28 per 1,000 in 1993. Infant mortality fell from 70 deaths per 1,000 live births in 1981 to 38 per 1,000 in 1990 (MOH-IDC 1994). Vaccination coverage is more than 80 percent for every antigen, and the percentage of children fully vaccinated has risen to 75 percent, from 58 percent in 1987. Coverage for tetanus toxoid jumped from 12 percent in 1987 to 63 percent in 1992.

MOH-IDC (1994) indicates that 28 percent of hospitalized men were admitted as a result of accidents, poison, or violence. An additional 21 percent had diseases of the digestive tract, 14 percent had respiratory diseases, 7 percent had circulatory diseases, and 6 percent had genitourinary tract diseases. Women were mainly admitted for childbearing, with obstetrical-related hospitalizations accounting for 35 percent of female admissions. Other causes of female hospital admission included digestive diseases, accidents, and respiratory and genitourinary diseases.

Mortality data also show that an epidemiological transition has been taking place over the past decade. In 1982 the distribution of deaths was fairly evenly distributed among

circulatory, respiratory, and infectious and parasitic diseases. By 1990 circulatory diseases accounted for 42 percent of all deaths among men and 44 percent among women, and the proportion of respiratory and infectious and parasitic deaths had decreased.

Although infectious diseases are no longer the leading cause of morbidity and mortality, there is still a great deal of work to be done in the prevention of infectious diseases such as hepatitis, trachoma, and schistosomiasis. Epidemiological data suggest that there are areas where modest investment in health care can significantly reduce infectious disease rates. Population growth will continue to exert pressure on all aspects of the economy for years to come. In 1990 more than 39 percent of the population in Egypt was under the age of 15 (World Bank 1992). With the successful control of infectious disease, the population is living longer and chronic diseases are becoming the main contributors to morbidity and mortality.

Hospital and provider profile

During the 1980s the government began allowing the establishment of private hospitals, leading to a significant increase in the number of beds in the private sector. Between 1975 and 1990 the number of hospital beds in Egypt rose by 60 percent, to more than 110,000 beds. During the same period the number of private beds increased by 180 percent, to about 11,000 (Boutros 1992). Almost half the private hospital beds are in Cairo.

Hospital occupancy rates are generally low, with a national occupancy rate of 49 percent. Although there are no accurate data on occupancy rates in private hospitals, evidence suggests that occupancy rates range between 60 and 70 percent, and many of these hospitals are struggling to maintain profitability (Kemprecos 1993). Public hospitals have occupancy rates as low as 40 percent.

There are many private clinics throughout the country, particularly in rural areas. Many of these clinics provide limited inpatient services for recovery after minor procedures. Many clinics are attached to mosques, churches, and charitable organizations and provide a wide range of outpatient services.

There are 19.6 physicians, 2.5 dentists, 5.6 pharmacists, and 19.6 nurses per 10,000 people in Egypt. About half

the physicians are employed by the Ministry of Health. The government policy guaranteeing a job for each physician upon graduation has led to overstaffing of physicians within the ministry.

Public Sources of Financing for Health Services

In 1991 Egypt spent about 4.7 percent of GDP on health care. Although the health care system is predominantly public, several different government, nonprofit, and private organizations provide and finance health care. There are four main financing mechanisms:

- *Government financing*—direct payments made by the government for health care. The Ministry of Health is the main government agency funding health care. Other ministries that own and operate health facilities include the Ministries of Education, Defense, Interior, Transportation, and Social Affairs. The Ministry of Education plays an important role in financing medical education and university hospitals, thus funding a significant portion of tertiary care.
- *Public financing*—including social insurance (such as the Health Insurance Organization) that provides care to selected groups as well as the Teaching Hospital Organization, Curative Care Organization, and other public firms. These organizations have several sources of funding, including revenues, premiums paid by enrollees, and government contributions. The Health Insurance Organization is the largest source of public financing, providing care to public and private sector employees.
- *Private financing*—including privately owned organizations, private insurance companies, unions, cooperatives and professional organizations, and nonprofit non-governmental organizations (NGOs). NGOs are one of the fastest-growing sectors in Egypt. Funding for these organizations is provided by national and international donors, mosques and churches, and individuals. NGOs are considered more cost-effective than public providers and provide higher-quality services for the charges.
- *Household payments* through direct payments.

The distribution of expenditures on health care is shown in table 1. Most health care financing is through direct house-

hold (out-of-pocket) expenditures on health care, which account for 55 percent of spending. Another 33 percent is financed by government ministries, 9 percent by public financing (mainly through the Health Insurance Organization), and 3 percent by private firms, insurance companies and unions, and professional organizations. Out-of-pocket expenditures mainly cover outpatient care.

The average household spends LE 380.5 (about \$113) a year on outpatient care, compared with LE 35.4 (about \$9) on inpatient care (table 2). Drugs account for 53 percent of outpatient expenditures. Thus, of the average LE 410 spent on health care each year, 92 percent is spent on outpatient care and 8 percent on inpatient care. Per capita expenditures in urban areas (LE 106) are almost twice as high as those in rural areas (LE 59).

Ministry of Health

The government guarantees all citizens the right to free health care through a network of 225 hospitals and 2,000 clinics operated by the Ministry of Health. The free health care policy serves as a safety net for a large segment of the population, mainly low-income groups. The government also provides free medical and nursing education and, through its employment policy, guarantees jobs in Ministry of Health facilities to all graduating physicians.

TABLE I

Distribution of health care expenditures in Egypt by source of financing, 1991

Institution	Millions of Egyptian pounds	Share (%)
<i>Government</i>		
Ministry of Finance	182	4
Ministry of Health	782	19
Ministry of Education	270	7
Other ministries	107	3
Total	1,341	33
<i>Public</i>	370	9
<i>Private</i>		
Firms	70	2
Private insurance/unions	30	1
Total	100	3
<i>Household payments</i>	2,263	55
Total	4,115	100

Source: World Bank data.

In principle, ministry facilities provide comprehensive coverage, including emergency care. In practice, the care provided in ministry-run hospitals is limited in volume and quality due to budget constraints. The ministry also subsidizes costly tertiary care to indigent patients, including open-heart surgery, renal dialysis, and treatment of malignancy.

The ministry is the main provider and financier of health care. Almost two-thirds (62 percent) of the hospitals in Egypt are run by the ministry. In urban areas, where most private, university, teaching, and Curative Care Organization hospitals are concentrated, ministry facilities account for 25 percent of hospitals. In rural areas such as Upper Egypt and the Sinai, ministry facilities account for 83 percent of hospitals.

Through the various ministries, the government accounts for 33 percent of the country's annual health care expenditures (see table 1). The largest portion is spent by the Ministry of Health (19 percent of the total). In 1993 the ministry's budget was about LE 1 billion (MOH-IDC 1993). The ministry's budget includes government allocations, revenues generated by ministry facilities, and grants from donor agencies. The budget has shown a steady nominal increase for each of the past five years. These increases have not kept pace with inflation, however, so in constant terms the ministry's budget has been decreasing. The budget has also been decreasing as a share of government spending; during this period the ministry's budget was about 1.8 percent of the overall government budget. Nearly two-thirds—65 percent—of the ministry's budget is used to pay salaries, 21 percent is used for operating costs, and 14 percent for capital costs.

TABLE 2

Annual household expenditures for inpatient and outpatient care in Egypt

	Inpatient		Outpatient	
	Egyptian pounds	Share of total (%)	Egyptian pounds	Share of total (%)
Doctor fees	20.0	32	76.2	20
Drugs	7.2	28	101.2	27
Other	8.2	40	203.1	53
Average household expenditure	35.4	100	380.5	100
Annual number of visits	0.034		4.62	

Source: Adapted from Berman 1995.

About 60 percent of the ministry's budget is allocated to ministry operations, 26 percent to the Health Insurance Organization, and 8 percent to the Curative Care Organization. Ministry support for Curative Care Organization operations is in the form of loans and interest payments. Additional support is provided for operating and capital expenses. The ministry does not support Curative Care Organization salaries.

About 42 percent of the ministry's budget is allocated to curative care, of which about half is allocated to hospitals. Curative care is defined as treatment of acutely ill patients, including pregnancy and childbirth, on an outpatient or inpatient basis. Most of the curative care budget is allocated to urban areas such as Cairo and Alexandria. Primary care receives about 37 percent of the budget, and preventive care only 8 percent. Almost three-quarters (71 percent) of the primary care budget is allocated to rural areas. Most of this money is spent on rural health center operations and construction or renovation of rural health care units.

The government's "free health care for all" policy has significant implications for the delivery of health care through government-owned facilities. Budget limitations, a rapidly growing population, the inability to charge fees for services, and the policy guaranteeing jobs for all graduated physicians are among the biggest constraints facing the Ministry of Health. Moreover, the ministry cannot provide the comprehensive health care coverage available through private insurers and private providers. The ministry also cannot compete with the private sector in terms of quality of care and patient satisfaction. And because the ministry is poorly staffed and poorly funded, it is the provider of last resort for people who cannot afford to purchase care from other sources.

Health Insurance Organization

The Health Insurance Organization (HIO) is the largest insurance organization in Egypt providing health insurance to a defined beneficiary population. HIO is a mandatory social insurance program; participation is required by all company employees. Article 32 of Egyptian law requires the participation of government workers and Article 79 requires the participation of private workers in HIO's health

insurance program. HIO covers eligible employees, widows of deceased beneficiaries, and pensioners. It does not cover spouses, children, or other family members of employees. In 1993, however, the program was extended to cover about 10 million schoolchildren. Today the program covers more than 15 million beneficiaries, almost a fourth of Egypt's population.

HIO operates twenty-five hospitals containing about 4,500 beds as well as 116 outpatient clinics. Overall bed occupancy in HIO hospitals is about 69 percent, and the average length of stay is 5.9 days. HIO staffs small aid stations with one doctor and one nurse at work sites with more than 3,000 employees.

Revenue for HIO is provided by employee and employer contributions and government subsidies. HIO is predominantly an employment-based insurance program, with employers and employees paying a portion of salary as premiums. Under Article 32 government employees pay 0.5 percent of their base salary and their agency or ministry employer pays 1.5 percent to HIO. In addition, government employees must make small copayments. The copayments are quite small and do not discourage inappropriate or excess use of HIO services.

Private sector workers covered under Article 79 must pay 1.0 percent of their base salary to HIO and their employer must contribute 3.0 percent. Because of the higher premium, no copayments are required for private sector workers. Pensioners and widows are required to pay 1.0 percent of their basic pension as a health insurance premium. Pensioners and widows are the fastest-growing segment of HIO beneficiaries, increasing by 15.5 percent between 1991 and 1992. Other beneficiary groups increased by 4–6 percent during the same period. Pensioners and widows are also the most frequent users of health care services, posing an ever increasing financial burden on the HIO program. Since 1995 the Student Medical Insurance Program has been another source of funding for HIO. Small annual subscriptions are paid by students at every level of education as part of their tuition.

In 1984 the government permitted employers to request waivers from HIO participation if their employer provides similar health insurance coverage to all employees. However, this law requires employers to continue to pay HIO a premium equal to 1.0 percent of each employee's basic salary.

By 1993, 561 companies had received waivers to opt out of HIO. The characteristics of these companies and their reasons for not participating in HIO have not been analyzed. Anecdotal evidence suggests that companies requesting waivers do so because of widespread dissatisfaction with the quality of health care provided under HIO. HIO is also criticized for making it too easy for employees to take sick leave.

Most companies opting out of HIO become self-insured, providing health care coverage through contracts with the Curative Care Organization, private hospitals, and health care providers. Other companies purchase group health care coverage through private insurance companies. Most employers that opt out of HIO are in the private sector and are financially sound. Similarly, HIO members who can afford higher payments often choose to pay out of pocket for services or to buy alternative private health insurance. Individuals choosing not to use HIO services are more likely to be eligible for health insurance provided through professional organizations or cooperative private voluntary organizations.

HIO provides a comprehensive package of health care benefits. Currently, however, there is a substantial gap between the premiums paid to HIO and the costs incurred by the program. In 1993 HIO experienced a net operating loss of LE 14.9 million after accounting for all premiums paid and all government subsidies. There are several reasons HIO has been unable to operate profitably.

First, health care coverage through HIO is provided to all eligible beneficiaries regardless of preexisting conditions or other high-risk characteristics. Denying coverage based on health status and requiring higher premiums for high-risk groups is contrary to the government's goals for the HIO social insurance program. HIO's inability to apply standard underwriting practices makes it extremely difficult for the program to meet its financial objectives.

Second, HIO faces significant problems regarding inappropriate and excess use of services. For example, HIO provides a generous drug benefit over which it exercises little or no control. As a result many beneficiaries use their HIO benefits to obtain medications at minimal or no cost.

The government is likely to expand health care coverage through HIO. The recent expansion of HIO coverage to students is an example of the government's policy objec-

tives. Yet the premiums and subsidies collected by HIO are insufficient to pay for the care provided to the increasing beneficiary population. It is unclear whether HIO has the management capabilities to deal with an increasing beneficiary population and implement the reforms needed to allow it to play an expanded role in health insurance coverage in Egypt.

Curative Care Organization

The Curative Care Organization (CCO) is a parastatal overseen by the Ministry of Health. The CCO runs twelve hospitals containing a total of 4,846 beds. The hospitals are located in six governorates, with the largest in Cairo and Alexandria. As noted, CCO hospitals were private until they were nationalized in 1964 under the Nasser regime.

CCO provides services to four groups of users: employees through contracts with employers, individuals on a fee-for-service basis, low-income groups, and accident victims free of charge. In 1993 the CCO signed a contract with HIO to provide health care services to students attending vocational schools. The CCO is financed through contracts with employers opting out of the HIO insurance program, contracts with HIO, out-of-pocket hospitalization fees, and from Ministry of Health grants that cover the free treatment of low-income patients. Almost half of inpatient admissions to the CCO are covered by contracts with companies, and more than a third of patients pay out-of-pocket fees.

Sources of revenue for CCO hospitals include fees from laboratory and inpatient services, premiums and fees from companies with contracts, a percentage of drug sales, government subsidies for free beds, and donations and grants.

Private Sources of Financing for Health Services

Private financing of health care is limited. As noted, private funds accounts for about 3 percent of national health care expenditures. The private sector includes privately owned organizations, private health insurance companies, and NGOs. Privately owned organizations serve as financiers and providers of health care, while private health insurance companies finance health care through funds collected from individuals and employers on behalf of their employees.

There are three main forms of private insurance coverage: policies purchased through private health insurance companies, group insurance policies purchased through unions, professional organizations, and cooperatives, and self-insurance policies where care is provided under contract with hospitals and physicians and funded from internal resources. About 100,000 people are covered under policies purchased from private insurance companies and 160,000 people are covered under union or professional organization policies. These policies may be used to supplement other social health insurance programs or to provide comprehensive coverage for people who can afford it.

Household out-of-pocket expenditures

As noted, household out-of-pocket expenditures are the largest source of health care spending. In 1991 household out-of-pocket payments accounted for 55 percent of health care expenditures, or LE 2.3 billion. In addition, employees must contribute to HIO premiums or to private health insurance plans (for companies that opt out of the HIO program). Employees spend an estimated LE 90 million on HIO premiums and LE 10 million on other health insurance.

Health maintenance organizations

Several attempts have been made to establish health maintenance organizations (HMOs) in Egypt. The Middle East Medicare Plan, established in 1989, was the first nonprofit organization operating according to principles of managed care. This plan now covers 10,000 subscribers through contracts with thirty-six companies. The plan offers a full range of services, including comprehensive outpatient and inpatient services as well as emergency care. The policy does not, however, cover dental care, care associated with pregnancy, home visits, regular checkups, or eyeglasses. Marketing of the Medicare plan has focused on group enrollment, which tends to minimize problems of adverse selection. Members or their employers pay the annual Medicare premiums on a per capita basis.

The Medicare plan has adopted a number of practices to control costs and remain profitable. The company underwrites coverage and maintains the right to evaluate indi-

viduals above the age of 45 and to exclude high-risk individuals and those with preexisting conditions. To minimize overutilization, the company uses affiliated physicians to act as gatekeepers and to continuously evaluate medical need and appropriateness. Premiums are adjusted each year based on historical utilization.

Medicare premiums are lower than those of other private insurance companies. This HMO is considered a success, and the number of groups or companies contracting with it increases each year. However, most of Medicare's contracts are with international companies and with embassies. Thus it is unclear whether Medicare's experience can be expanded to the national and public organizations that form the bulk of the market.

Professional organizations, unions, and cooperatives

Health insurance plans provided through professional organizations and unions and cooperatives are common in Egypt. There are about twenty-one professional organizations (medical practitioners, engineers, lawyers), most of which make a health insurance plan available to their members. Health coverage in many of the union plans can be extended to cover family members and retirees.

Medical Union is the largest and most successful health insurance plan. The plan is open to medical association physicians, dentists, pharmacists, and veterinarians. Like other professional-based health care plans, the medical association provides eligibility to all its members and their families. The plan also covers retirees and widows of deceased members. Medical Union has about 160,000 members and covers a wide range of services, including hospitalization, outpatient visits, diagnostic procedures, emergency care, and dental care.

The plan uses a number of measures to control costs and utilization of services, including requiring copayments, setting moderate reimbursement limits for hospitalization and key procedures, providing information to beneficiaries about the cost of services and procedures offered by different providers, and requiring preauthorization for hospitalization and major outpatient procedures. Preauthorization allows beneficiaries to verify their remaining credit with respect to the reimbursement limit. Utilization of outpatient services is controlled through the use of vouch-

ers. Beneficiaries are given five vouchers for outpatient care each year. The plan maintains a list of 20,000 providers, 160 hospitals, and 300 laboratories accredited for payment by the health plan.

Members pay a fixed annual premium to participate in the plan. Fees are based on a sliding scale that increases with length of membership. This system makes participation in the program more affordable to young physicians and other union members at the beginning of their careers. In addition to premiums, plan participants must make copayments each time medical care is received. The copayment is determined by the type of facility and service used. Specialty care requires higher copayments.

The plan has a good reputation among its beneficiary population. Most beneficiaries use their participation in the plan to replace services available through HIO. The Medical Union plan provides members with the freedom to choose their providers from the accredited list and receive high-quality care at a price they can afford.

Private health insurance

Egypt has a small private health insurance sector accounting for about 1 percent of annual health care expenditures. Insurance companies established prior to the revolution were nationalized in 1961. All others were developed by major Egyptian banks. Although insurance companies provide a wide range of insurance coverage, health plans form a small part of the insurance market. Thus health insurance plans are not preferred by insurers. Only three public organizations and one private company offer health insurance.

Private health insurance mainly covers people who are ineligible for public insurance (such as family members of employees and the unemployed) and employers and groups who elect not to use public insurance because of its lower quality. Private health insurance serves mostly private, well-financed companies and high-income individuals who can afford to pay the high cost of premiums. Private health insurance is also used by the international community residing in Egypt.

As in many developing countries, private health insurance is growing. Since the 1980s Egypt has reluctantly implemented structural health sector reforms accompanied by

shrinking central spending on health care. Today Egypt is passing through a transitional phase, focusing on reform of the public health care system to decentralize and provide greater autonomy to Ministry of Health facilities. The ministry is exploring different financing mechanisms—such as cost recovery for curative care—while maintaining preventive care, primary health care, social health insurance, and care for the elderly and the indigent within the domain of the public sector.

Health system reforms are also aimed at increasing freedom in the private health insurance sector. However, it is unclear whether social, legal, and economic factors will provide the necessary incentives for expansion of the private insurance sector. The following sections analyze the factors affecting the development of private health insurance and the impediments this industry faces. The market is analyzed from the perspective of the government, consumers, and insurers.

Government perspective. Current government policies do not support the growth of private health insurance, nor do they encourage beneficiaries to leave the social insurance program. Indeed, for a number of reasons government policies are intended to maintain the largest possible pool of beneficiaries in public programs:

- *Social concerns.* In any health care system, basic values underlie policy decisions. To understand the health insurance sector, its funding mechanisms, scope of benefits, and extent of coverage, the social objectives of health care must be defined. Egypt's constitution guarantees all citizens access to free health care services. Over the years the government has pursued this objective using two parallel strategies. The first included direct government financing and service provision. The second extended coverage using mandatory social insurance.

The Nasser regime strengthened the right to free care. The government made efforts not only to finance health care but also to provide free services through a network of health clinics and hospitals owned and operated by the Ministry of Health. The government financed medical education and guaranteed all graduating medical doctors and nurses employment in public facilities. The government also guaranteed medical coverage to specific population groups, including the Army, Internal

Security Forces, and employees of specific ministries. Other employees received mandatory health care coverage through the HIO social insurance program.

From a political perspective, public financing of health care services has been important because it has generated a sense of social solidarity and equity and guaranteed universal access to care. But these social objectives cannot be achieved without paying a price. Funding for the Ministry of Health has been limited to less than 2 percent of the government budget, and these funds are insufficient to meet the government's commitments to health care. The provision of health care services is not equitable, with far worse access for the poor and the unemployed. Low-wage workers must accept poor-quality care and pay many expenses out of pocket.

- *Economic concerns.* Significant portions of the Ministry of Health's budget go to fixed costs such as salaries. The government policy guaranteeing employment to all medical school graduates results in increasing salary costs regardless of the number of beneficiaries of public programs. Thus the government must maintain high levels of participation to cover these fixed costs.

The government is also forced to continue requiring companies opting out of the public health insurance program to pay a 1 percent salary tax to support HIO. However, the companies that opt out of HIO are likely to have employees in good health. Thus an increasing number of low-income and less-healthy individuals (such as widows and pensioners) are participating in HIO and increasing costs.

It is difficult to achieve an equitable public health care delivery system with a stable share of spending while relying predominantly on private insurance. The combination of finance, regulation, and mandates needed to achieve such an outcome may be theoretically feasible but are politically and operationally impossible.

Consumer perspective. A large portion of health care in Egypt is financed out of pocket, which explains why there is a potential market for private insurance. However, three consumer-related factors limit the growth of Egypt's private health insurance market. First, the affordability of private health insurance. Most Egyptians cannot afford private insurance premiums, and most public sector companies lack sufficient capital to seek group policies through private insur-

ance. Thus private insurance is likely to serve only private, high-income employers and wealthy individuals. For most of the population private health insurance premiums without public support is still beyond reach.

Second, the availability of private insurance. For most Egyptians private health insurance is not provided as an option for health care coverage. Insurance coverage is not universal, and those who are not provided with coverage through their employer or through another affiliation are less likely to seek private health insurance. The unemployed, the self-employed, and workers in small companies are likely to seek coverage through Ministry of Health facilities or through private providers who are paid out of pocket.

Finally, the acceptability of private health insurance. Cultural and social factors play an important role in determining the acceptability of private health insurance. Although the public recognizes the protection against risk that insurance can provide, there is a lack of confidence in private insurance plans to provide coverage when needed. For private insurance to become a major source of coverage, the design and implementation of insurance plans must be simplified.

Insurers' perspective. Although the insurance market is well developed, private health insurance still lags behind. For insurers, the current marketplace provides few incentives to invest in private health insurance plans. Legal, managerial, and economic constraints hinder the ability of private health insurance to be profitable and to grow.

There are legal constraints to starting a new insurance company, domestic or foreign. Government regulations require capital reserves to enter the health insurance market that are beyond the capacity of many investors. These regulations serve as barriers to market entry and reduce competition.

Because private health insurance is not legally mandated and there is no obligatory mechanism to insure the self-employed, private insurance is less important and many Egyptians are uninsured. Furthermore, the law guarantees employees the right to opt out of insurance plans if they obtain similar insurance through other providers. This option diminishes the size of the risk pool and reduces the economic advantage to the insurer. Government laws also discourage businesses from opting out of social insurance plans

(such as HIO) to seek more efficient private insurance plans. As noted, companies that opt out of HIO are still required to pay a 1 percent premium to HIO.

From an economic perspective, health insurance offers limited profitability to insurers because premiums are too low relative to the costs of providing health care. Evidence suggests a minimal, if not negative, return on investment for most private insurance plans. Insurance premiums are low because companies try to make them affordable or because companies cannot accurately assess risks. Moreover, health insurance plans create many time-consuming problems and contribute little or nothing to companies' profit margins (Kempresose 1993).

Health insurance management and administration poses yet another constraint on the insurance industry. The industry has poor information technology and weak underwriting skills and lacks expertise in processing claims and designing policies to meet the needs of Egyptian clients.

Conclusion

Health care financing in Egypt and the role of private health insurance must be viewed in perspective to the overall economy. For years Egypt's centralized health care system has faced significant problems. The government has been unable to provide high-quality and efficient public services to its citizens, while private initiatives have been constrained by legal roadblocks, lack of a skilled workforce, poor technology and infrastructure development, and a complex and burdensome regulatory environment.

In the past few years Egypt has embarked on substantial economic and political reform that is likely to affect the health care sector in general and the health insurance market in particular. These reforms have encouraged privatization, increased international trade, and loosened legal constraints on foreign investment. The government recently signaled its commitment to world trade by signing the General Agreement on Tariff and Trade (GATT). It also has loosened laws on private insurance. A law allowing the development of new insurance companies has been proposed and is being studied. The government also has lowered capital reserve requirements for insurance companies to LE 60 million to comply with GATT regulations (Kempresos 1993).

Economic reform is likely to increase the demand for private health insurance as incomes increase, employment rises, and the number of national and international companies operating in the country increases. These companies are expected to be financially strong and better informed about health insurance plans, benefit packages, and the value received for their money. The larger market will stimulate competition between health insurance companies and providers and reduce the cost of care. As noted earlier, many private organizations opt out of HIO and contract with the CCO, private hospitals, and private health insurance plans. This trend is likely to continue, especially if the quality of HIO services continues to be poor.

Still, private health insurance coverage will continue to be limited to small segments of the population, mainly employees of financially strong companies and high-income individuals, and will likely remain beyond the reach of most Egyptians. Most will continue to rely on public organizations and public financing to meet health care needs. However, for the government to meet its social objectives in health care, significant reform is needed in public sector finance, management, and quality of care. As things stand, public health care coverage is likely to take two approaches.

First, HIO will likely play an expanding role in health insurance coverage. The government is considering increasing the number of HIO beneficiaries to cover more segments of the population (such as children under the age of five). HIO will also remain the primary health insurance option for workers and schoolchildren. However, it is unclear whether HIO has the capability to manage an increase in the number of beneficiaries. Significant reform is needed to improve the efficiency of HIO services. HIO should consider different service delivery models and strengthen its ability to design and regulate benefit plans. HIO has a staff model managed care structure that provides a fertile setting for adopting contemporary managed care approaches. Through reform, HIO may gain the expertise needed to design and implement comprehensive group coverage under a unified social policy.

Second, the government will continue to provide health coverage to groups that are not eligible for HIO coverage. Ministry of Health medical facilities must continue to meet the social objectives of providing free access to health care services and serving as a safety net, especially for low-income

people. However, the ministry is underfunded and cannot hope to achieve this goal. Available services in ministry facilities are likely to remain scarce, and the quality of care in these facilities will remain poor. Two efforts are needed to improve coverage in ministry facilities:

- The population served by the ministry should be better defined and the basic benefits package provided to this population should be specified. Continued and increased government funding should be given to ministry facilities that are able to meet government targets for specific measures of health status, utilization, and quality of care.
- Decentralization of ministry facilities is essential to improve the efficiency of public services. Through cost recovery efforts, public hospitals today are testing different financing mechanisms, including contracting with employers and HIO for group coverage. Although public hospitals lack the expertise to design benefit plans, pool risks, and calculate premiums, these attempts are likely to raise awareness, understanding, and demand for health insurance.

Finally, the development of knowledgeable consumers is imperative for the development of a private health insurance market. Many people do not understand their health risks, the importance of risk sharing, and prepayment for unforeseen illnesses. Cultural acceptability of the basic values of health insurance also remains weak. Unless society perceives the need for insurance coverage, private health insurance will continue to serve a limited segment of the market in Egypt.

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Strategies for Pricing Publicly Provided Health Services

Paul J. Gertler and Jeffrey S. Hammer

Most governments spend a lot on health. How these public expenditures are financed is a crucial element of successful health policies, because it determines the budget available for public activities and has implications for how expenditures are allocated. Public expenditures are financed by both public and private sources, with public subsidies from the general government budget supplemented by private revenue from user fees. This combination affects how public subsidies are allocated and determines who gets them. Subsidy allocation decisions also determine the extent to which the poor are cross-subsidized. The structure of fees creates financial incentives that affect utilization patterns and health outcomes, and affects how well individuals are insured against the risk of large economic losses associated with unexpected illness.

This paper examines the way governments finance and allocate public expenditures on health. Much of the policy debate has focused on the extent to which governments are able to mobilize private resources to supplement public subsidies in financing these expenditures. Proponents of private resource mobilization argue that individuals are willing to pay for medical care and that additional financing will allow governments to expand and improve crucial programs (World Bank 1987; Jimenez 1996). Opponents argue that the poor are unable to pay for medical care and will be worse off if governments expand private resource mobilization (Cornia, Jolly, and Stewart 1987; Gilson 1988).

Most of the literature contributing to this debate has focused on the technical issues of how much money can be mobilized and what impact it has on health outcomes and

access to medical care. While informative, this literature does not fully prescribe optimal policy. Optimal policy needs to be based on the benefit that the policy would have for society above and beyond what would have happened in the absence of public intervention. The benefit of a proposed policy is the extent to which it ameliorates individual and social losses from private market failures. Priorities should be based not only on the effectiveness of the policy, but also on the importance governments place on the types of losses and the individuals who incur the losses.

We examine the implications of current policies and possibilities for policy reform in the context of competing government priorities. Governments can intervene to correct private market failures that cause health outcomes to be lower than they otherwise could be, to cross-subsidize the poor's access to medical care, and to correct insurance and medical care market failures. Since governments have budget constraints, they cannot fully subsidize all programs and activities. This paper argues that:

- Public spending on health can improve health outcomes, promote non-health aspects of well-being (for example, by insuring that individuals are not at risk for the large unexpected economic losses associated with random adverse health events), and redistribute purchasing power to the poor. Optimal subsidy and fee policy will differ depending on how much weight government places on these competing objectives. Subsidies need to be reallocated toward the poor and toward public health programs. However, increasing public subsidies can finance only a fraction of the resources needed to expand the health sector.

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- Prices for curative services (user fees) have two distinct roles. They can raise revenue, freeing public resources that can be reallocated to public health activities and to limited cofinancing of quality improvements in curative care. But perhaps more important, they can increase efficiency in the use of public facilities and in the health care system as a whole. However, these gains must be weighed against evidence that higher fees can compromise the objectives mentioned above. The literature on user fees has tended to focus on raising revenue (and its consequences for the poor), but their more important effect is likely to be in the allocation of resources. In general, user fees at the point of service can play an important role in cofinancing health care, but not as the primary means of finance.
- Revenue from user fees is sometimes used to finance improvements in the quality of and access to curative medical care. Individuals are willing to pay at least some of the cost of improving quality and access, especially for drugs. However, the rich are willing (and able) to pay a lot more than the poor. Thus if governments use the average “willingness to pay” amount to finance quality improvements, the rich will use more services and the poor will use less.
- Optimal policies also depend on the behavior of consumers, private providers, and civil servants. Consumers and private providers determine the market environment in which policies operate—defining limits to or in some cases additional opportunities for what can be achieved. Civil servants determine the ability of governments to implement policies. Policies that are optimal in one context should not be generalized to all. Countries differ significantly in the relative weights they place on policy goals, and in the constraints they face in their resources and in the reactions of markets. Serious policy formation requires considerably more analysis relative to ideology than has characterized debates on the topic.
- Social insurance plans, which enable governments to mobilize private resources for health by collecting prepayments and charging for the health services provided to beneficiaries, hold promise, particularly for middle- and high-income countries. These schemes mobilize private resources with no loss in the insurance value of the public health care system. Price discrimination is easier

because it can be centralized and needs to be done only periodically, outside the pressure of having to treat an illness. Despite their promise, however, prepayment plans often introduce inefficient medical care cost inflation that developing countries may be unable to afford.

The next section discusses the role fees play in the budgetary process, considering how fees can stretch the government’s budget for various programs and how they can be used to allocate public subsidies. From this discussion comes a set of conditions that determine how fees affect budgetary flexibility—most of which concern how price and quality affect utilization. The third section reviews the empirical literature on utilization. The fourth section uses the information presented in the previous sections to recommend optimal fee policy, reflecting government objectives. The final section presents conclusions.

Role of Fees in the Budgetary Process

Public expenditures on health are financed by revenues from private sources and allocations from the general government budget (general tax revenues and donor assistance). In many countries, especially developing countries, the public sector collects private revenues through fees charged at the point of service.

Much of the literature justifies increasing user fees in terms of mobilizing resources (or achieving cost recovery) and in terms of creating incentives for more efficient use of public medical services (World Bank 1987). But an equally important role for fees is in determining the allocation of subsidies from the general government budget across services (hospitalization, primary care, vector control) and types of individuals (the poor, the elderly, children). The allocation of subsidies is one of the main policy instruments governments have to correct health care market failures and improve welfare.

This section describes the role of user fees in determining the government’s budget constraint. The structure of fees determines not only the amount of resources available and the amount spent on each program, but also the extent to which a particular program’s expenditures are publicly subsidized. It is important to remember that this discussion is limited to how fees affect the budget. It says nothing about which programs should be funded, how much

should be spent on them, and how much of the expenditure should be financed by public subsidies. That discussion, covered later in the paper, requires information on the benefits of such allocations and the objectives of government intervention.

The budget constraint

Most of the resource allocation decisions that public health care systems must make are related to one another through the government's budget constraint. The two main types of decisions are: What services should be offered, and of what quality? And what should the user fee or copayment be for each service?

These decisions are relevant to all levels of government where officials have to make finance and resource allocation decisions. In many countries such decisions are made at high levels of government—either the central or provincial level. Other countries are devolving resource allocation and financing decisions to local levels. The analysis below applies to local officials and public facility-level managers as well as central and provincial officials. The extent to which it applies to the local level depends on the degree of autonomy in the system.

The level of services and the fee structure cannot be set independent of one another, but rather must be set to satisfy the budget constraint—that is, total expenditures must be less than or equal to total revenues. Revenues come from public subsidies and general tax revenue and from user charges for services provided. This budget is spent on administrative costs, inpatient services, outpatient services, and public health disease prevention and control activities.

Government spending on health covers a wide range of services, from public health activities (such as the prevention and treatment of communicable diseases) to curative services that benefit only the individual. Spending on some programs (hospitalization, primary care, prenatal care) depends on the number of people who demand care. Although there may be short-term rationing of these services, in most cases the public sector is obliged to provide these services to all who request them. The costs of other programs, such as mass information campaigns and vector control programs, do not depend on the number of users. In many cases the amount of funds available for these pro-

grams is determined by the residual amount left over from spending on prevention and treatment services.

The government's budget constraint, which sets expenditures equal to revenues, can be expressed as:

$$A + \sum_I c_{iI} U_{iI} + \sum_I c_{iO} U_{iO} + CDC = \sum_I f_{iI} U_{iI} + \sum_I f_{iO} U_{iO} + G$$

where A is administrative costs, c_{iI} is cost of inpatient service i , U_{iI} is utilization of inpatient service i , c_{iO} is cost of outpatient service i , U_{iO} is utilization of outpatient service i , CDC is expenditures on programs that are not utilization driven (vector control, research, sanitation, water treatment), f_{iI} is user fee charged for inpatient service i , f_{iO} is user fee charged for outpatient service i , and G is subsidies from general tax revenues.

Many policymakers promote user fees as a way of mobilizing private resources for public expenditures. It is important to note, however, that charging user fees is not the same as forcing individuals to pay out of pocket. Here we define user fees as the price received by a facility or program—not necessarily what individuals pay at the point of service. Indeed, individuals could contribute to prepayment or insurance plans to finance their payment of fees at the time of treatment. Moreover, fees are not necessarily paid to providers in the form of fee-for-service. Prepayment and insurance plans could just as easily pay providers by capitation. But since insurance affects people's utilization decisions and the form of payment affects provider behavior, the source and form of payment need to be taken into account when deciding on the structure of fees.

Although the above characterization of the public budget constraint is described in the context of centralized decisionmaking, it can easily be generalized to a less centralized structure. The simplest and most efficient budgetary model is one in which the entity that collects fees keeps them and is free to use them as it sees fit. In this case fee revenues expand available resources and local managers, if competent and publicly motivated, can use the resources to improve welfare. In this case the central government must decide how to allocate subsidies from the central budget among national programs and to lower levels of government (provinces, districts, states, and so on). These lower levels of government then combine these allocations with subsidies from the local budget and decide

how to allocate the combined resources among facilities and local programs. Then each facility and program combines these allocations with fee revenue and makes expenditure allocation decisions among programs and services. Thus each decisionmaker in the process receives an allocation from a higher level of government—*G* in the above equation—and combines it with local resources to finance expenditures.

Resource mobilization

The classic approach to resource mobilization is to raise prices (user fees) to generate private revenues that can be used to finance a service or finance improvements in the quality of that service. The practice of charging user fees for medical services at public facilities has been adopted throughout much of the world (Griffin 1987; Nolan and Turbat 1995; Jimenez 1996). However, fee structures and control over revenues vary greatly across settings.

Much of the evaluation of resource mobilization focuses on cost recovery—that is, the percentage of costs covered by fees. However, it is not clear how to evaluate resource mobilization efforts when cost recovery is limited. In particular, the value of private resources needs to be measured in terms of freeing up scarce public subsidies that can be reallocated to high-priority programs (such as contagious disease prevention and vector control) and in terms of providing facility managers with enough additional resources (such as drugs) to make up the difference between effective and ineffective treatment. The value of private resources depends on the extent to which the funds provide needed budgetary flexibility at the margin, where small amounts of money go a long way.

Creese and Kutzin (1995) examined national cost recovery ratios from fifteen (mostly African) countries and found that eleven have fee revenues that finance less than 5 percent of public expenditures. While such levels are substantially less than the 10 to 20 percent potential cited in World Bank (1987), it is hard to evaluate these data outside the countries' institutional and policy environments. A number of questions come to mind. For example, how do these cost recovery ratios compare with government targets? And how much potential revenue is not being collected, and why? Many countries do not allow local units

to retain and spend the fees that they collect, and dedicate few resources to administering and monitoring collection. In addition, these data usually come from national information systems that suffer from serious underreporting.

These data do not imply that well-designed and -administered programs cannot mobilize resources—just that many of the countries studied lacked the political will to do so. By contrast, China has been extremely successful in mobilizing resources through fees (World Bank 1996). Even in 1978, before recent reforms were initiated, subsidies from general tax revenues financed just 28 percent of public health expenditures. By 1993 public subsidies accounted for even less—14 percent of public health expenditures. The rest was financed through fees charged to both insured and uninsured patients. Indeed, cost recovery ratios are also high in local initiatives, where the revenue is typically retained and where it is easier to implement and evaluate resource mobilization efforts. For example, in 1993 the revenues from fees charged to insured and uninsured patients accounted for 91 percent of hospital expenditures and 84 percent of health center expenditures in China (World Bank 1996). In Senegal private revenues amounted to 127 percent of recurrent expenditures in health centers (UNICEF/BIMU 1995). Similar levels have been reported in Latin America and elsewhere (Richardson and others 1992; Olave and others 1992; Barnum and Kutzin 1993; Lewis 1993). In addition, McPake, Hanson, and Mills (1993) found that a number of African countries used drug fee revenues to obtain tangible improvements in health services.

Still, the evidence that some locales are mobilizing substantial resources does not make up for the administrative costs of collecting the fees, including the time (opportunity) costs of administering fee exemption policies. There is little if any credible data on this important issue. Most assessments take place in the context of schemes that have been funded through external assistance, which biases downward estimates of real-world administrative costs (Creese and Kutzin 1995).

The extent to which raising fees mobilizes private resources depends on the extent to which individuals are willing to pay the higher price for services. Patients are not willing to pay any amount for curative care. As fees rise, utilization will fall. The question is, by how much? The less sensitive demand is to price increases—that is, the

more price inelastic¹—the more revenue is mobilized through price increases. This is because a price increase has two effects on revenues. It increases revenues by raising the revenue per patient visit, but it lowers revenues by reducing the number of visits. If the reduction in visits is great enough, price increases actually reduce revenues. Similarly, the less sensitive is demand, the less prices will change service use.

The story is somewhat more complicated with respect to increasing user fees to finance quality improvements. In this case there are two effects on utilization—the negative effects of the price increase and the positive effect of the quality increase. Both need to be measured to assess the amount of resources that can be mobilized. The less price elastic and the more quality elastic is the demand, the greater are the resources that can be mobilized from a fee increase used to finance quality improvements.

Allocating public subsidies

In addition to mobilizing private resources, fees determine the allocation of public subsidies. This point is extremely important because it is through the allocation of public subsidies that government is able to pursue its objectives and correct market failures. Increases in fees free up subsidies that can be reallocated to other programs. The more subsidies a given fee increase frees up, the greater is the government's budgetary flexibility in allocating subsidies. Interestingly, the condition that increases budgetary flexibility is exactly the opposite of the condition that mobilizes more private resources—namely, the more price elastic is demand, the greater is the amount of subsidies that are freed up.

To see this, we rewrite the budget constraint as follows:

$$A + \sum_I (c_{iI} - f_{iI})U_{iI} + \sum_I (c_{iO} - f_{iI})U_{iO} + CDC = G,$$

where $(c_{iI} - f_{iI})$ is the public subsidy rate per unit of a service. Then the amount of public subsidies spent on a public program is the subsidy rate times the amount of services provided. In this formulation of the budget constraint, administrative costs plus the sum of subsidies to each of the services and public health program costs cannot exceed total subsidies allocated from the general government budget.

There are a number of ways the government might want to reallocate its public subsidies. Consider an increase in public spending on public health activities such as vector control or sanitation—that is, CDC spending. To increase CDC expenditures, the government must reduce subsidies to other programs; otherwise it would spend more than its available resources and violate the budget constraint. To do so, it raises the fee for those services—thereby lowering the subsidy for beneficiaries of the program and inducing some to stop using the service.

The amount of subsidies that can be reallocated depends on the amount freed up by the price increase, which depends on how sensitive utilization is to price. The more price elastic is demand, the greater is the drop in utilization for a given price increase. Thus the greater is the amount of subsidies that can be reallocated through reductions in both unit subsidies and volume provided. In essence, the more price elastic is demand, the more easily the government can reallocate subsidies—that is, the greater is its budgetary flexibility. However, the more price elastic is demand, the fewer the amount of private resources that can be mobilized.

Another reallocation priority may be to shift subsidies from a lower-priority patient care program to a higher-priority program. To increase public subsidies to a care program, the government lowers the fee charged, thereby increasing the subsidy rate. The amount of public subsidies going to that program increases for two reasons. First, users of the program receive a higher subsidy. Second, the lower fee attracts new users who otherwise would not have received the subsidy. This discussion implies that reallocating public subsidies across care programs is a careful balance of raising and lowering user fees.

Revenue retention

An important assumption in this discussion is that any revenues raised from private sources are kept in the health sector. If the fee revenue must be returned to the general treasury, then the fee increase effectively does not increase resources for health care; the same outcome holds when local health units are forced to return revenues to central ministries of health. It is as if the government lowered public subsidies by one dollar for every dollar raised privately. This approach implies that no resources are mobilized and

provides no incentive for health care providers to collect fees, resulting in substantially less revenue being collected than could be raised—an important administrative issue in implementing a successful user fee strategy.

In most cases the claim on fee revenues collected at the local level is likely to come from higher levels of government. In the worst case fee revenues leave the health sector and are returned to central or local treasuries, and health sector resources do not expand. This is the case in African countries such as Eritrea, Ethiopia, Namibia, and Zimbabwe (Creese and Kutzin 1995).

A more subtle outcome that is harder to document occurs when fee revenues merely displace public subsidies by one dollar for every dollar of revenue raised. Indeed, ministries of health in Cambodia, Chile, China, Iran, Jordan, Nepal, and Thailand have cut budgets as fee revenues have increased (Leighton 1996). In contrast, health care providers in the Central African Republic and Kenya refused to restructure fees until they had received explicit assurances from their ministries of finance that public subsidies would not be reduced.

In both the direct and the subtle cases, fee revenues do not augment the abilities of policymakers and facility managers to expand and improve programs. Rather, user fees simply become a way to cut public subsidies to the health sector.

Even when fee revenues remain in the health sector, many governments do not allow local facilities and programs to control the funds. In many countries this is because local facility and program managers have no authority on how to spend resources. For example, staffing and infrastructure decisions are usually handled at higher levels. At best local managers can alter the mix of drugs and supplies; few are allowed to shift resources between budgetary items. The reasons for this lack of local control include lack of budgetary skills and concern about potential graft. However, as the current decentralization trend gathers steam, such rationales may diminish.

Indeed, one reason to speed decentralization is that it increases the efficiency with which fees are collected. The fact that a government mandates that fees will be charged does not mean that facilities and programs will collect the fees and remit them to the government. Indeed, if revenues are simply passed on to higher authorities, local facil-

ities and programs have little or no incentive to collect them. All that remains is the threat of audit and punishment, which is costly and rarely credible. But if local facilities and programs are able to keep and use at least some revenues, they have an incentive to collect them.

Despite this argument, there has been little systematic evaluation of the hypothesis that fee retention increases the efficiency of collection. A few case studies, such as Chisvo and Munro (1994) in Zimbabwe, claim that the lack of local retention of fees explains why only a small percentage of public health expenditures are financed through fee revenues. In a study of Africa, Nolan and Turbat (1995) compare percentages of public expenditures financed through fee revenues and find no correlation with fee retention authority. But the comparisons are not clear, and many other factors (including different fee policies) could confound the observed cross-national relationship.

There is, however, evidence on the expenditure side that local control is important. Parker and Kippenberg (1991) examined fourteen countries' experiences under the Bamako Initiative and found that stronger local management of resources increased the availability of essential medical care inputs and improved service utilization. Mwabu, Mwanzia, and Liambila (1995) found that while most revenues from a 1989 fee increase were locally retained, Kenya's central treasury retained authority over spending. As a result 40 percent of Kenyan facilities reported that they did not spend the revenues.

What Effect Do Prices Have on the Budget and on Individual Welfare?

This section examines the extent to which public health care systems are able to mobilize private resources and maintain budgetary flexibility to reallocate public subsidies, and the consequences of these policies on health outcomes and access to medical care. The first two issues are essentially a question of the extent to which raising a fee lowers utilization. The first subsection reviews empirical evidence on how price increases affect the utilization of the institution that raises the price—that is, own price elasticities of demand.

Whether inelastic demand is good or bad depends on government objectives. When subsidies are reallocated from one program to another, the more a given fee increase reduces

utilization, the greater is the amount of subsidies that can be reallocated. When fees are increased to finance a program, the more price inelastic is demand, the greater is the amount of resources that can be mobilized. When fees are increased to finance improvements in quality, the less the fee increase reduces utilization and the more the quality improvement raises utilization, the greater is the amount of resources mobilized. In this case the question is essentially how much people are willing to pay for quality improvements, which is examined in the second subsection.

The discussions in the next two subsections should be interpreted only in terms of implications for the budget and in terms of welfare. A decrease in utilization of public facilities does not necessarily mean that health outcomes or access to all medical care was reduced. For example, if a price increase induces individuals to substitute private care for public care, access is not reduced. In addition, individuals who decide not to seek care because of a price increase may have only minor illnesses that do not require treatment or that can be treated at home. Own price effects tell us nothing about access and health outcomes, only about resource mobilization and budgetary flexibility in allocating public subsidies. The effects of price increases on access and health outcomes are analyzed in the third subsection.

None of the discussion in this section is devoted to what governments should do. This discussion provides information about the budgetary constraints on government actions and implications of actions on outcomes. To take the discussion a step further, we must understand the objectives of government policy—the subject of the next section of the paper.

Price elasticity of demand for medical care

Many studies have used cross-sectional household surveys to estimate the price elasticity of demand for outpatient services (table 1). Although a few early studies using questionable data found completely inelastic demand—that is, prices had no effect on utilization—most studies have found that higher prices are associated with lower utilization, but that overall own price elasticities are low and well below unity. This finding suggests that increases in fees will mobilize substantial private revenues, but that flexibility in reallocating subsidies is limited.

Another important result of a number of these studies is that price sensitivity differs by economic and demographic group. The poor appear to be more price sensitive than the rich, and children's utilization seems to be price sensitive than adults'. Thus increasing fees may reduce the utilization of the poor and children by more than the utilization of the rich and adults.

Policymakers should view these results with caution, however, since the studies suffer from several methodological problems. First, the countries studied typically had public institutions that charged very low fees, with little geographical variation in those fees. In some studies the investigators used travel costs to measure price elasticities, since time costs ration the market when fees are low. These studies used the estimated models of demand to conduct policy simulations that forecast how increases in fees were likely to affect utilization and revenues. However, the forecasts were based on price changes that were far outside the observed range of the price data. Thus they are highly unreliable. In particular, while an individual's utilization decisions may be insensitive to prices when prices are low, they might be very sensitive to prices when prices are high.

Several studies have evaluated actual price increases by comparing utilization before and after a fee increase at public facilities. In the Ashanti-Akim region of Ghana, Waddington and Enyimayew (1990) found that after an increase in user fees, long-term utilization fell at clinics serving the poor but did not fall at clinics serving the nonpoor. Mwabu, Mwanzia, and Liambila (1995) found a 52 percent drop in outpatient visits to government health centers after Kenya introduced fees in 1989. After the fees were suspended in 1990, visits increased by 41 percent—almost to the original level. Yoder (1989) reports a 32 percent drop in visits to government health care facilities after Swaziland increased fees. Kahenya and Lake (1994) found that attendance at eleven clinics in Zambia fell by an average of 64 percent after fees were raised, with larger reductions occurring at facilities in poorer areas. Finally, Bennett (1989) found that the utilization of government facilities dropped by 40 to 51 percent after fees were increased in Lesotho, and that the drops were greatest among children.

As noted, however, these studies should be viewed with extreme caution. Although the results are consistent with econometric findings that demand is sensitive to price,

TABLE I

Econometric estimates of own price elasticities of the demand for medical care in developing countries

Country	Data period/type	Service type	Own price elasticity			Source	
			Overall	Low income	High income		
Burkina Faso	1985	Public provider				Sauerborn, Nougara, and Latimer 1994	
	All ages		-0.79	-1.44	-0.12		
	Age 0-1		-3.64				
	Age 1-14		-1.73				
	Age 15+		-0.27				
Côte d'Ivoire	1985	Health clinic		-0.61	-0.38	Gertler and van der Gaag (1990)	
		Hospital outpatient		-0.47	-0.29		
Côte d'Ivoire	1985-87	Health clinic	-0.37			Dow (1996)	
		Hospital outpatient	-0.15				
Ghana	1987	Hospital inpatient	-1.82			Lavy and Quigley (1993)	
		Hospital outpatient	-0.25				
		Dispensary	-0.34				
		Pharmacy	-0.20				
		Health clinic	-0.22				
Kenya	1980-81	Government provider	-0.10			Mwabu, Ainsworth, and Nyamete (1993)	
		Mission provider	-1.57				
		Private provider	-1.94				
Indonesia	1991-93	Children	Health center	-1.07		Gertler and Molyneaux (1997)	
			Health subcenter	-0.35			
		Adults	Health center	-1.04			
			Health subcenter	-0.47			
		Elderly	Health center	-0.47			
			Health subcenter	-0.11			
Mali	1982		-0.98		Birdsall and others (1983)		
Pakistan	1986	Female	Traditional healer	-0.43	-0.24	Alderman and Gertler (1997)	
			Public clinic	-0.43	-0.23		
			Pharmacist	-0.44	-0.25		
			Private doctor	-0.17	-0.09		
		Male	Traditional healer	-0.60	-0.26		
			Public clinic	-0.61	-0.27		
			Pharmacist	-0.63	-0.27		
			Private doctor	-0.25	-0.10		
Peru	1985	Private doctor		-0.44	-0.12	Gertler and van der Gaag (1990)	
		Hospital outpatient		-0.67	-0.33		
		Health clinic		-0.76	-0.30		
Philippines	1981	Public providers		-2.26	-1.28	Ching (1995)	
		Private providers		-3.93	-2.23		
Philippines	1981	Prenatal care	-0.01			Akin and Griffin (1986)	
Philippines	1983-84	Urban maternity	-0.24			Schwartz and others (1988)	
		Rural maternity	-0.05				

they report only the fall in utilization, and say little about the degree of price elasticity. Large drops in utilization could be associated with big price increases, and demand could still be relatively price insensitive. Moreover, because these studies lacked control groups for which fees did not change, there is no way of knowing how much of the fall in utilization was due to the price increase and how much was due to factors such as changes in quality in the disease environment.

Most of the results discussed so far analyze data that reflect the rules that governments use to set prices and locate facilities (Rosenzweig and Wolpin 1986; Pitt, Rosenzweig, and Gibbons 1993; Gertler and Molyneaux 1993; Frankenberg 1995). Since government policy is trying to achieve some objective, the variation in fees is unlikely to be random. Rather, it reflects government policy. In many cases governments set fees and locate facilities based on population characteristics such as economic status and health problems. If the multivariate analysis does not explicitly account for government policies for setting fees and determining the locations of facilities, the estimates of the effects of the fee on utilization will be confounded with the effects of utilization on government policy.² In addition, most of these studies have only rudimentary controls for quality of care. Although they usually distinguish between levels (hospital, health center, and so on) and sector (public or private) of care, they do not control for quality variations (such as drug availability and provider training) within provider types.

Three studies that are not subject to these criticisms analyze the effect experimentally designed fee increases have on individual utilization in experimental and control areas. The first, Gertler and Molyneaux (1997), estimated price elasticities of demand for outpatient services in Indonesia using longitudinal panel data in which public sector user fees were varied experimentally in two of Indonesia's twenty-seven provinces. The study design was integrated with local political decisionmaking authority, which was already planning to increase user fees. Rather than raising fees everywhere, fee changes were staggered to generate price variation based on an explicit experimental design. User fees were increased in some districts (treatment areas) but not in others (controls) and in both government health centers and health subcenters.

The estimated Indonesian price elasticities of demand are shown in table 1. Although a price increase significantly lowers utilization, the effect on children is greater than on adults, and the effect on adults is greater than on the elderly. Demand for health center care is more price elastic than for health subcenters. This finding is not surprising, since the health subcenters serve rural populations that have fewer alternative (public or private) providers than in urban areas, where health centers tend to be located. In fact, the price elasticity of the demand for health center care is close to unity, whereas it is well below 1 for subcenters—suggesting that little revenue will be mobilized by raising health center fees, but that a lot will be mobilized by raising subcenter fees.

Similarly, Cretin and others (1992 and 1996) report results from a rural health insurance study in two rural Chinese counties in which copayments, another form of user fee, were experimentally varied to estimate price elasticities of demand. During 1989 and 1990 twenty-six villages in two rural counties of Sichuan province, China, participated in an experimental longitudinal study to provide an analytic basis for developing sound health care financing mechanisms. The experiment assigned each village two health insurance plans, one for 1989 and one for 1990. Eight different plans were assigned, with outpatient and inpatient coinsurance rates ranging from 30 to 75 percent. Three of the plans emphasized the coverage of outpatient care, three emphasized the coverage of inpatient care, and two offered balanced coverage of outpatient and inpatient care. Although participation in the insurance plans was voluntary, each household had to enroll as a unit, and participation rates were more than 95 percent.

As expected, higher coinsurance rates for outpatient services (used by about two-thirds of the population each year) were associated with significantly lower probability of use and significantly lower expenditures. For inpatient services (used by just 3 percent of the population each year) higher coinsurance also led to less utilization and less expenditures, although the decrease was not as strong. These results suggest that demand for outpatient services is more price elastic than demand for inpatient services. Since more serious illnesses are treated by inpatient hospitalization, these results are consistent with the hypothesis that demand for medical care is less price sensitive for more serious illnesses. This

finding is somewhat reassuring because it suggests that reductions in utilization resulting from price increases are likely to be lower for less serious illnesses.

Manning and others (1987) and Newhouse (1995) report the results of a large health insurance experiment in the United States conducted in the late 1970s. More than 20,000 individuals in six sites were randomly assigned to one of fourteen health insurance plans that had different copayment structures. This experiment differed from the Indonesian and Chinese experiments in that its design was based on controlled random assignment of a large number of individuals. Although the Asian experiments were controlled, individuals were not randomly assigned. Rather, the intervention was at the community level. Randomization at the individual level provides a better and more robust design.

The U.S. experiment was one of the first scientifically valid studies that convincingly documented that individuals' medical care utilization decisions were influenced by prices. The results indicated that prices had a bigger influence on decisions to initiate treatment than on the amount obtained once treatment began. Overall, the experiment found price elasticities of about -0.2 , and the price elasticity increased with the coinsurance rate. Moreover, demand for acute care and inpatient services was less sensitive to price than chronic care and outpatient care. This is consistent with the Chinese results, and with the hypothesis that demand for the treatment of more severe illnesses is less sensitive to price.

Willingness to pay for better quality and access

There is evidence that people are willing to pay at least a share of the cost of improving access and quality, especially for drugs. (See Alderman and Lavy 1996 for a review of the literature.) For example, studies of cross-sectional household data have found that individuals are willing to pay at least some of the cost of improving access to medical care, as measured by the distance that they have to travel to reach the closest public facility (Gertler and van der Gaag 1990; Lavy and Germain 1995). In addition, four studies analyzing cross-sectional data have found that a number of structural quality indicators, especially drug availability, significantly affected demand in Ghana (Lavy and Germain

1995), Nigeria (Akin, Guilky, and Denton 1995), Kenya (Mwabu, Ainsworth, and Nyamete 1993), and the Philippines (Hotchkiss 1993).

The estimated quality effects are quite large. For example, if the percentage of Ghanaian public facilities with drugs increased from 66 percent to 100, utilization of public facilities would increase by nearly 44 percent (Lavy and Germain 1995). Simultaneous improvements in drugs, infrastructure, and services would increase the use of public facilities by 127 percent. Much of the increase in utilization, however, comes from substituting public for private care. The same quality improvements that increase public utilization by 127 percent would only reduce self-care by 14 percent. Thus the net effect on utilization is quite small. However, users of public services would have higher-quality care than before. Since quality improvements mainly affect the choice among providers rather than whether to obtain treatment, the net effect on health outcomes is determined solely by the increase in quality to current public sector patients, not by increased access.

These studies use estimated parameters from demand models to calculate the willingness to pay for quality and access improvements. Methodologically, this is equivalent to asking how much a fee would have to increase to offset the increase in utilization from the improvement in quality or access.³ Gertler and van der Gaag (1990) found that the geographic distribution of individuals in Peru and Côte d'Ivoire makes them willing to pay (on average) about 20 percent of the cost of operating a health facility if it cuts travel time to public health centers from two hours to zero. The poor, however, were willing to pay substantially less than the rich. In Ghana individuals were willing to pay, on average, half the cost of improved access, with the poor again willing to pay substantially less (Lavy and Germain 1994). Thus if the government asked consumers to pay the "average willingness to pay" for improved access, the nonpoor's utilization would increase while the poor's utilization would decrease.

Although these studies demonstrate a significant statistical correlation between quality and utilization, they raise several questions about the direction of causality. First, the studies used cross-sectional household data to investigate the effects of price, travel time, and quality on utilization and then used the estimated models to simulate the effects of price and quality changes on utilization. Thus they suf-

fer from the same problem as the cross-sectional demand studies discussed earlier: the results confuse the effects of prices and quality on utilization with the effects of utilization on government geographical pricing and quality policy.

Many longitudinal studies do not suffer from this methodological problem. For example, Litvack and Bodart (1993) carried out a field experiment in the Adamaoua province of Cameroon that investigated people's willingness to pay for drugs. In one treatment area facilities charged user fees to finance a revolving drug fund, which increased drug availability. As a result utilization increased in the treatment area relative to utilization in a control area. Thus it appears that consumers in the treatment area were willing to pay for drugs; hence their utilization increased. Using a similar methodology, Yazbeck and Leighton (1995) investigated the effect of introducing fees to finance better-quality prenatal care in Niger. They found that prenatal care enrollments in the treatment area increased relative to the control area, and that the increase was greatest among the poor. However, in an analysis without a control group, Haddad and Fournier (1995) found that user fees led to a drop in utilization in Zaire—despite the fact that the supply of drugs and the physical condition of the facility were increased at the same time.

Measuring quality is a problem in all these studies. Most of the studies used structural measures of quality, such as availability of drugs, personnel, physical infrastructure, and equipment. But it is not what people have that matters, it is what they do with it. Indeed, several studies have shown that process measures of quality are better predictors of health outcomes than structural measures (Peabody, Gertler, and Liebowitz 1995). Moreover, the most important measure, availability of drugs, confounds supply and demand effects. Facilities may have drug shortages because they provide high-quality services, and have high utilization that depletes the drug stocks.

Effect of fees on access and health outcomes

The preceding subsection focused on the budgetary implications of different user fee policies in terms of measuring the extent to which raising fees increases government's ability to mobilize resources and allows flexibility in allocating subsidies. Although knowing the own price elasticity of demand for public facilities is essential for forecasting expected revenues, it is insufficient for evaluating the effect higher user fees have on individual welfare. As a step toward this goal, this subsection reviews the empirical evidence on the effect of prices and quality on health outcomes and access to medical care.

The first question regards the effect of price increases on overall access—that is, did the individuals who chose to stop seeking treatment at public facilities switch to self-treatment or private sector treatment? To measure the effect price increases have on access, we examine the effect they have on the utilization of all providers, public and private.

In their research in Indonesia, Gertler and Molyneaux (1997) examined the effect public health center fees have on total visits, including visits to all public and private providers (table 2). They found that price elasticities of total demand were less than the elasticities of health center demand, implying that higher fees caused some individuals to switch to other providers rather than treat themselves. Similarly, Bennett (1989) reports that after fees increased in Lesotho, about half the reduction in public sector utilization was a reallocation to private facilities.

Returning to Indonesia, in urban areas (where there are more private alternatives) the total visit elasticity is about half the health center elasticity. This finding implies that about half of the reduction in utilization switched to other providers and about half to self-treatment. In rural areas the total elasticity is about two-thirds the health center

TABLE 2

Own and total price elasticities in Indonesia

(percentage change with a 1 percent increase in public health center fees)

	Children		Adults		Seniors	
	Urban	Rural	Urban	Rural	Urban	Rural
Visits to health centers	-1.07	-0.63	-1.04	-0.01	-0.45	-0.47
Visits to all providers	-0.48	-0.49	-0.70	0.0	-0.22	-0.39

Source: Gertler and Molyneaux 1997.

elasticity, implying that a much larger percentage of patients switched to self-treatment than in urban areas. These results suggest that public sector fee increases reduce access more in rural areas, where there are fewer private alternatives.

Simulating the effect of fee increases in public facilities on total utilization also requires information on how competing private providers respond to the increased prices at government facilities. When government providers raise their prices, some patients may shift to the private sector, which may lead private providers to respond to the increased demand by raising their prices. The extent of the price response depends on the extent of the increase in demand and the slope of the private provider supply curve. The larger is the private sector price response, the fewer is the number of people who will switch to the private sector, implying that more individuals will choose self-treatment or remain in the public sector.

Private sector price responses are likely to be very important. When public user fees were increased experimentally in Indonesia, Gertler and Molyneaux (1997) found that while the fee increases caused some individuals to substitute self-treatment for care at public facilities, others turned to the private sector instead. The resulting increase in demand caused private doctors and private nurses and paramedics to increase their fees in response to the increased demand (table 3). In general, private sector responses were greater in semiurban and rural areas, where there is more direct competition between public and private providers. Similarly, private nurses and paramedics, who are closer substitutes for public primary care facilities, had larger relative price responses than private doctors. The price elasticity estimates shown in table 2 reflect both the increases in public sector fees and the consequent increases in private sector fees.

Reductions in total utilization that are caused by fee increases can have negative health effects. In the Indonesia user fee experiment, Gertler and Molyneaux (1997) found that the observed reductions in utilization were not only for minor illnesses, but also for medical problems that measurably affect health status indicators. The fee increase caused an increase in the duration of illness for all age groups and in illness symptoms associated with infectious diseases. These results indicate that an important channel through which prices hurt health is by delaying treatment to the point of reducing the efficacy of medical intervention. In an extreme case this may cause people to delay seeking help for emergency care. In addition, the fee increases impaired older (50 years and above) Indonesians' ability to function physically. The increase in fees had a large enough negative effect on health that it reduced labor force participation among women (Dow and others 1997).

In addition, empirical evidence suggests that increases in access and quality improve health outcomes. In a cross-sectional analysis of household data, Benefo and Schultz (1994) found that child mortality was lower among families that lived closer to government health facilities in Côte d'Ivoire and in Ghana. They also found that a doubling of drug prices was associated with a 50 percent increase in child mortality. Thomas, Lavy, and Strauss (forthcoming) found in an analysis of cross-sectional data from Ghana that improving drug supplies significantly improves the nutritional status of children. In an analysis of cross-sectional data from Jamaica, Peabody, Gertler, and Liebowitz (1996) found that the birth weight of babies was 500 grams higher in communities that offered good prenatal care services using process measures of quality.

TABLE 3

Private providers' price responses to 100 percent public sector fee increases in Indonesia

(percentage change)

	Urban area health centers	Semiurban health centers and subcenters	Rural health subcenters
<i>Private doctors</i>			
Health center fees	4.4	18.4	—
Health subcenter fees	—	3.5	20.1
<i>Private nurses and paramedics</i>			
Health center fees	23.8	9.5	—
Health subcenter fees	—	16.7	57.9

Source: Gertler and Molyneaux 1997.

As with the cross-sectional studies of demand, however, it is hard to say how much the associations between health outcomes and quality of care reflect the impact of quality and access on health outcomes or the effect of outcomes on government policy toward the geographical allocation of facilities and quality. Frankenberg (1995), in one of the few explicit attempts to determine the direction of causality, used longitudinal data from Indonesia to show that infant mortality was lower in families located near public health centers.

These results suggest that there are real returns to public programs and public subsidies in terms of health outcomes. Raising fees—thereby lowering subsidies—can have negative health consequences. Thus if governments choose to raise fees, unless the freed subsidies are reallocated to more effective programs, health outcomes may deteriorate. Evidence suggests that investing the subsidies in better access and quality can improve health outcomes.

How Should Governments Set Fees?

While the above analysis suggests that governments may be able to mobilize private resources to cofinance public programs, it does not say how governments should choose the optimal combination of user fees and allocation of public subsidies across programs. Optimal policy needs to be based on what is best for furthering social objectives, subject to the limits imposed by medical, behavioral, and economic constraints. Three groups of objectives are often cited: improving health status, improving equity in access to medical care, and improving individuals' insurance against the risk of large financial losses due to ill health (Hammer and Berman 1996). In many cases the policy prescriptions that best achieve each of these objectives are in conflict. Thus, because resources are limited, governments must make tradeoffs in financing programs and base those decisions on the relative value it places on each objective.

Regardless of the objectives a government is pursuing through its involvement in the health sector, most countries have limited public resources to invest in health. In allocating their limited budgets government officials and program managers must use the resources wisely and get as close as possible to their goals within a fixed budget. In previous sections we considered the possibility of charging user fees

to supplement the public subsidies allocated from general tax revenues to finance public programs. Here we consider the task of setting user charges and allocating the total budget (public subsidies plus user fee revenues) while maximizing government objectives. This section considers optimal policy when health outcomes are the main objective of public policy and discusses how the policy should be adjusted when equity and insurance considerations are added.

What do prices do?

One of the main messages of this paper is that the level of fee charged determines the degree to which a particular program (or group) is subsidized. Much of the discussion about user fees is couched in terms of whether government should raise fees closer to the cost of providing the service. To help guide optimal fee policy, we turn this question around and ask when government should subsidize services in order to lower prices below the cost of providing the service.

For most commodities, there is a certain "rightness" about the level of use (demand) when consumers face a price reflecting the true resource cost of producing it. People ask themselves whether it is worth buying the commodity given all the other things they can do with their money. If the answer is yes, then they get more value out of the commodity than it costs society to produce it. If not, then they decide to spend their money on something else that they think is more worthwhile for the price. Individuals do not purchase good or services whose prices exceed the value they place on it. Similarly, if someone is in a position to provide a good or service, they will do so only if the price exceeds the cost of their making it. So prices tell both producers and consumers how much something really costs to produce and how much people really value it.

There are several ways prices can help guide resources efficiently in the health sector. First, people often bypass lower-level clinics to go to hospitals even when the clinic could have handled their problem. They do so because they will get better care at the hospital, and if both are free or have the same price, they have no incentive not to use the hospital. If prices reflected service costs, hospital prices would be higher than clinic prices, and only those who valued the hospital service more than its unit cost would bypass the clinic.

A second example is when prices limit the use of services by people who do not think their health problem is serious enough to be worth the trouble and cost of seeking help. Seeking help takes up real resources in terms of the time of trained professionals as well as increased congestion and waiting time for others. If prices are less than the cost of providing treatment, then treating minor problems whose value is less than the cost is inefficient. The main point is that prices make people's choices efficient—putting resources where they are most valuable to them.

What is wrong with this picture? For any of several market failure reasons (see below), the amount demanded or the value placed on goods may not be “right.” The value to society for seeking care or providing a service may be higher than that privately judged by the individual. If that is the case, society benefits if more people use the service than would based on individuals' private benefits. Thus public subsidies to lower the price are justified. How much of a subsidy depends on the degree to which the social value exceeds the private value. The benefits that can be obtained from subsidies also depend on how responsive to prices consumers are. The more price elastic is demand, the greater is the social benefit from a given subsidy.

As with government intervention in any sector, the allocation of government subsidies needs to be justified in terms of the benefit the investment has for society above and beyond what would have happened without public intervention. The way to assess the benefit of a proposed public intervention is to identify the failures of private markets and quantify the loss from these failures. Priorities should be based on the degree to which the subsidy ameliorates these losses and the importance government places on those losses and the individuals who incur them. Important market failures in the health sector that justify public subsidy include public goods, inequity in access to medical care, and insurance market failure due to asymmetric information.

Improving health status

Most countries' ministries of health try to improve health by funding public health activities and delivering health care services in public health centers and hospitals. This is why policymakers become concerned when fee increases lead to big reductions in utilization.

One of the main ways in which ministries of health can improve health status is to encourage or discourage utilization by the way they set the price of health care services. Ministries may want to stratify their price subsidies to encourage utilization of specific services (immunizations, prenatal care) and by specific groups (the poor). But not all increases in utilization are from new utilization. Some may be substituting for private sector services (or other, less public services) that have been substituted for by the subsidized public services. The degree to which the increased utilization improves health depends on the efficacy of the additional health care consumed. To determine the amount of additional care consumed, we have to subtract any reduction in private sector services that the individual would have purchased had there been no subsidy.

However, ministries of health do not have unlimited public resources that they can spend on their various activities. Ministries have fixed budgets that they can relax only by charging fees for their services. Although price increases may generate substantial revenue, they also deter people from seeking care who might have sought the treatment when it was priced lower.

To translate this discussion into a set of policy rules, we need to establish the link between policy levers and policy objectives. Thus, since a ministry of health's main objective is in terms of health and its policy levers are in terms of prices that determine the level of private resources and the allocation of public subsidies, we need to establish links between health and prices. By altering prices, governments affect the utilization of medical care and the amount of money spent on public health activities. Utilization of medical care and public health programs influences health outcomes.

With improved health as the objective and the links between policy and objectives established, we can identify four pricing principles that need to be balanced for the government to get the best health outcomes for its subsidies (see Hammer forthcoming for formal derivation and details of the pricing rules).

- *Subsidies should be higher for services for which public care is better than private*—that is, for services that yield the best health outcomes compared with people's alternatives. If the alternative to public care is a traditional healer of dubious quality, fees should be raised with great cau-

tion. If the alternative is a reasonable private sector (in Indonesia the private sector consists of public providers working during the afternoon), raising fees may make more sense. If health is the objective, it is better to encourage people to use the most productive services at subsidized prices.

- *Subsidies should be higher for services for which total (public and private) demand is most elastic with respect to fees in public facilities.* Governments cannot mandate the use of health care. They can only provide incentives for use. Subsidies encourage use of a service by lowering the price. The more price elastic is demand, the larger is the increase in utilization from a given price subsidy. However, demand may be more price elastic for less efficacious services. Thus subsidies should be higher for services that produce the best health outcomes. These services are most successful in producing the most health because of the combination of efficacy and of the volume of patients generated by the introduction of the subsidy.
- *Subsidies should be higher for people whose demand is more price elastic.* For similar reasons as in the previous point, subsidies produce better health outcomes for groups for whom the subsidy is likely to encourage use. This finding implies that subsidies should be higher for poor individuals whose demand is more price elastic. An interesting implication of this pricing principle is that it is optimal to lower prices for the poor even if the government is concerned with neither equity nor welfare but with health status per se.
- *Subsidies should be higher for services and in areas where there are few private sector alternatives (competition).* Subsidies will produce substantially weaker health outcomes if they only cause individuals to substitute out of the private sector into the public sector. The best health outcomes are achieved when subsidies encourage new utilization, so that illnesses that would not otherwise have been treated are treated. Thus certain preventive services and health care services in rural areas should be more heavily subsidized because there are fewer private sector alternatives.

The first three principles argue that setting prices for services or for particular groups must balance two competing goals: limiting the adverse health effect from a reduction in utilization and mobilizing resources that can be used to

subsidize other activities or groups and provide more services. Services or groups for which prices discourage large numbers of (price elastic) individuals from getting treatment should have lower prices. Conversely, when demand is more price inelastic, higher prices affect health status less and mobilize more revenue that can be used to cross-subsidize other beneficial activities. The basic idea in setting prices is to push public subsidies as far as they can go in achieving health gains. Thus price subsidies should be assessed in terms of their effect on health outcomes and their impact on the budget, rather than relative to the resource costs of service delivery.

The first and fourth principle point out that interaction between the public and private sectors is crucial in setting prices. If the private sector offers comparable quality services and individuals are willing to pay the private sector price, government subsidies will not improve health. All they will do is cause individuals to substitute public for private care. In this case the ministry of health should not provide the care, or it should at least price the services so that few subsidies are absorbed. This is clearly the case for luxury rooms in hospitals because the rich are the only group that uses such rooms, and these services are usually available in the private sector.

When the public sector lowers its prices because of subsidies and draws patients away from the private sector, it is in essence competing with the private sector. Subsidies to public providers lower the profitability of private providers. Public subsidies affect the prices that the private sector can charge and raise speculation on whether it is profitable for private providers to locate in the same area as the public provider. The fact that there are no private providers in an area does not necessarily indicate that private providers would not serve the area if there were no public services available—it merely indicates that the private sector does not find the area profitable. As the public sector raises its prices, however, the competitive constraints on the private sector are eased. As a result the private sector may raise its prices, and new private providers may enter the market. These supply responses will affect the demand for public and private services and, therefore, affect health outcomes and resource mobilization. Thus these supply responses should be factored into the setting of public sector prices.

One clear message is that the government should subsidize services that the private sector is unlikely to provide. Public goods are the most obvious candidates for public subsidies. A pure public good is one for which a private market cannot exist because beneficiaries cannot be made to pay for benefits (nonexcludable) and one person's benefits are not reduced when others benefit as well (nonrivalrous). Health sector examples include some forms of vector control (for example, draining swamps), some forms of sanitation (especially in urban areas), and provision of health information and education for activities such as washing hands, which have no product associated with them that advertising would promote. Research, epidemiological surveillance, and food and drug safety are other examples. A health service has a positive externality if its use generates benefits to society above and beyond the benefit to the private individual. The most common externality in the health sector comes from prevention and treatment of infectious diseases. In the Gambia, for example, pesticide-treated bed-nets reduced the incidence of malaria even among people who had not used them, suggesting that the societal benefit from bed-nets was greater than the private benefits (Tropical Disease Research Program 1995).

Left to their own devices, individuals will prevent and treat infectious diseases less than is socially optimal. Many individuals are unwilling to pay the full cost of immunization because they know that they will be protected if enough other people are immunized.⁴ Even when immunization offers important medical benefits, the cost may impede individuals from seeking treatment soon enough to prevent the spread to other individuals or from completing the full course of treatment. When drug therapies are not completed, it may lead to a resurgence of the disease, to an increase in transmission, and to resistance to known drug therapies. For example, tuberculosis is a virulent, communicable disease, and although the drug therapy is available and effective, it is expensive. Individuals feel better after partial treatment and tend to want to stop treatment long before the course of drugs is completed. They remain a public hazard because they can still transmit the disease. To get individuals to obtain proper prevention and treatment, the government needs to use public subsidies to lower the price of these services to encourage utilization. In some cases the government must fully subsidize the activities.

Some countries fully subsidize the prevention and treatment of communicable diseases. For example, Creese and Kutzin (1995) report that Ethiopia, Ghana, Jamaica, Mali, Niger, Papua New Guinea, and Zimbabwe do not charge for the treatment of tuberculosis. Moreover, all these countries except Papua New Guinea do not charge for the treatment of sexually transmitted diseases. There is evidence that subsidizing the use of public goods programs leads to improvements in utilization. In China and Zambia child immunization rates fell dramatically after user fees were introduced (Booth and others 1995; Sheng-Lan and others 1994).

Taiwan (China) provides an example of a dramatic improvement in health indicators through public investments at low income levels. In the 1950s Taiwan (China) was extremely poor, with a per capita income of less than \$150 in today's terms. Associated with this low living standard were widespread incidences of infectious and parasitic diseases. In 1952 the main causes of death were gastritis, duodenitis, enteritis, colitis, pneumonia, and tuberculosis. About 1.2 million people (in a population of 7.8 million) were infected with malaria. In 1962, 383 cases of cholera were reported. About 90 of the population was infected with hepatitis B by age 40, and 15 to 20 percent were hepatitis B carriers. The infant mortality rate was 45 per 1,000 live births; the maternal mortality rate was 197 per 100,000 live births.

The government responded to these problems with extensive improvements in water supply and sanitation, disease control programs, and immunization campaigns. Free vaccinations against the main infectious diseases were made available to infants and preschool children. To expand immunization, health education, and treatment, the government also set up primary care facilities throughout the country.

These efforts, combined with better living conditions, were able to control infectious diseases by the mid-1960s. No cases of smallpox or rabies have been reported since 1959. In 1965 Taiwan (China) was declared free of malaria by the World Health Organization. By 1970 Taiwan (China) had health indicators similar to those in most industrial countries today. Life expectancy increased from 55 years in 1951 to 69 years in 1970. Neonatal mortality fell by more than half between 1955 and 1970. Infant mortality dropped by about two-thirds over the same period, and maternal mortality had similar improvements.

The most striking feature of Taiwan's (China) achievements is that they were realized despite very low income levels. In 1970 real per capita income was \$389 (in 1993 dollars), which would place 1970 Taiwan (China) among the poorest countries in today's world. A second clear point is that governments should not expend resources where a well-functioning market exists. If the private sector provides an acceptable and affordable alternative to a public service, there is little justification for public sector subsidies for that service. This situation is most likely in the market for outpatient services and drugs for noncommunicable diseases. In this case the benefits of treatment accrue mostly to the individual; thus there should be a private market for these services. Moreover, this situation justifies shifting more subsidies to rural areas where there are fewer private alternatives.

A possible role for government in the market for individual (non-public good) health care services such as curative care is in cases where private providers have sufficient market power to set prices above marginal (incremental unit) costs, as in the case of a monopoly.⁵ When private prices are higher than marginal costs, utilization is lower than would be warranted by the cost of providing the service and there is (deadweight) loss in economic efficiency. In this case the government could either regulate private prices or directly provide services (priced at cost) through the public sector.

A third message is that prices should be used to direct individuals to the most efficient treatment location. Illnesses and prevention activities that can be treated at health clinics should not be treated at hospitals. Because demand for the treatment of more serious illnesses is less price elastic, increasing the price of hospital care relative to health center care will induce people with less serious illnesses to not bypass health centers in favor of hospitals. Such cascading systems of charges exist in a number of countries, including Kenya, Indonesia, Namibia, Zambia, and Zimbabwe (Barnum and Kutzin 1993). Criel and Van Balen (1993) found that these price structures succeeded in moving people out of hospitals and into health centers in Zaire. In Zambia and Zimbabwe, however, hospitals are still overcrowded and health centers still underutilized. This implies that either the price differential between health centers and hospitals is too low

or that the health centers provide few services of real value—that is, they have no drugs and few qualified medical personnel. In the second case the quality-adjusted price differential is too low and, in any event, there is no health benefit of sending people to health centers. This situation would require improvements in quality to justify keeping health centers open.

A fourth message is that governments should not use the same consultation fees for each diagnosis and demographic group. Fees should be lower—that is, subsidies should be higher—for the prevention and treatment of illnesses that have large public health externalities and for which demand is most elastic. Across-the-board fee increases in Kenya led to a 40 percent reduction in the treatment of sexually transmitted diseases; similar results were found in Zambia (WHO 1994). Similarly, across-the-board fee increases led to reductions in child immunizations in China (Sheng-Lan and others 1994) and Swaziland (Yoder 1989). Moreover, there is strong econometric evidence that children's demand for medical care is more price sensitive than adults'. Combined with the importance of prevention and treatment early in life, this finding suggests that children's health care services should receive higher subsidies. A similar price elasticity argument can be made for directing more subsidies to the poor. However, charging the poor a lower fee is administratively difficult (see below).

Adjusting policies to increase equity

Recognizing that poor individuals may not be able to afford health care, most countries subsidize their access to care. In countries where health care is delivered through public delivery systems, subsidies are used to keep user charges low so that even the poorest families can afford medical care. Support for this use of public subsidies is often based on the idea that nobody, regardless of income, should be denied access to basic minimal health care. Although these commitments are not boundless, they are pervasive throughout the world. Such arrangements have important implications in that redistribution policies are inseparable from health care policies. Unless private health care and insurance markets are able to guarantee universal access, governments will intervene and subsidize certain services and groups to varying extents.

The health sector is not an effective vehicle for general poverty alleviation, however. Studies of the demand for health care show it to be an income-elastic good—that is, the rich spend a larger portion of their income on health care than do the poor (Gertler and van der Gaag 1990; Baker and van der Gaag 1993).⁶ Thus health care subsidies accrue more to the rich more than to the poor. Other goods that are more income inelastic (such as food) would be better vehicles for general poverty alleviation.

Much of the concern about user fees derives from the fear that increasing fees may reduce utilization by the poor—a reasonable concern given the strong empirical evidence that poor people's demand for health care is more price elastic than rich people's. Moreover, this finding extends to the case where fees are used to generate revenues that finance improvements in the quality of and access to curative care. The extent to which this policy improves welfare depends on how willing individuals are to pay for the quality and access improvements. If individuals are willing to pay the full cost of the improvement, the improvements can be fully financed through increased user fees without reductions in utilization. But if the rich are willing to pay but the poor are not, this policy could lead to a reallocation of public subsidies from the poor to the rich. Thus equity proponents are concerned that increased user fees would become a financial barrier to the poor and reduce their access to care (Cornia, Jolly, and Stewart 1987; Gilson 1988). In this case there is a tradeoff between using subsidies to pursue equitable access to medical care and overall improvements in health.

The current situation needs to be remedied because most curative public expenditures are used to care for the nonpoor. Moreover, the poor actually pay higher prices than the nonpoor when transport and other time costs are taken into account. This is because the current geographic distribution of public facilities requires the poor to travel much further than the nonpoor. These higher prices are in part responsible for the poor having low utilization rates and obtaining a small share of public subsidies.

This subsection considers pricing policy in the context of the government expanding its objectives beyond health to include equity concerns in its objectives for pricing policy. We begin with the common approach of using across-the-board subsidies, which are used by many countries, and

then move to price discrimination strategies that try to exempt the poor from paying fees.

Across-the-board subsidies. Many governments try to promote equity by subsidizing the public health care system. Because low-income countries have trouble implementing means testing (that is, identifying the poor individually by examining their financial resources), they keep fees low for everyone. This approach amounts to across-the-board subsidies from the average taxpayer to the average user of health facilities. If the average user is poorer than the average taxpayer, there is a net redistribution of income.

Many countries, however, allocate most public subsidies to the services used least by the poor—hospital services. These services are expensive and are rationed by price, travel time, and social status rather than by clinical need. As a result public subsidies tend to benefit the rich more than the poor. Governments can better target subsidies to the poor by more heavily subsidizing services that are used by the poor.

Indonesia is typical of countries that try to subsidize the poor's access to medical care through low-fee public health care systems. The wealthiest 20 percent captures about 29 percent of government health care subsidies; the poorest 20 percent captures just 12 percent. This is partly because the wealthy use hospital services in much greater rates than the poor. One reason is that hospitals tend to be located in urban areas close to the wealthy and far from the rural poor. Moreover, hospital services are subsidized at much higher levels than are health centers and health subcenters.⁷

The situation is similar in Vietnam—the allocation of public subsidies increases with income (World Bank 1995b). These results are driven by the fact that the rich capture a much larger share of both hospital inpatient and outpatient subsidies. This is because they use more hospital services, and hospital services receive the highest unit subsidies. Although the poor use commune health centers at much greater rates than the nonpoor, this has little impact on the benefit incidence distribution because public subsidies to commune health centers account for a small portion of public expenditures.

The subsidies that leak to the nonpoor are a major cost of subsidizing the poor with across-the-board subsidies. The greater is the income elasticity of demand, the higher is

this cost of targeting. Jamaica, like Indonesia and Vietnam, heavily subsidizes hospital care. In order to target one dollar to the poor, the government must give the nonpoor about \$3.25 in subsidies (Gertler and Sturm 1997). Similarly, van der Gaag (1995) shows that while espousing equity as a goal, countries such as China, Côte d'Ivoire, Peru, and Tanzania also provide higher subsidies to services used by the wealthy. Solon and others (1991) shows that high-income individuals in the Philippines receive much more in public health care benefits than they pay in taxes.

Price discrimination. The extent to which the government is able to price discriminate and only raise fees that the nonpoor pay mitigates the severity of this health-equity tradeoff.⁸ To improve equity, the government must develop policies that lower the price paid by the poor relative to the price paid by the nonpoor by even more than is indicated by the optimal pricing policies developed in the previous section. There are a number of ways to do this.

The government's ability to implement a pricing policy that maximizes health care outcomes and redistributes subsidies toward the poor depends on its ability to identify the poor (in order to price discriminate and target programs). Here we consider four common types of targeting: individual means testing, geographic targeting, self-selection, and indicator targeting. The targeting effectiveness criteria:

- *Type 1 error:* failing to exempt someone who should be exempted. The greater is the type 1 error, the fewer poor are protected by the price discrimination method. An extreme example of type 1 error would be if facilities charged everyone the full cost of delivering a service. In this case type 1 error would be 100 percent.
- *Type 2 error:* exempting someone who should not be exempted. The greater is the type 2 error, the greater is the leakage of potential revenues from the nonpoor and the lower are the subsidies that reach the poor. An extreme example of type 2 error would be if everyone were given free care. In this case all potential revenue would be lost and type 2 error would be 100 percent.
- *Administrative costs:* the costs of identifying the poor and implementing price discrimination can swamp all the gains from price discrimination. There are diminishing returns to making price discrimination methods

more precise. Administrative methods vary from inexpensive procedures such as geographic price discrimination and targeting by age and gender to costly procedures such as a sliding fee system with social worker verification. The additional benefits of better targeting methods need to be compared with the additional administrative costs of implementing them.

Individual price discrimination based on means testing is the ideal method for minimizing the revenue loss from protecting the poor. However, administrative costs and past experiences make means testing ineffective in most countries. For example, in Indonesia and Vietnam the poor can have user fees waived through an affidavit of indigence. Few people, however, seem to take advantage of this mechanism (World Bank 1995a and 1995b). It is not clear why these systems are failing. There are several possibilities: people may not know about the benefit, prices may be so low that the benefit is not worth the opportunity cost of obtaining it, local officials may be charging a fee to issue the affidavit, facilities may charge a fee to accept the affidavit, and there may be a social stigma associated with using the affidavit.

One of the biggest obstacles to means testing lies in measuring economic well-being in an economy where most people pay no income tax and a sizable portion of economic resources are home produced. Without accurate, fast, and administratively simple methods of identifying the poor, an individual exemption mechanism may exempt too many people and sacrifice substantial revenues. More important, identifying the poor when they seek treatment is costly and difficult. It is certainly beyond the capacity of health care providers to do so, and is impractical outside the context of a general governmentwide means testing program. Facility-based individual exemption programs in the health sector are too costly, very difficult to administer, and typically are not good at identifying the poor in all developing regions (Booth and others 1995; Chaulagai 1995; Ensor and San 1995; McPake and others 1993; Mwabu, Mwanzia, and Liambila 1995; Nolan and Tubat 1995; Richardson and others 1992; Stinson 1982; and Vogel 1988).

Geographic targeting is an alternative way of implementing a pricing policy that protects the poor. This approach attempts to tailor the fee structure to the socioeconomic composition of the population served by each health care

facility. If the poor live in more rural than in urban areas and facilities are located in more urban than in rural areas, with uniform fees the poor face higher access costs than the nonpoor. Thus geographic targeting attempts to locate facilities closer to where the poor live. Otherwise the fees at facilities that serve the poor must be lower in order to compensate for the higher time costs so that the price of access is the same for the poor and the nonpoor.

With this in mind, facilities that serve primarily poor households would charge zero or near-zero fees, and facilities that serve primarily nonpoor households would charge higher fees. The fees charged by a facility would rise with the average economic status of the households in its service region. Indeed, facilities in wealthy areas could charge fees equal to or in excess of unit costs. A facility-level fee schedule increasing with the economic status of the households in the facility's service region would imply that government subsidies are pro-poor in that they are largest in the poorest areas.

In principle geographic price discrimination is straightforward; in practice it is quite complex. Populations within a region are not homogeneous. Every region has some households whose income is below the government's poverty line. In regions where a large portion of the population is poor, the government can keep fees low enough to protect most of the poor without experiencing high levels of type 2 error. But in regions with a small portion of poor residents, the government must choose between forgoing substantial revenues from those able to pay in order to protect a small number of poor, or failing to protect the poor in order to reduce revenue loss from the nonpoor. In this case it would be cost-effective to screen the poor at health care facilities or to use an individual discrimination method.

Using geographic price discrimination in rural areas where the poor are concentrated is a promising way to protect the poor without sacrificing considerable revenue. Long travel times prevent people living in wealthier areas from switching to the lower-fee facilities in poorer areas once fees in the more affluent areas have been increased. However, geographic price discrimination has limited potential in urban areas where the poor live alongside the nonpoor and most facilities are easily accessed by both groups.

An alternative approach to protecting the urban poor is through *differential pricing by level of service and self-selection*. The idea is to have low subsidies for services valued and used mostly by the nonpoor, and high subsidies for services used mostly by the poor. These are the services for which demand is income inelastic.

One approach is to shift subsidies toward the prevention and treatment of infectious diseases. Since the poor tend to suffer proportionally more from infectious diseases, subsidizing their treatment and prevention not only helps meet public health objectives but also improves the distribution of public subsidies across income groups. For example, table 4 shows the distribution of mortality from different causes across different income groups of adult women in China. While poorer women have higher mortality rates from all causes, the poor die from infectious diseases proportionately more than do other income groups. Poor women are 3.5 times as likely as rich women to die from infectious diseases, but are only 1.3 times as likely to die from noncommunicable diseases. Basic principles of targeting (Besley and Kanbur 1993) suggest that, if the costs of treatment are the same, reallocating subsidies from noncommunicable diseases to the prevention and treatment of communicable diseases would better target public subsidies to the poor.

As a general rule, the government should subsidize services for which demand is income inelastic—that is, services that are used more by the poor and for which demand does not increase much with income. For example, in Vietnam demand for commune health centers is highly income inelastic, while demand for hospital care is income elastic (Gertler and Litvack 1996). Thus keeping subsidies high for health center care and low for hospital outpatient services will better target subsidies to the poor.

Vietnam's results are likely to be true for most countries—that is, demand for health center care is the most

TABLE 4
Female adult mortality rates by cause of death and income group in China
 (percentage dying between ages 15 and 60)

Income quartile	Infectious diseases	Noncommunicable diseases	Injuries
Richest	0.4	6.7	1.2
2	0.4	7.9	2.0
3	0.6	7.6	2.4
Poorest	1.4	8.9	2.7

Source: Murray, Yang, and Qiao 1992.

income inelastic, especially in rural areas. This finding suggests that increasing subsidies for rural health centers best targets subsidies to the poor. It also suggests a general pricing structure in which fees are lower (and subsidies higher) if the patient enters the system at the lowest level, and are progressively higher the further up the system the patient enters. Thus if an individual first goes to a commune health center and requires a higher level of care at a hospital, the registration fees should be waived (or at least lowered) at the hospital. This pricing structure provides an affordable portal of entry into the health care system (through the commune health centers) and allows people who are willing to pay to go directly to higher levels of care. Since the non-poor are willing to pay to bypass the lower levels, they will be charged higher prices and receive lower subsidies.

Policies can take advantage of self-selection if a wider range of instruments is considered. If adequate medical treatment is maintained, government facilities may deliberately offer fewer amenities so that only the poor will choose to use them. This approach, however, requires accepting different levels of service (at least from the consumers' satisfaction standpoint) in order to concentrate more resources on the poor.

Finally, targeting identifiable groups through *indicator targeting* is one way to charge those most able to pay at least the full cost of care. One group that may be able to afford care is the insured population. Insurance status is a good indicator of ability to pay because the insured are wealthier than the general population. For example, in Indonesia civil servants are covered by insurance, and almost all civil servants are in the top half of the income distribution (World Bank 1995a). However, the insurance company pays less than the full cost of care, so the public system still subsidizes the wealthy insured population. This situation exists in most countries with mixed public-private systems. By charging the full cost of care to insured patients, public systems could reduce subsidies to the nonpoor and reallocate them to services used by the poor.

Adjusting resource allocation to insure against financial risk

The inherent uncertainty in health status is the classic reason most industrial countries intervene in health markets (Arrow 1963). No one knows what tomorrow will bring.

Seemingly healthy individuals can be struck by cancer, injured in accidents, or experience bouts of severe diarrhea. This uncertainty is compounded the longer one looks into the future and the less one knows about one's current health. While most families are able to finance routine care out of pocket, few are able to finance rare but expensive incidents. In fact, all countries' health care expenditures are extremely skewed in that a small portion of the population accounts for a large portion of total expenditures. Thus, while most families have only small expenditures in a given year, a small number have very large expenditures.

Risk-averse individuals prefer to have predictable health care expenditures. Predictability relieves the worry of how to finance costly unexpected illnesses and allows families to better plan other consumption. Thus individuals will seek to insure themselves against the financial loss associated with uncertain illness. In the absence of formal health insurance people have to informally finance the losses out of accumulated savings, transfers from relatives and friends, credit markets, or help from charities.

However, informal insurance seems inadequate. Using household panel data from Indonesia, Gertler and Gruber (1996) show that these informal sources of insurance are insufficient for Indonesians to fully finance the costs of severe illnesses. When illnesses are severe enough to affect labor supply and income, their economic costs are partly financed by a reduction in the family's consumption of non-medical goods and services. As a result there is demand for insurance for both the medical and income costs associated with illness.

Despite the demand, most people are unable to buy insurance from private sources because of market failure from adverse selection (Rothschild and Stiglitz 1976). Adverse selection arises because insurers are unable to observe heterogeneity in a population's health status. People are born with different genetic makeups that make them more or less predisposed to illness, and have different life experiences in terms of exposure to environmental contagion and accidents. For both reasons there is substantial variation in the propensity to become ill. Because insurers do not observe each individual's propensity to become ill, they cannot write individual contracts. Rather, they are forced to offer the best community-rated insurance plans. The terms of these contracts can be quite unfavorable to

healthy individuals. Good risks (healthy people) tend to subsidize the bad (unhealthy people), and the value of insurance to the good risks drops significantly. Good risks have an incentive to drop out of the market, leaving the bad risks to insure among themselves—and substantially driving up the cost of insurance, making it a financially bad deal for both insurers and beneficiaries. In many cases it is such a bad deal that the insurance market fails to exist.

The opposite problem is risk rating (or “cream skimming”), which occurs when unhealthy people *are* observable. Competing on their ability to select good risks leads insurers to avoid insuring individuals with preexisting conditions (such as cancer or AIDS) who are “certain” bad risks—that is, they will have predictably high medical care expenditures. Insurers do not want to provide these individuals with coverage at the community-rated (average) premium. Instead they either explicitly deny coverage or effectively deny coverage by charging a premium approximately equal to the cost of care. In many high-risk cases the actuarially fair cost of insurance (expected expenditures plus a loading factor to cover administrative costs) may be prohibitively expensive and these individuals are effectively uninsured.⁹

Insurance market failure due to adverse selection occurs when insurance is voluntary rather than compulsory. Adverse selection and cream-skimming do not occur when everyone is in the insurance pool. Most countries correct for insurance market failure through a universal public system with subsidized low prices or through compulsory social insurance in which the poor’s enrollment is subsidized.

In public systems heavily subsidized public hospitals provide insurance against large financial loss associated with catastrophic illness. However, public systems provide lower levels of insurance if they provide lower-quality services than could be bought in the private sector with social insurance funds.

The debate over whether to increase user fees in hospitals has ignored the crucial role public subsidies play as insurance. Subsidies can reduce risk in two ways. First, they can make uncertain health care costs more predictable by spreading them across healthy and sick times. Taxes that are incurred in all states of health help finance medical care that is purchased when sick. Thus raising user fees in a world of imperfect consumption insurance has an important welfare cost:

higher user fees tax families “when they are down,” imposing higher costs at precisely the point where the marginal utility (value of the next unit) of consumption is highest. Second, subsidies may help mitigate the loss of income from illness by financing medical care that improves health and productivity. In essence, public subsidies relax credit constraints on the purchase of medical care that may help people get back to work faster.

Public subsidies for medical care can correct failure in the insurance market, because private markets are unlikely to supply adequate insurance because of adverse selection. Insurance principles suggest that the subsidies should go to the services that provide care for the rare, high-cost illnesses that wreak the most havoc on household budgets.

Given that the rich disproportionately use hospital services under current systems, there is a distinct tradeoff between equity and efficiency in subsidized hospital care. This tradeoff can be mitigated by enforcing strict referral rules requiring high charges for people entering hospitals directly, with generous exemptions for people who are properly referred.

Insurance carries with it another market failure called moral hazard: insured people may use more services than they would otherwise because their price at the point of service is lower than without insurance. In this case patients tend to consume medical care beyond the point where the additional benefit is greater than or equal to the additional cost. In this sense too many resources are being allocated to treatment. The greater is the price elasticity of demand, the larger is the welfare loss from moral hazard.

These market failures have very different implications for pricing policy. When adverse selection prevents the emergence of insurance markets, public policy should promote a pricing structure that protects against catastrophic loss. Such a structure typically includes significant copayments by the insured for small expenditures with stop-loss provisions (caps on out-of-pocket costs) for large expenditures. This takes care of the welfare loss from assuming too much risk. But when moral hazard is a serious problem, people should face the true costs on the margin to limit overuse of services. The risk problem needs to be handled by relatively large, inframarginal payments (Zeckhauser 1970). Thus adverse selection suggests that an optimal payment policy would require a large copayment for small expendi-

tures and none for large expenditures, while moral hazard argues for low (or no) copayment for most expected costs with a large exposure (full cost burden) beyond that point. Since such different policy conclusions follow from different institutional structures, a great deal of knowledge about the way markets work is essential for good policy formulation.

In most countries the allocation of public subsidies is consistent with efforts to ameliorate losses from private insurance market failure, since the bulk of public subsidies is spent on hospitals. However, these subsidies are insufficient to adequately insure families against the risk of financial loss from unexpected ill health. In fact, despite large subsidies to public hospitals, people are still incurring large out-of-pocket expenditures. Moreover, Gertler and Gruber (1996) show that in Indonesia, a country with a heavily subsidized public health care system, families finance the economic costs of illness by reducing consumption.

Is social insurance the answer?

Although it is possible to mobilize resources through user fees in ways that improve welfare, there are potentially large costs to such a policy. Specifically, the scope for mobilizing private financing for public expenditures is limited by two costs: reduced insurance coverage against the risk of financial loss from unexpected illness and reduced utilization and possible consequent adverse health outcomes (especially for the poor). However, these costs are much lower in health systems financed through social insurance.

With social insurance, individuals are still insured against the risk of financial loss from illness when governments raise user fees. Under social insurance, individuals prepay their medical care expenditures (that is, premiums) into a fund that is used to pay for their medical care if and when they become ill or injured. Thus people can avoid paying unexpected fees when they are ill and so are insured against the risk of financial loss from illness. With insurance, individuals' medical care expenditures (premiums) are predictable and can be planned. Governments mobilize private resources by raising the fees charged by insurance plans for health services provided to the plan's beneficiaries. Because fee increases raise premiums and not the out-of-pocket charges at the time of treatment, raising fees causes no loss in the insurance value. Raising fees still causes a loss in welfare

because families must pay higher premiums at the expense of other consumption or savings, but that loss is predictable and can be spread over the year and across individuals.

The problem of equity in access to health care does not disappear with the introduction of social insurance. However, using government subsidies to increase equity in access is much easier with social insurance—the government simply subsidizes the poor's enrollment in the insurance plans. For this approach to be budget neutral, subsidies provided directly to facilities have to be reduced to finance the poor's enrollment. Facilities recoup the lost revenues by providing care for insured patients and being reimbursed. In this way public subsidies are better targeted to the poor, and the facilities that get the subsidies are the ones that care for the poor. Administering such a program is easier than price discrimination by facilities at the time care is needed because it is centralized, only needs to be done periodically outside the pressure of having to treat an illness, and can be done by a trained staff that does not have other responsibilities.

Although social insurance can correct some of the problems created by resource mobilization policy, it creates a host of other problems that, if not addressed as part of insurance design, could outweigh its benefits. The most obvious problem, mentioned earlier, is that social insurance cannot be voluntary. Voluntary insurance markets fail because of adverse selection. For social insurance to be financially viable, enrollment must be compulsory. This is not to say that such plans must enroll entire populations, but rather segments such as formal sector workers. In fact, most countries already have compulsory social insurance for civil servants, many have expanded compulsory coverage to wage sector employees, and a few have achieved universal coverage. In addition to adverse selection, social insurance raises a number of important design and administration issues that are beyond the scope of this paper.

Conclusion

User fees have strong potential for improving the efficiency of health care systems in developing countries. Still, they raise many questions and concerns:

- Optimal fee structures can differ dramatically from one institutional setting to another. Countries differ significantly in terms of the size and performance of the pri-

vate sector, the nature of insurance, credit, and health care markets, and the administrative capacity of the public sector to run or regulate health services. Thus much more analysis based on accurate data is needed to define better policies.

- In many countries public health budgets are determined reactively: demands for curative care must be honored and funds for population-based public goods are determined residually. In such cases fees for curative care can conserve resources for use on these public goods, improving efficiency and equity and increasing the effect public spending has on health status.
- Most countries have a large private sector providing primary health care. Public funds should complement rather than crowd out private activity. Large subsidies for inexpensive services may do little to improve overall health status if they are strong substitutes for private care.
- In the many countries in which insurance markets are not going to be fixed in the near future, hospitals should remain an important item for public expenditures. This helps protect people from catastrophic loss in the absence of formal insurance systems. The skewed demand for services, with a small number of people requiring expensive care, implies that hospitals will be a large part of the budget.
- Many countries will find that the optimal allocation of public health subsidies will involve large subsidies for nonclinical public goods, fees at primary health care facilities to conserve public resources for these goods, and large per unit subsidies to hospital services with a proper referral system. Such a system entails patients referred on the basis of clinical need and high fees for those using hospitals as the first point of contact. This is almost the opposite price and subsidy scheme as is implied by the current emphasis on primary health care.
- In countries with social insurance or adequately regulated private insurance markets, optimal policies would involve few subsidies to hospital services. These would be covered by actuarially fair prepayments.
- Retaining revenue at local levels is essential to achieving quality improvements from user fees.
- Uniform price increases reduce facility use more for the poor than for others. To the extent that this outcome is socially undesirable, adequate protection for the poor

must come from targeted interventions, as imperfect as current targeting methods may be. Health care is highly income elastic, and any uniform subsidy system is likely to be regressive.

Notes

1. If a price elasticity is small—between 0 and 1—then demand is said to be inelastic because the percentage reduction in demand is less than the percentage increase in price. When demand is inelastic, price increases raise revenues because the positive price effect is larger than the negative demand effect. If a price elasticity is large—less than -1 —then demand is said to be elastic, and price increases reduce revenues because the negative demand effect outweighs the positive price effect. Finally, if demand is unitary elastic—equal to -1 —the percentage decrease in demand is exactly equal to the percentage increase in price and there is no change in revenues.

2. For example, if fees are set low in areas where people have serious illnesses, the observed correlation between prices and utilization reflects the fact that sicker individuals use more health care and the effect of price on utilization. Alternatively, if facilities are located near urban areas where individuals are wealthier, the correlation between travel costs and utilization reflects the relationship between income and utilization and the effect of travel costs on utilization. In both cases the price elasticity estimates are biased, since they are confounded with other omitted factors related to government policy choices.

3. Strictly speaking, the authors compute the compensating differential, which is the amount of income the individual would be willing to give up for the quality improvement so that there is no change in welfare.

4. Transmission of an infectious disease is affected mainly by the number of people who are immunized. Thus individual immunization confers a benefit to people who are not immunized.

5. Another reason for government intervention in the market for individual health care services arises when the private provider has more information about the patient's illness than the patient and the provider is not a perfect agent for the patient. By perfect agent we mean that the provider cares about things other than the patient's health. In this case the provider could induce the patient to buy more services than he or she might otherwise buy.

6. The best candidates for redistribution through subsidies are goods and services that have low or negative income elasticities of demand—that is, goods and services whose use does not increase with income. These are the things that poor people tend to consume relatively more of than other things.

7. The subsidies were 206,000 rupiah for a hospital inpatient visit, 8,100 rupiah for a hospital outpatient visit, 3,400 rupiah for a health center visit, and 2,200 rupiah for a health subcenter visit

(World Bank 1993). Subsidies through health centers and sub-centers are much more equitably distributed than hospital subsidies because utilization rates of these facilities are more evenly distributed across income groups.

8. As discussed in the previous section, even if the government is not concerned with equity, there are still good reasons (related to the desire to improve overall health indicators) to price discriminate in favor of the poor.

9. This problem is exacerbated by the fact that insurance contracts are written for limited terms (for example, one year). Over time, as more high-risk individuals contract serious illness, the number of high-risk individuals able to obtain insurance declines. With an aging population increasing the number of individuals with long-term chronic illnesses, and improvements in genetic testing and long-range diagnosis, the number of individuals denied coverage can only grow.

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Cost Recovery Strategies in Sub-Saharan Africa

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Cost recovery is an essential component of health care reform—one that requires a major overhaul of health care financing systems. For the past ten years most countries in Sub-Saharan Africa have been actively reforming their health sectors. Before that, these countries had deteriorating health indicators and weak health infrastructure, partly because of persistent shortfalls in health care financing.

Most Sub-Saharan countries share a common agenda for health reform that includes increasing economic growth, expanding basic schooling (especially for girls), reallocating government spending on health from tertiary care and specialty training to public health measures and essential care packages, encouraging diversity and competition in the provision of care and the development of cost containment approaches to insurance, increasing the efficiency of government health services, and fostering the participation of communities and households in promoting healthier behavior and in managing local health care services (World Bank 1993).

In most countries cost recovery efforts are intended to:

- Raise revenue for health care by imposing user charges for public health services that used to be provided free of charge.
- Improve the coverage and quality of care by increasing resources for the health sector.
- Enhance equity in the provision of health care by targeting spending toward services for the poor and other vulnerable groups.
- Improve service utilization patterns and control frivolous demand.

- Increase efficiency in the provision of health care by making providers cost conscious and encouraging cost-effective provision of care.

The General Model

Many studies have evaluated the effects of cost recovery and other measures (such as decentralization) on health care revenue, quality, equity, and utilization (Creese and Kutzin 1995; Shaw and Griffin 1995; Nolan and Turbat 1995; Berman 1995; McPake 1993). Yet most studies are hesitant to assess the effects of cost recovery on health outcomes for two reasons. First, health outcomes (especially in the long run) are the result of inputs from many other sectors—including politics, agriculture, the environment, and national security.

Second, it is difficult to isolate the effects of health outcomes within the health sector. A country that makes good policy choices and adopts appropriate strategies in the health sector may not generate better health outcomes if policies are weak in other sectors. Mwabu (1996) demonstrates how countries that pursued structural adjustment policies during 1980–93 recorded gains in the health status of their populations. The convergence of cross-sectoral compensatory effects on health is given as the explanation. Adjustment in agriculture, education, and other sectors, combined with adjustments in the health sector, increase life expectancy and reduce infant mortality. This paper reviews Sub-Saharan African countries' cost recovery, cost sharing, and user fee reforms in the health sector in the context of general structural adjustment efforts, bearing in mind the complex interactions among different sectors as they affect health.

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Most recent surveys evaluating Sub-Saharan Africa's performance in cost recovery rely on data from 1992 and, in a few cases, from 1993 (Shaw and Griffin 1995; Gilson and Mills 1995; Creese and Kutzin 1995; Bennett and Ngalande-Banda 1994; McPake 1993; Nolan and Turbat 1993). During 1993–95, however, many countries in the region implemented important health sector reforms. These efforts may reflect the release of the World Bank's *World Development Report 1993: Investing in Health*, and the campaign that ensued thereafter. Thus attempts should be made to compile more recent survey data.

Recent Reform Efforts

Many African countries have adopted health sector reforms, including:

- Charging user fees at public facilities to generate revenue from out-of-pocket payments, social insurance, private insurance, and community financing (for example, the Bamako Initiative).
- Increasing funds for the health sector and raising the level of spending for public health care for the poor and other vulnerable groups.
- Adopting innovative financing arrangements in the organization and management of health care delivery systems. The most common strategy has been to decentralize health care delivery systems and privatize public institutions.
- Providing incentives to expand nongovernmental delivery of health care (for example, tax incentives for private health care providers and subsidies to religious groups, programs, and institutions).

User Fees As a Source of Additional Revenue

A recent World Bank review of user fee schemes in Sub-Saharan Africa found that in 1993 only five countries—Angola, Botswana, Malawi, São Tomé and Príncipe, and Tanzania—did not have any apparent form of user fees or cost recovery in the public health care system (Shaw 1995). By 1994 these countries (except Botswana) had started to implement some form of cost recovery, and by now have acquired some experience with cost recovery (Bennett and Ngalande-Banda 1994).

Country progress with cost recovery can be classified in four categories: a national system of user fees, some national system of fees but with minimal enforcement, some facilities and communities collecting fees, and no apparent form of user fees (table 1). The countries in the first category are implementing clear policies on cost recovery and are running a unitary health care delivery system; that is, the center controls or oversees regional efforts. Countries in the second category also have a unitary system, but cost recovery policies are less evolved, and institutions have not been reoriented to implement cost recovery policies. Countries in the third category do not have a national system, but individual communities and health facilities are implementing cost recovery schemes. (In these countries the Bamako Initiative is implemented separate from the general policy of cost recovery.) Countries in the fourth category are still formulating policies and establishing structures and institutions (at this point only Botswana occupies this category).

Cost recovery for public health care services was initially viewed as a panacea for inadequate revenue generation in the health sector. However, it has become apparent that although they can increase revenue in absolute terms, direct fees have little proportionate impact on the public health system's financial requirements (Waddington and Enyimayew 1989; Shaw and Griffin 1995). Most countries in Sub-Saharan Africa recover 3–5 percent of ministry of health recurrent expenditures through user fees (table 2). The literature espousing user fees, however, claims that they should recover as much as 20 percent of recurrent costs (World Bank 1993).

Such levels—and some much higher—have been achieved, but only in small-scale projects and community-based schemes similar to the Bamako Initiative. In Ghana, for example, user fees under some programs have recovered 52 percent of costs, in Guinea-Bissau 32 percent, in Mali 55 percent, in Senegal 50 percent, and in Uganda 19 percent.

These high levels of cost recovery are partly explained by the special circumstances of these initiatives. Such projects have access to essential (often foreign) management skills and can finance necessary infrastructure. In the Bamako Initiative projects, external funds from the United Nations Children's Fund (UNICEF) are in some places used to buy the initial stocks of drugs that establish the base for

TABLE I

Cost recovery in public health facilities in Sub-Saharan Africa, 1996

Category 1 Cost recovery in place and dominated by national system of user fees	Category 2 Some national system of user fee but minimal or poor enforcement	Category 3 No national system of user fees but some facilities and communities collect fees	Category 4 No apparent form of user fees or cost recovery in place
<i>Anglophone/lusophone countries</i>			
Angola	Equatorial Guinea		Botswana
The Gambia	Ethiopia		
Ghana	Guinea-Bissau		
Kenya	Malawi		
Lesotho	Nigeria		
Malawi	São Tomé and Príncipe		
Mozambique	Sierra Leone		
Namibia	Sudan		
Swaziland	Tanzania		
<i>Francophone countries</i>			
Benin	Burkina Faso	Central African Republic	
Burundi	Mauritania	Congo	
Cameroon	Togo	Madagascar	
Côte d'Ivoire	Rwanda	Niger	
Guinea		Zaire	
Mali			
Senegal			

Source: Derived from Shaw 1995.

the revolving drug fund. Moreover, the projects are cushioned against inadequacies in the general health care system.

The potential for revenue generation from direct user fees has not been realized. Shortfalls may be explained by inefficiencies, implementation costs, lack of skills, an inability to pay for full service cost, and incomplete institutional adjustment and realignment (McPake 1993). Yet even if fully realized, the potential of user fees would not result in full cost recovery. Hence work continues on alternative sources of finance, including social insurance, private insurance, and community-based schemes (Shaw and Griffin 1995).

User Fees and Equity

Discussions of user fees and equity in Sub-Saharan Africa generally focus on the utilization, accessibility, and availability of services, considerations for indigent and low-income groups, initiatives to deal with health problems specific to the region (for example, childhood diseases such as diarrhea, measles, and whooping cough), and support for public health care approaches in general. Proponents of user fees claim that the increased revenue and price effects on

demand that such fees generate can improve equity by increasing the availability of services and encouraging appropriate utilization (World Bank 1987; de Ferranti 1985; Mwabu and Mwangi 1986). The increased revenue should be reinvested and targeted toward services that improve the health of the poor. To ensure that vulnerable groups are not excluded from public services, exemption schemes should be developed. Moreover, these groups should be entitled to public subsidies.

Although recent studies on the effect of user fees on utilization rates have found negative consequences for equity, this conclusion is somewhat controversial given earlier studies by Heller (1982) and Akin and others (1985), which found that demand was inelastic with respect to price and income. Yet later work, using different econometric formulations from Heller and Akin and others, found that users are sensitive to price changes (Gertler and van der Gaag 1990; Waddington and Enyimayew 1990; Mwabu and Wang'ombe 1995; Bennett and Ngalande-Banda 1994). Even in countries where price elasticities are low, large drops in utilization have been demonstrated—in Kenya by up to 38 percent (Mwabu and Wang'ombe 1995). Huge drops in utilization in countries where price elasticities are

TABLE 2

Ministry of health recurrent expenditures recovered through user fees, various countries
(percentage of total)

Country	Share	Year
Botswana	1.3–2.8	1983
Côte d'Ivoire	3.1–7.0	1986
Ghana	7.9	1986
	7.8	1992
Guinea-Bissau	0.5	1988
Kenya	2.1	1993
Lesotho	5.8	1986/87
	9.0	1991/92
Mali	1.2–7.0	1986
Mozambique	8.0	1985
	Less than 1.0	1992
Senegal	4.4–7.0	1986
Swaziland	2.2	1985
	4.6	1988/89
Memo items		
China (exclude insurance reimbursements)	24.0	1980
	36.0	1988
Papua New Guinea	3.0	1987
Salvador	4.0	1990
Yemen	3.3	1983

Source: Creese and Kutzin 1995.

low can be explained by the fact that fees were introduced where they previously did not exist or were very low. In some cases declines in utilization reversed slightly after users adjusted to the initial price shocks (Collins and others 1995).

In most cases two groups cut back on their use of public services when user fees are introduced: people who are completely excluded from modern health care because they depend entirely on government services, and people who are picked up by other providers. Equity considerations require that the first group be protected, usually with fee exemptions. All Sub-Saharan Africa countries that are pursuing cost recovery have some type of exemption program. These programs attempt to identify people who cannot afford the services they need and to make sure that people who can afford them are charged for the services they use. In many countries the task of identifying the deserving poor is left to communities or managers of health care institutions.

Means testing is one method that is used to identify the poor (see Levine and others 1992 for examples of means testing in Ethiopia, Ghana, and Senegal). Most countries, however, lack sufficient skills to use means testing to determine the extent of poverty and implement appropriate exemption policies. As a result fee exemption programs are often exploited by the nonpoor (civil servants, medical workers, the military, and so on). In Kenya, for example, large amounts of potential revenue were lost when exemptions were granted to civil servants and health workers (Collins and others 1995). This practice has since been replaced with a medical allowance to civil servants with which it is hoped they will pay for medical care. Civil servants in Ghana, Mali, Niger, St. Lucia, and Yemen also receive non-income-related exemptions (Bennett and Ngalande-Banda 1994).

The increased revenue from user fees was expected to help deliver services of public health importance (immunizations, communicable disease control) and to support public health care in general. As noted above, however, revenue potential has not been realized. No African country has managed to use funds from cost sharing to finance public utility health care services; public health care is still financed by the budget. Retaining fees in the institutions and districts where they are collected might help address this problem, so long as districts are able to decide on the services mix for funding. Retaining fees where they are collected is also a necessary condition of decentralization, which is becoming popular. This approach is now operational in Uganda (Tindyebwa 1997), Kenya (Collins and others 1995), and Mozambique, Nigeria, and Zambia (Bennett and Ngalande-Banda 1994). Other countries—Burundi, Congo, Central African Republic, Ghana, Guinea, Malawi, Mali, Niger, Togo, Zaire—split revenues between health facilities and the ministry of health (Bennett and Ngalande-Banda 1994).

In these countries only health centers retain all their fee revenue; hospitals remit some of their income to the central treasury. In Ethiopia and Namibia all the money reverts to the treasury. Retention of fees in districts and institutions could also increase equity in another area—namely, by improving the quality of care. Revenues are expected to be reinvested not only to increase (or maintain) the volume of services but also to improve their quality. Moreover, users

will demand quality improvements if they have to continue paying. The slow recovery of service utilization rates in Ghana and Kenya after user fees were imposed can be partly attributed to the fact that facilities could not retain fees to invest in quality improvements (Waddington and Enyimayew 1990; Collins and others 1995).

Policies have since been changed in Kenya, however. Facilities now retain 100 percent of fees and are supposed to use 75 percent for quality maintenance and 25 percent for public health care. Community projects and the Bamako Initiative tend to be successful at increasing quality, particularly in francophone countries such as Cameroon and Guinea (Litvack and Bodart 1993; Nolan and Turbat 1993). The revolving fund feature of these projects allows funds to be used to maintain drug supplies. These successes help legitimize decentralization policies.

User Fees and Efficiency of Service Delivery

It is often claimed that user fees increase efficiency in the delivery of health care, for several reasons. First, user fees cause service providers and users to behave more efficiently. Second, providers have an incentive to allocate revenues to produce appropriate services at the appropriate levels, and to choose appropriate production techniques. Finally, user fees send price signals to which clients respond by using only the services that they need. As a result clients will respect the referral system and seek only primary care at low-level institutions (health centers and dispensaries) and only tertiary care at high-level institutions (district and provincial hospitals and other referral institutions; World Bank 1987; de Ferranti 1985). Until cost sharing was adopted, managers of public services were not concerned with allocative and technical efficiency. It was common to see tertiary institutions providing primary care. The pyramid referral system was failing.

Evidence on cost sharing in Sub-Saharan Africa reveals a dynamic picture of policy initiatives affecting people's choices of levels and types of services and gradation of fees. In Kenya, for instance, the national referral hospital (Kenyatta National Hospital) has in the past four years stopped providing adult outpatient care except emergency casualty services. The hospital also no longer provides pub-

lic health care services (such as family planning). Nationally, user charges are being implemented on a graduated scale. Gate fees are higher at provincial hospitals and lower at health centers. There are no user charges at village dispensaries (Collins and others 1995). Côte d'Ivoire, Ghana, Mali, Namibia, Zambia, and Zimbabwe also use graduated user charges (Barnum and Kutzin 1993; Bennett and Ngalande-Banda 1994). Namibia is encouraging proper use of a referral system by exempting referral clients from charges at higher-level institutions (Creese and Kutzin 1995). The revenue collected at various levels is used to improve quality and to encourage client conformity with the referral system.

Mwabu and others (1995) show the importance of availability of drugs on demand of services. Bamako Initiative projects are credited with maintaining quality by making drugs available. If the selection of drugs covers local diseases, clients only need go to higher-level facilities for referral services. Drugs may be cheaper at the community facility than at the referral facility. But even if they are not, having drugs available at the community level allows clients to escape other consumption costs (such as transport and travel and waiting time).

As noted above, user fees can also lower utilization rates. Presumably, part of that reduction is due to a reduction in frivolous demand. Although lower utilization rates may increase efficiency, there is no evidence showing what portion of the reduction is due to frivolous demand.

User Fee Implementation

The context in which cost recovery is implemented—that is, the institutional, administrative, and management framework—is as important for the success of the policy as the ability of users to pay for services or the quality of those services. Since health reform depends on successful reforms in other, related sectors, it must be implemented as part of a broader process of structural adjustment. But success in the health sector also depends on internal structures and capabilities. Success in cost recovery requires a public sector that is capable of administering and managing the process.

Most examples of administrative and management problems come from Ghana and Kenya, where districts and regions hold funds for long periods in non-interest-earning accounts and spend too little in the face of shortages

and financial needs (Waddington and Enyimayew 1990; Collins and others 1995). These problems can be traced to a lack of knowledge and skills in financial management or to bottlenecks in making decisions on expenditures. Ministries of health in anglophone Africa traditionally transferred spending authority from headquarters to regions and districts and imposed strict timeframes and amounts. Although this system worked well when ministries provided free services and districts spent money granted by headquarters, it is no longer effective.

Most attempts to respond to these problems have focused on two policies. The first frees the provision of health services from the encumbrances of the civil service by creating autonomous or semiautonomous boards. Zambia has proposed creating health service boards, and Ghana is considering developing Ghana Health Services, which would be similar to Ghana Education Services. Management of large hospitals and medical centers—including Muhimbili Hospital in Tanzania, Mulago Hospital in Uganda, and the Royal Victoria Hospital in the Gambia—also may be put under independent boards (Cassels 1995).

The second response decentralizes responsibility for the management or provision of health services to local governments or health care agencies. However, this approach creates many difficulties, mainly due to lack of resources and managerial capacity at the local level. For example, in Nigeria and Tanzania health budgets are raided to finance local administration. In Zambia the reform program envisaged that district and hospital boards would set their own fees and employ staff. This approach, however, could increase the inequity that decentralization is meant to address. The center needs to retain some control over the distribution of resources, but without imposing too many rules and regulations on the civil service (Cassels 1995).

Conclusion

The debate on user fees for health care services has moved from advocacy toward issues involving the programs' efficiency and effectiveness. So far the experience with user fees as a source of finance for health care has been disappointing. Except in cases of vertical programs and community-based projects, user fees have failed to provide more than 5 percent of recurrent ministry of health costs—much

less than the 20 percent anticipated. This potential is not realized because of organizational and management problems. Moreover, implementation of cost recovery efforts must ensure that quality, equity, and efficiency are maintained.

Different types of potentially sustainable and effective policies and programs for achieving quality, equity, and efficiency are being tried in Sub-Saharan Africa. These include fee exemption schemes that target vulnerable groups, fee retention at the point of collection to reinvest in quality, and reorganization and decentralization of health care delivery systems to enhance efficiency.

These efforts face an apparent catch-22, however. Because systems are not raising enough revenue from user fees, there is not enough money to reinvest in quality improvement and system adjustments. But these problems are not insurmountable, as evidenced by the Bamako Initiative and other community-based projects that have reported success at local levels. Properly managed projects have been able to use initial external funding to lay a foundation for a sustainable revolving fund. This model should be applied to national-level programs where policies are clear. An external injection of funds targeted at quality improvements should enable health care delivery systems to attract higher fees from clients. At the same time, however, governments must demonstrate the political will to pursue these policies as well as restructure public health services. Structural adjustment in other sectors is essential as well.

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Rural Risk-Sharing Strategies

Andrew Creese and Sara Bennett

Risk-sharing strategies in health care relate not to ill health, but to its financial consequences. The costs of health care, like those of other goods and services, are commonly assigned to the individuals using the services, and these costs may be reassigned or shared using a variety of risk-sharing institutions and mechanisms. Risk sharing can be defined as the reduction or “elimination of the uncertain risk of loss for the individual or household by combining a larger number of similarly exposed individuals or households who are included in a common fund that makes good the loss caused to any one member” (ILO 1996a, p. 3-1). These concepts apply equally to rural and urban populations. Where rural and urban areas may differ substantially is in the implementation conditions facilitating or impeding risk-sharing efforts. Industrialization, urbanization, high and rising per capita incomes, and population density—typically urban characteristics—facilitate the growth of insurance (Ensor 1997).

Writing twenty years ago, Lipton (1976) showed that earnings and leisure—that is, welfare—are substantially lower in rural than in urban areas. In advancing his theory of “urban bias,” Lipton also argued that these gaps are clearest in the field of medicine:

The townsman has nine times as good a prospect of medical attention as the villager in India, eleven times in Ghana, thirty-three times in Ethiopia. The poorer, the larger in area, and the less densely populated a country is, the greater in general is this disparity... Most rural

physicians cluster in the provincial capitals ... the quality of rural specialists is lower ... the types of health facilities provided almost rule out adequate emphasis on villages ... referrals of the rural sick to urban hospitals do not happen on any substantial scale. (pp. 265–66)

Of potential significance to risk-sharing potential in rural areas, Lipton also established that welfare disparities were typically smaller in rural areas than in urban areas.

Despite recent rapid urban growth, rural areas still dominate developing countries. In 1988, 74 percent of Asia’s population (including China and India) and 73 percent of Sub-Saharan Africa’s was rural; in the least developed countries as a group this figure was 80 percent, with 69 percent of the rural population below the poverty line (Jazairy, Alamgir, and Panuccio 1993). It will be well into the third decade of the next century before more than half of Africa’s population is urban (UN 1993).

Rural residents work primarily in agricultural activities—much of it seasonal, self, or family employment. Cash income is seasonal and subject to large annual fluctuations. In poor countries many rural residents face cash liquidity constraints for much of the year. In both urban and especially rural areas a large portion of the economically active population is engaged in informal employment. The size of the formal sector, and its rate of expansion or contraction, has been argued to be an important background factor in the success or demise of national health insurance schemes (WHO 1995; Preker and Feachem 1995). It remains to be seen

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whether developing countries can develop mechanisms to spread small-scale rural risk-sharing schemes to the majority of the population. Although the rural sector in developing countries has special features that affect risk sharing for health care costs, these issues are not fundamentally different from those faced by informal workers in urban areas.

Urban informal employment is of increasing importance in developing countries, and in recent years has grown faster than formal employment. In Latin America the informal sector now accounts for most urban employment (table 1). Similar trends are reported for South Asia and Sub-Saharan Africa. Thus, although this paper's focus is on risk-sharing arrangements for the rural informal sector, it also analyzes some urban and urban-rural schemes.

Informal employment creates substantial difficulties in the development of health insurance: it is difficult to identify beneficiaries, to assess their incomes, and to collect contributions. Mandating coverage, which offers substantial advantages in terms of the size of the risk pool and control of adverse selection, is also much harder for informal than formal workers.

The scope of the concept of risk sharing also warrants consideration. Discussions about rural risk sharing—or about health insurance more generally—typically analyze particular schemes (as this paper does). In most discussions of the health insurance prospects of developing and transition economies, the analysis quickly moves from conceptual definitions of risk sharing to analysis or recommendations on design and performance characteristics of particular schemes. Seldom is insurance considered in broad terms as a *function* of health care systems, and as an overall policy objective. But the pooling of risks is a policy objective,

and all health care systems are characterized by some risk-sharing arrangements. Thus risk-sharing arrangements in rural areas could include publicly financed health care, community-based health insurance, and even private health insurance.

Focusing on individual schemes, or even broad types of insurance, impedes an overall assessment of the role of insurance and the performance of all actors. In large part the debate remains straight-jacketed because insurance is treated wholly or predominantly as a source of health care finance. Saltman (1995), for example, distinguishes finance, allocation mechanisms, and production components in comparing health care systems. But health insurance is not, strictly speaking, a source of finance, but rather a type of allocative mechanism.

Experience with rural or informal risk sharing is of major potential relevance to countries at different levels of development. With a growing recognition of central governments' limited ability to finance and manage health care, new forms of finance and, perhaps more important, new forms of organization are being introduced. In low-income countries with poor growth prospects and large informal sectors, a major goal of health reform is to find new ways to organize accessible care of good quality, using a maximum of nongovernment resources in a transparent manner.

The work presented here is preliminary. It reviews recent evidence on the organization and performance of health insurance schemes for the informal sector. Despite our argument that risk sharing should be viewed as a function rather than as a category of schemes, it has proved necessary at this point to confine our analysis. At a later date we intend to develop the analysis to consider a wider variety of risk-sharing mechanisms.

Thirty-six risk-sharing schemes for the informal sector were reviewed. These schemes are in no way representative of all experiences with rural and urban informal health insurance. The schemes included here were selected based on the availability of adequate documentation. Thus our sample is likely biased toward successful schemes. Failed schemes, while equally instructive, are less likely to have been documented.

The schemes examined spread risks to different degrees and in different ways. The level of risk sharing depends on the risks that are included in an insurance benefits pack-

TABLE 1
**Urban informal nonagricultural employment
in Latin America, 1990 and 1994**
(percent)

Country	1990	1994
Argentina	47.5	52.5
Bolivia	56.9	61.3
Brazil	52.0	56.4
Chile	49.9	51.0
Colombia	59.1	61.6
Ecuador	51.6	54.2
Peru	51.8	56.0

Source: ILO 1996b.

age and on how large and diverse the risk pool is. The highest level of risk pooling occurs in tax-funded, mandatory national health service systems that are capable of providing accessible services to the entire population. At the opposite extreme is out-of-pocket payment by individuals for their care. An individual's risk of incurring the financial costs of health care can also be distributed over time. The simplest example occurs when prices for health care are set on a "fee per episode" basis, which allows the patient an unlimited number of visits until a defined illness episode is over. More ambitious intertemporal risk sharing is offered through nontransferable health care benefits for a defined period, rather like a season ticket for health care. The most systematic intertemporal risk-redistributing mechanisms are offered in schemes such as Singapore's Medisave, an individual earmarked medical care savings account that is available over a lifetime. This program allows people to build up credit for health care when they are well, to cushion or cover the increasing costs of care in old age.

Long Traditions of Risk Sharing

The risk-sharing schemes analyzed below share certain characteristics. They involve (with one exception) voluntary membership, prepayment of contributions into an identifiable fund, some (often loose) notion of entitlement to benefits, and a defined set of service providers. To varying degrees they have attracted international interest and support. But they represent only a fraction of risk-sharing experience in protecting rural populations against the costs of unexpected bereavement, disability, and illness. Numerous traditional structures also spread financial risks among groups or are linked to nonspecific savings schemes. Some schemes allow both nonspecific savings and indemnify members against the costs of unpredictable events, such as marriage or death.

The oldest documented accounts of voluntary prepayment associations for health care date from the fifth century B.C. in Greece, where trade and craft groups organized mutual help schemes based on regular pooled savings to protect members in case of death, illness, or incapacity (WSM 1996). Today voluntary prepayment schemes exist in many parts of the world, sometimes with health care as a specific claim on resources. (See Lukholo 1996 and Alain, Tchente, and Guillaume-Dieumegard 1991 for other descriptions of such schemes.)

Thus the relatively small set of documented recent experiences in this area should be seen as a subset of this older, more diverse set of risk-sharing arrangements. Given that they have barely been analyzed in terms of their potential for expanding into health insurance funds, the lessons that can be drawn from both sets of experiences are limited. But history shows that people have organized and managed cash-based risk-sharing mechanisms for big expenditure ("catastrophic") events, often with complex contribution and benefit arrangement schedules. Membership is usually individual (rather than household), voluntary, and tightly limited. Kinship and trust is usually important. The importance of social homogeneity and group confidence signal the limitations of such schemes as a basis for national schemes unless they are supported as a set of initiatives that other actors (government and nongovernment) join in a coordinated manner. Of the schemes reviewed below, the mutual funds of Yaounde, Cameroon, and Yoffe, Senegal, are closest to such traditional arrangements.

The German, Japanese, and Korean insurance systems originated in small schemes of employed people in the same craft, town, or industry. Coverage grew to the whole population as these countries moved toward full- or high-employment industrial economies. Employment in agriculture fell sharply and its productivity and earnings rose, enabling a larger portion of agricultural workers to organize themselves into insurance schemes or to buy into industrial insurance funds. Government, at least in Korea, subsidized rural participation. In recent years a reverse trend has been taking place in Central and Eastern Europe, where falling employment and shrinking tax revenue have stymied attempts to establish employment-based national health insurance in countries such as Bulgaria, Kazakstan, the Kyrgyz Republic, the Slovak Republic, and Russia.

Typology of (Mainly Rural) Risk-Sharing Schemes

There are many ways to typologize the various schemes involving rural risk sharing. They can be defined according to whether they are voluntary or mandatory, the kind of benefits provided, the degree of interpersonal risk sharing, or the circumstances that led to their creation, such as government collapse, external assistance, or local community initiative.

The main dimension for categorization used here is fund ownership and management—that is, the location of control and decisionmaking regarding the use of resources and collection of contributions in the scheme (table 2). The schemes examined were predominantly insurance rather than personal prepayment schemes, all but one were voluntary, most were rural (though five had an urban focus), and most received external financial or technical support.

Health facility schemes are generally initiated by hospital staff and cover catastrophic hospital care costs. Such schemes have geographically defined beneficiary groups based on the hospital catchment area, often including both rural and urban communities. Examples include India's Kasturba hospital scheme and Zaire's Masisi hospital scheme.

Community schemes usually focus on primary care, especially drugs, but also may include referral services and often have a broad community development orientation. Examples include Guinea-Bissau's Abota, Indonesia's Dana Sehat, Taiwan's (China) Farmer's health insurance, and Vietnam's Quang Nam Da Nang (QNDN).

Cooperative schemes are often linked to local labor markets and based on individuals' place of work. Contributions to the health fund may come from the sale of cooperatively produced goods. Examples include China's former cooperative medical system, India's Mathew Milk Cooperative, and Senegal's Mutuelle de Yoffe. Cooperative schemes are the successor to the craft-related associations that developed in ancient Greece, medieval Europe, and seventeenth-century Chile.

NGO schemes vary, reflecting the origin and purpose of the sponsoring NGO. Indeed, NGOs may be the motivating force behind facility, community, or cooperative schemes. Ghana's Nkoranza, the Philippines's Organization for

Education Resources and Training (ORT, an international NGO), West Bengal's Saheed Shibsankar Sabar Samity (SSSS, a local NGO), and Zaire's Bwamanda are examples.

Fund ownership and management were used to categorize the schemes for several reasons. First, fund ownership often reveals a scheme's initial motivation and objectives, which can differ substantially. For example, some facility-based schemes are driven primarily by the need to raise revenue. Others may combine revenue-raising goals with efforts to increase service utilization levels. Community-based schemes, on the other hand, tend to have populations' needs as their principal motivation, although concern is often focused at one level or on one benefit, such as drugs. Other schemes have a demonstration motivation, such as China's Sichuan Rural Health Insurance experiment.

Second, typologizing schemes according to fund ownership often reveals a scheme's design details. Design is an important factor in a scheme's performance. Several risk-sharing schemes have serious design flaws from a sustainability perspective (see below). Third, ownership may determine a population's overall trust and confidence in the scheme and in the services provided. Finally, ownership may be an important factor in determining the way a scheme can be complemented and supported by government, and can affect approaches to health care financing and organization.

A second key dimension for classifying schemes relates to the distinction between schemes that focus on providing coverage for high-cost, low-frequency events and those that focus on low-cost, high-frequency events (designated type 1 and type 2 in table 3). There is no easy way to categorize type 1 and type 2 schemes, but they represent ends of a spectrum of different risk-sharing schemes. Schemes such as Bwamanda (Zaire), Chogoria (Kenya), and Nkoranza (Ghana) are clearly

TABLE 2
Rural risk-sharing schemes by owner and region

Owner	Africa	South Asia	Southeast and East Asia	Latin America and the Caribbean	Total
Health facility	3	3	0	1	7
Community	4	1	5	1	11
Cooperative	1	1	4	1	7
Government	1	0	4	0	5
NGO	2	3	1	0	6
Total	11	8	14	3	36

Note: In some countries there are a large number of similar but slightly different schemes, all operating under the same umbrella name (such as Dana Sehat in Indonesia). Because of the similarities between these schemes, they are counted only once.

type 1 schemes. Type 2 schemes include Dana Sehat (Indonesia) and United Mission (Nepal). Some schemes incorporate elements of both types. For example, several schemes cover both high-cost, low-frequency events and low-cost, high-frequency ones, often without setting premiums on an actuarial basis.

The distinction between type 1 and type 2 schemes is important because different conditions are required for these types to succeed. In particular, type 1 and type 2 schemes differ in terms of:

- The degree of social cohesiveness and trust required for their effective operation
- The level of demand for insurance
- Administrative complexity.

A cohesive community is much less of an issue for type 1 schemes than type 2 schemes. Moreover, beneficiaries in type 1 schemes tend to be distributed over a wide area and to be relatively heterogeneous. Thus it is unlikely that strong feelings of solidarity can be established under these schemes. Some type 1 schemes appear (mistakenly) to emphasize community solidarity. For example, the Nkoranza evaluation report states that "the concept of risk sharing in the community must be well explained for the people to understand that if you insure and do not benefit directly, your 'neighbour will benefit from your contribution'" (Somkang and others 1994, p. 12).

Such an appeal to social solidarity may be effective at the village level but seems unlikely to be successful at the district level. On the whole type 1 schemes are less concerned with altruism and community development. This feature and the nature of the benefits they offer mean that they are more likely to be more susceptible to adverse selection and moral hazard than type 2 schemes.

The level of effective demand for insurance in developing countries has been hotly debated. Although demand

clearly depends on the context, demand for type 1 and type 2 schemes appears to be rooted in different contextual factors. Many type 1 schemes have arisen in circumstances where user fees for hospital services were high. In this context people were interested in buying insurance primarily for its risk-sharing benefits. In contrast, demand for type 2 schemes does not stem from a desire for risk sharing. Instead these schemes have focused on improving quality of care, particularly by expanding services to previously unserved communities.

Much of the debate about risk sharing has also focused on the administrative feasibility of implementing such schemes. Again, there is a critical difference between type 1 and type 2 schemes. Type 1 schemes that aim to cover certain variable costs require actuarial estimates of premiums and defined payment mechanisms (rather than simply supplementing budgets) and are more difficult to manage than type 2 schemes. Management structures for type 1 schemes reflect this difference. They tend to be more complex, and the management problems encountered are more substantial. Thus capable management may be crucial for type 1 schemes, but is probably not required for type 2 schemes.

A formal model for type 2 schemes has been proposed by Hsiao and Sen (1995), under the title of cooperative health care. Under this model strong social bonds and mutual trust are viewed as the defining elements of the community that undertakes the financing and provision of health care. Based on rural China and India, services are expected to include preventive care, immunization, family planning, maternal and child care, health education, and basic ambulatory curative care. Communities are expected to contain about 1,000 people and to be capable of paying for a health worker and a stock of generic essential drugs. Amalgamations of these communities would establish a primary health center for about 15,000 people staffed by a doctor, midwife, clinical nurse, pharmacist, and assistant. A mix of annual premiums and copayments is envisaged; membership would ideally be compulsory, and referrals would be covered through packaged fees or capitation.

Although nearly all the schemes examined are owned by a single party, autonomy in fund management varied. Some program, such as the Thai health card, are centrally driven schemes and operate within tight government guidelines. In Indonesia and the Philippines guidelines exist on the use

TABLE 3

Two types of risk-sharing schemes

Type 1 schemes	Type 2 schemes
High-cost, low-frequency events	Low-cost, high-frequency events
Tend to be hospital owned	Tend to be community owned
Tend to cover whole district	Tend to be based at the village level
Use actuarial basis or variable costs for calculating premium	Premium set mainly according to ability to pay
Committed to meeting certain designated costs	Committed only to raising extra revenue for services

of funds but are not very tight. Some schemes, such as Zaire's hospital-based schemes, had almost complete autonomy.

There was little discussion, in the documentation of the schemes reviewed, on the accountability of fund management. Where schemes were community owned, fund managers were sometimes held accountable to the local community through community meetings or simple accounting procedures (such as showing receipts to the community; Chabot, Boal, and Da Silva 1991; Mogedal 1984). Ghana's Nkoranza hospital scheme had an insurance advisory board that included members of the hospital management team and twenty-five community members (Somkang and others 1994). On the whole, however, systems for accountability to beneficiary communities appeared weak.

Overview of Schemes

This section reviews the thirty-six schemes, focusing on:

- The context in which the scheme was developed
- Membership and coverage
- Financing mechanisms
- Administration and fund management
- Provider payment mechanisms
- Arrangements for health care provision.

The context

The risk-sharing schemes compared below are drawn from contexts that sometimes differ widely. Zaire's Bwamanda scheme and Guinea-Bissau's Abota scheme were developed in response to the near collapse of government-funded health care. Korea's class II rural schemes, on the other hand, were initiated at a time of accelerating economic growth and urbanization, as a way to protect rural residents under an increasingly national insurance system. China's Cooperative Medical System was developed as communal agricultural production was emphasized as the main mechanism for economic development. When macroeconomic policy shifted to the "socialist market" and central and provincial government subsidies were cut and redirected, the system collapsed (Hsiao 1995).

The local context may be shaped by the overall economic situation and the direction of policy. Other factors that may encourage risk-sharing mechanisms include decentralization policy, traditions of community initiative and

management, NGO activity (such as religious missions) or other forms of technical assistance, and monetization in the local economy (such as cash or subsistence crops). The existing health care system also may lead to risk-sharing mechanisms, as well as limit or define the kind of insurance response. For example, the quality and availability of health services, particularly government services, might define the need for additional or better service providers. Insurance may be seen as a mechanism for improving or extending the provision of health services. In addition, the cost of existing services may enable or inhibit the development of risk sharing. Bennett and Ngalande-Banda (1994) observe, in the context of Sub-Saharan Africa, that user fees for government services may be a prerequisite for wider popular demand for or recognition of the potential role of insurance.

The availability, price, and quality of private provision may help determine which services are covered in the benefits package. In Korea and Thailand the scale of private provision made it clear that rural insurance, like urban insurance, would have to cover services provided by private practitioners, as well as by government clinics and hospitals. Thus the configuration, quality, and price of existing health services help shape health insurance schemes. The national or local context is important in understanding both the purpose and performance of risk-sharing schemes, and in identifying the barriers or opportunities to their replicability nationwide or in other countries

In nearly all the schemes examined, people were accustomed to paying fees prior to the introduction of risk sharing, or did not have any real access to health care (as in Guinea-Bissau and Lalitpur district, Nepal). Moreover, fees were often so high that a large portion of the population could not afford them. This was particularly the case for facility-based schemes; facilities often faced declining use because of high fees and low revenues. Such arrangements led to considerations of insurance. In Zaire, for example, health zones were meant to be self-supporting; thus, other than funds received from external donors, zones had to recover full operating costs. In other African countries (notably Ghana and Kenya) schemes were initiated by mission hospitals. Although detailed information on the finances of these hospitals is not available, in general mission hospitals in Africa have been forced to rely on fee income as government subsidies and external support has dried up (Gilson

and others 1994). In Japan, Korea, and Taiwan (China) health care is dominated by private providers charging high fees.

The existence of other types of insurance schemes in a country did not appear to affect the uptake of rural risk sharing, but many people were able to understand the notion of risk sharing because they were used to traditional mutual self-help mechanisms (Wong share in Thailand, Gotong Royong in Indonesia, Abota in Guinea-Bissau).

Some of the schemes examined were run by NGOs that appeared to be quite autonomous from government. In other instances schemes were initiated in the face of a breakdown in government finance for health care (for example, in Zaire, Guinea-Bissau, and recently in China). Although some schemes (such as that in Guinea-Bissau) operated in small, close-knit communities, others covered large districts with diffuse communities. In Guinea-Bissau the cohesiveness and small size of local villages were seen as factors supporting the success of the schemes (Chabot, Boal, and Da Silva 1991). However, the importance of this factor depends on the ownership of the scheme. Where funds are community owned, trust within the community is critical. Most schemes covering larger areas were facility or government owned, so accountability within management systems is more important than trust in the community.

Schemes were located both in areas where most beneficiaries were subsistence farmers (as in Nepal and Guinea-Bissau) and in areas where a large number of farmers were organized in cooperatives. Cooperative and mutual schemes develop where labor is more organized.

Economic growth often supports the growth of risk sharing. In East and South-East Asia rapid expansion of health insurance in the nonformal sector coincided with rapid economic growth. Even in Bwamanda, Zaire, one of the factors contributing to the success of the scheme was a buoyant local economy, attributable to a donor-funded rural development project that established the health insurance scheme (Moens 1990).

Membership and coverage

Membership. Potential beneficiaries of schemes are defined both by geographic location (particularly catchment areas for hospital-based schemes and village, ward, or district of residence for community schemes) and by employ-

ment variables (whether occupation, place of work, or how produce is sold). Only one of the schemes reviewed, India's Kasturba Hospital scheme, was targeted at the poor.

Most schemes use the household as the unit of membership. Many schemes that initially allowed individual enrollment often faced problems of adverse selection and switched to household enrollment. In Nkoranza, Ghana, premiums were set individually but the entire household had to join. The failure of insurance scheme workers to sign up all members of a household, however, contributed to the failure of the scheme (Somkang and others 1994). In Taiwan (China) individual enrollment was allowed under both the Farmers Health insurance scheme and labor insurance, since only workers (not their dependents) could be enrolled. However, the Farmers scheme appears to have been compulsory and the labor insurance scheme probably attracted few self-employed workers. In Vietnam at least two-thirds of the household was required to join (Ensor 1995).

Other measures that prevent adverse selection include requiring that a minimum number or portion of households in a village or administrative area join a scheme. In the Kasturba program at least 75 percent of poor households in a village must join. In Thailand at least 30 percent of households in a village must join in order for the village to participate in the health card scheme.

If enrollment in a scheme is allowed over a long period and there is no waiting period, then people tend to enroll when they need care. At the VHS hospital in Madras, India, where enrollment was allowed throughout the year without a waiting period, less than a quarter of subscribers had renewed their membership. The remaining three-quarters probably joined when they got sick, eroding the insurance effect of the scheme (Dave and Berman 1990). Several schemes that planned to have a limited enrollment period later extended it because enrollment rates were low. Users who enroll only when they get sick create big problems in hospital-based schemes, where the need for service is most unpredictable and bears large financial consequences. For community schemes covering mainly primary care it is easier for households to predict utilization and decide whether it is worth joining.

Coverage. Except for the schemes in China, coverage of the target population tends to be low (table 4). Zaire's

TABLE 4

Coverage of schemes

Scheme	Country	Number of people covered	Coverage of target population
<i>Facility-owned</i>			
Chogoria	Kenya	9,000	17%
CIMIGen	Mexico	600	n.a.
Kasturba	India	14,390	n.a.
Masisi	Zaire	3,500	n.a.
Raigarh	India	75,000	n.a.
VHS	India	3,800	n.a.
<i>Community-owned</i>			
Abota	Guinea-Bissau	200,000	n.a.
Assaba	Guatemala	65,000	40 families
Boboye	Niger	250,000	100% (compulsory)
Dena Sehat	Indonesia	12,000,000	13 villages
Health card	Thailand	2,700,000	6.5%
Lalitpur	Nepal	6,000	5–10%
Rural Cooperative	China	546,000	31–100%
<i>Medical System project</i>			
Sichuan rural health insurance	China	40,443	>90%
<i>Government-owned</i>			
Muyinga	Burundi	n.a.	23 households
QNDN	Vietnam	10,000	n.a.
<i>Cooperative-owned</i>			
Cooperative Medical Scheme	China	About 700,000,000	~100%
Mallur Milk	India	5,000	n.a.
Mutuelle Famille Babouantou de Yaoundé	Cameroon	455	22%
Yoff	Senegal	150 families	n.a.
<i>NGO-owned</i>			
Bwamanda	Zaire	80,000	66%
G.Kendra	Bangladesh	20,000	n.a.
Goalpara	India	1,000	n.a.
Nkoranza	Ghana	37,000	32%
ORT	Philippines	1,300	n.a.
SSSS	India	6,800	n.a.

n.a. is not available.

Bwamanda hospital scheme stands out as having strikingly high coverage relative to other schemes. Many community-owned schemes (even those that were successful, such as Thailand's health card scheme) failed to cover more than 10 percent of the target population.

Financing—premiums, copayments, and cost recovery

Premiums were generally flat-rate premiums, paid on an annual basis. In-kind payments generally were not accepted. Few schemes took proceeds from cooperative sales.

There were exceptions to this general pattern. Two hospital-based schemes in India (Kasturba and VHS) and one scheme in Bangladesh set premiums on a sliding scale according to income. More sophisticated schemes in Japan and Taiwan (China) generally set premiums as a percentage of earnings. In Korea premiums were based on a complex assessment of income and assets.

Some villages in Guinea-Bissau, the scheme in Lalitpur, Nepal, and the Kasturba hospital scheme in India allow payment in kind. Interestingly, very few poor agricultural communities in Nepal chose to pay in kind (Donaldson 1982).

The Dana Sehat scheme in Indonesia and the ORT scheme in the Philippines were the only insurance schemes that allowed payment of premiums more than once a year. Still, monthly payments create difficulties for workers with seasonal income. The ORT scheme adopted a flexible payment schedule because it was felt that many households would not be able to afford the annual premium in one lump sum. A number of families, however, dropped out of the scheme because they failed to keep up payments (Ron and Kupferman 1996).

Few schemes had built-in exemption policies. In Boboye, Niger, the indigent could get special waivers (Diop, Yazbeck, and Bitran 1995). In Guinea-Bissau's Abota scheme villagers could choose to give the indigent access to drugs despite the fact that they had not paid (Chabot, Boal, and Da Silva 1991). In the ORT scheme project staff tried to seek supplementary funds to subsidize the premiums of poor families (Ron and Kupferman 1996). In Lalitpur, Nepal, poor households could get a free health card if they had a letter from a community leader (Donaldson 1982). Elsewhere people who could not afford premiums would simply pay user fees when using the service or not seek care.

East and South-East Asian economies provide coverage for the poor by issuing special low-income cards or developing schemes specifically for the poor, rather than integrating them into the main health insurance system. In Korea, however, the poor are theoretically integrated into the system through subsidized premiums.

All the schemes relied on funds other than those received from premiums (table 5). Again, Zaire's Bwamanda scheme stands out, with a cost recovery ratio of about 80 percent. Cost recovery ratios are much lower in other schemes. In Thailand about 35 percent of recurrent costs are covered.

However, this needs to be placed in the context of high government cost recovery (on the order of 50–60 percent of recurrent costs at district hospitals). Thus less cost recovery is achieved under the health card scheme than under the user fee system.

Guinea-Bissau's Abota scheme is generally perceived to be successful. For many years community health insurance was the sole source of finance for drugs in many communities. It should be emphasized, however, that the drugs stocked at the community level were very basic (just twelve essential drugs), and that drugs were sold to health posts at donor-subsidized prices. About 90 percent of the cost of essential drugs was covered by donors (Eklund and Stavem 1996).

As noted, the VHS scheme in Madras, India, charged premiums on a sliding scale, which led to very different rates of cost recovery. Predictably, most of the people (74 percent) that joined the scheme were uninsured and seeking care at the health center level. Health centers record all insured persons on separate registers and at the end of each month present claims to the fund holders, who pay them. This procedure covers no more than about 3 percent

of recurrent costs, and the same level of revenue would otherwise be collected through user fees.

In some cases, however, management structures were very simple. In Guinea-Bissau one of the main reasons for implementing a prepayment (as opposed to a user fee) system was its administrative simplicity. A village leader would simply visit each household once a year and ask for payment of a fixed amount. After an initial learning period, villagers managed the scheme well, although increasing economic pressures eventually led to misuse of funds that threatened the credibility of the scheme.

In Nepal's United Mission scheme village committees made some very good decisions, particularly relating to exemptions, but were poor at accounting for funds and communicating their plans to the rest of the village.

Fund management. Few details were available about management structure or management capacity for government-run, mutual, and cooperative schemes. However, more formal administrative structures are likely to be in place for mutual and cooperative funds, which may facilitate management.

TABLE 5

Cost recovery under the schemes

Scheme	Costs covered	Cost recovery ratio
Abota, Guinea-Bissau	Full cost recovery on drugs	n.a.
Boboye, Niger	Not specified	149% of drug costs
Bwamanda, Zaire	Aiming to cover operating costs (that is, excluding capital and staff benefits in kind)	80% of operating costs (from patient revenue, including 20% copayments)
CAM, Burundi	Not specified (funds go to local government)	34% of drug costs for card holders
Farmers health insurance, Taiwan (China)	Costs fully covered by premiums, government contributions, and copayments	Copayment is 10-50% of fee (government pays 70% of premium, beneficiary pays 30%)
Health card scheme, Thailand	Not specified	Estimates differ; about 35% of recurrent costs
Kasturba, India	Drug costs, village health worker remuneration, and travel costs of hospital team	n.a.
Health insurance for informal sector, Korea	Costs fully covered by premiums, government contributions, and copayments	Copayment is 40-60% of fee (government pays 50% of premium, beneficiary pays 50%)
Lalitpur, Nepal	Aimed to cover any health post expenditure on drugs over Rs 8,500 a year (the standard government drugs budget)	Less than 10% of health post recurrent costs
ORT scheme, Philippines	Self-supporting except ORT finance of one doctor and two nurses	n.a.
VHS, India	Unclear	Range from 1.1% of recurrent costs for low-income to 59.9% for high-income subscribers

n.a. is not available.

Where premiums are collected at one point in time and must meet financial commitments for an entire year, it is essential (particularly in high-inflation environments) that the funds are invested. In its first year of operation Ghana's Nkoranza scheme ran into difficulty because it had no investment policy and high inflation rates rapidly eroded the value of the fund. In later years, however, the scheme bought treasury bonds. Several innovative ways to combat inflation have been found. In Zaire's Masisi scheme funds were held by the district pharmacy, which immediately converted revenues into drugs. In Zaire's Bwamanda scheme funds were capitalized by the NGO. This problem does not occur in more stable economic environments, particularly where investment opportunities are safe and accessible (Japan, Korea, and Taiwan, China). Under the Thai scheme fund holders did not have to pay providers until the end of the year and could invest the funds during the year. Investments often took the form of interest-bearing loans to community members (Myers 1989; Supachutikul 1996).

Few of the studies reviewed provided much information on management information systems. In general schemes focused first on developing adequate financial management systems in order to account for finances and ensure that only insured people could access benefits. Protecting the scheme against fraudulent claims often proved difficult because in many contexts it was difficult check the identity of the person seeking care (McFarlane 1996; Somkang and others 1994).

After the basic systems were in place, they might expand to cover utilization, which is useful in setting premiums. Only after these mechanisms were operational did attention turn to more complex issues, such as monitoring quality of care. Still, only the most developed of the schemes examined, such as the one in Korea, had information on these aspects. Some community-owned schemes (the Thai health card scheme, the prepayment scheme in Boboye, Niger) had information on quality from special evaluations, but not from routine data. In Taiwan (China), under the Farmers Health Insurance scheme, routine patient data now include fees charged by category, diagnosis, surgery, and length of stay.

Marketing and information and education strategies varied immensely, depending partly on a scheme's catchment area. In Nkoranza substantial efforts were devoted to marketing and information and education, with a series of dis-

trictwide meetings, campaigns, and information sheets. Under the ORT scheme in the Philippines a registration campaign was held. In Chogoria (Kenya) a major marketing campaign was planned to launch the new scheme (McFarlane 1996).

Provider payment mechanisms

All the hospital-based schemes paid the hospital on a case-based or fee-for-service basis. For most of the primary care schemes all funds collected were allocated to the nearest provider on a lump-sum basis. The Thai scheme is an interesting exception. The scheme provides access to all levels of care if patients are referred. Initially, therefore, there was a fixed formula for allocating funds between different levels of the system. For example, in Chiang Mai 15 percent of funds were ultimately retained by the village committee, 20 percent by the health center, 33 percent by the community hospital, and 32 percent by the provincial hospital (Supachutikul and Sirinirund 1993). These allocations varied somewhat between provinces. Since there were strict referral procedures in order to be eligible for fund coverage, these fixed proportions could be estimated to some degree. However, under this payment system higher service levels, particularly district hospitals, often felt that they received an unfair share of funds. In more recent years the referral procedures have become more lax and there is now discussion about linking allocation to actual utilization of facilities. In order to institute such a payment mechanism, however, stronger information systems are required.

Provision of health care

Benefits package. On the whole, benefits packages were poorly defined. Some schemes had exclusions (for example, sexually transmitted diseases in Vietnam, dental services in the Philippines's ORT scheme), but otherwise schemes tended to cover all the services available at the participating facilities. The main problem with this approach was high enrollment rates among people with preexisting conditions, particularly chronic illnesses. Kenya's Chogoria hospital scheme initially had a very broad benefit package covering all such conditions. But when the scheme was recently reviewed the benefits package was defined much

more tightly in order to exclude both the elderly and those with preexisting conditions (box 1). Very few of the schemes used revenue to provide non-personal services.

Integration of health care services. Hospital-based schemes tended to focus exclusively on the hospital level and have limited connections with primary care. There were, however, some exceptions. The Chogoria scheme covered primary providers and used them as gatekeepers to the hospital level. In Zaire's Bwamanda scheme primary clinics acted as gatekeepers to the hospital scheme, but fees for services at this level were not covered by the scheme (Moenis 1990). Community-owned schemes tended to have clearer and stronger referral structures. In Taiwan (China) and Korea providers are predominantly private and referral systems are extremely weak (if they exist at all). The lack of a gatekeeper has contributed to rapid cost escalation in these economies.

Quality of care. Several community-owned and NGO schemes used revenues to expand access to health services, but few made efforts to improve other aspects of quality of care (the exceptions being Niger's Boboye, Vietnam's QNDN, and Mexico's prepayment scheme). None of the facility-owned schemes had explicit links between the introduction of the scheme and attempts to improve quality of care.

Under Vietnam's QNDN scheme special efforts were made to improve the quality of care because there were (officially) no fees at hospitals. Thus special efforts had to be made to attract people to the scheme. In both Mexico and Vietnam quality improvements focused on the hotel aspects of care.

Few schemes adopted special pharmaceutical policies, although the ORT scheme in the Philippines managed to negotiate favorable prices for essential drugs purchased from local suppliers.

Assessment of Performance

Health status improvement

No studies have been made evaluating the impact of these schemes on health outcomes.

Box 1 Exclusions and limits under Kenya's Chogoria Hospital Health Insurance Scheme

- Diseases that were diagnosed prior to joining the scheme or within the waiting period are not covered.
- Coverage is discontinued when a person turns 65.
- Treatment of patients with AIDS is provided up to a maximum of Sh 36.00 a year.
- Treatment of psychiatric illness is limited to Sh 68.00 per policy per year.
- Expenses that are associated with normal or abnormal pregnancy are not covered (although the operation fee for a first Caesarian section is covered).
- Reading glasses, eye and ear tests, and hearing aids are not covered.
- Self-inflicted injuries are not covered.
- Birth defects and cosmetic surgery are not covered.
- Dental procedures are not covered.
- Medical examinations are not covered.
- Procedures carried out for nonmedical reasons are not covered (circumcision, for example).

Source: McFarlane 1996.

Efficiency

Administrative efficiency. In some cases (such as Guinea-Bissau's Abota) the prepayment route was taken because it was seen as being administratively more efficient than user fees. In other instances (such as Ghana's Nkoranza) there appear to be high administrative costs (particularly the use of time of scarce skilled personnel), yet substantial problems remain in the administration of the scheme.

Allocative and technical efficiency. Fee-for-service reimbursement has a number of well-known shortcomings. It provides little incentive for efficiency on behalf of the hospital. It does not guard against problems of cost escalation. And it is administratively complex. Fee-for-service payment gives providers incentives to overservice and overprescribe. In most of the cases examined overprovision was unlikely to be an issue because the provider was a government or mission facility, and staff were paid on a salary basis. However, it was a concern in Masisi, Zaire, where part of hospital revenue was used as incentive payments for doctors (Noterman and others 1996). At Chogoria hospital the medical officer in charge noted that "it has taken some time to

educate our prescribers to treat patients on the scheme in a similar manner to other patients, keeping in view the cost of treatment" (McFarlane 1996, p. 7).

All the schemes examined were fairly weak purchasing agents; few defined cost-effective packages of care, few implemented strong referral and utilization control systems to optimize efficient use of different levels of the health care system, and few implemented a management information system that monitored cost-effectiveness or appropriateness of care delivered.

Not only were the schemes weak purchasers, they also sometimes introduced inefficiencies into the system. For example, many hospital-based schemes largely ignored primary care. Although the documentation does not explore the impact of this, it would seem likely to result in underutilization of health centers (leading to facilities operating at low capacity and rising unit costs) while patients are treated less efficiently at the hospital level. Again, Zaire's Bwamanda scheme differs, because access under insurance to the hospital requires a referral from a health center.

The hospital-based schemes in Nkoranza, Ghana and Masisi and Bwamanda, Zaire, experienced rapid cost escalation, at least in their early years. In Korea and Taiwan (China), where fee-for-service payments also exist, such problems have persisted despite efforts to contain costs through copayments. The lack of a gatekeeper has also contributed to rapid cost escalation in these economies.

Presumably, if funds are held at the community level, then it is in the interest of the fund holder to make sure that unnecessary utilization of expensive secondary-level services does not occur.

Financial efficiency. Over time most of the schemes were able to devise ways to invest the revenue raised from the insurance scheme. However, scheme managers had not always thought out this aspect adequately prior to implementation, and heavy financial losses in the first year could adversely affect the financial efficiency of any scheme for a long period.

Equity

In financing. Risk sharing has been promoted as a means of encouraging more equitable financing of health care. All

the insurance schemes examined set premiums on a community-rated basis and thus entailed a subsidy from the healthy to the sick. Few schemes, however, adopted sliding scales, and the use of flat-rate premiums implies regressivity in financing. A sliding scale system in Bwamanda allowed lower copayments for more distant residents but was abandoned because of the extra administrative cost and because it did not appear to affect utilization. It did, however, improve enrollment and thus would have effectively reduced adverse selection.

More important is the question of whether insurance is more or less regressive than other financing alternatives. Although flat-rate premiums are likely to be less regressive than user fees, they may be more regressive than general tax revenue financing. Empirical work in a number of industrial countries has established that social insurance is more regressive.

Affordability is probably the key issue in terms of equity. Few schemes made special allowances for people who could not afford to pay the premiums. In most cases people who could not afford premiums were required to pay user fees instead. Thus the effectiveness of insurance in protecting the poor raises the question of the effectiveness of exemption mechanisms.

Several schemes that examined the issue of affordability acknowledged that it could be a problem, although the evidence was not always clear cut. For moderate to large low-income households in Nkoranza, Ghana, the estimated cost of premiums amounted to 5–10 percent of the annual household budget, which may well constitute a financial barrier to membership (Somkang and others 1994). In Muyinga, Burundi, 27 percent of respondents to a household survey stated that financial inability to purchase a card was one of the main reasons they did not participate in the scheme (Arhin 1994). In Mexico about 20 percent of enrollees in the perinatal prepayment scheme dropped out, and this was mainly attributed to financial inability to keep up payments (Ensor 1995).

In utilization. Only the pilot project in Boboye, Niger, analyzed how utilization patterns varied by income group. In Boboye it was found that utilization rates among the poor had gone up since implementation of the scheme. Moreover, when payments by the poor who used government facili-

ties were compared before and after the scheme, total payments had gone down (Diop, Yazbeck, and Bitran 1995). The scheme in Boboye was, however, very different from those implemented elsewhere. And although the Boboye experience suggests that it is possible to design an insurance scheme that has positive equity effects in terms of who benefits from the service, it by no means demonstrates that this is always the case. The compulsory (tax-based) system in Boboye performed better than a user fee experiment in a comparison district.

Many of the case studies discussed utilization and enrollment patterns by geographical location of the household. There is fairly substantial evidence that utilization increases far more among insured households located near a health care facility and that these households are also more likely to join such a scheme (Criel 1992; Donaldson 1982; Noterman and others 1996). The private costs of seeking care form a considerable barrier to accessing care. Under most schemes people pay the same premium wherever they live; thus those located far from the facility (who might be part of poorer, more remote rural communities) end up cross-subsidizing those who live close. This situation might also lead to a form of adverse selection in which remote households drop out of the scheme because the premiums are so high that it is not worthwhile for them to join. This can lead to a vicious circle in which average utilization rates rise even higher and more people drop out.

The only documented attempt to implement a sliding scale based on geographical proximity to the facility took place in Bwamanda, where for one year the level of copayment was based on a sliding scale depending on distance from the hospital (a 20 percent copayment was levied for the nearest group, down to 5 percent for the most remote group; Criel 1992). Under this system enrollment went up among the remote group but their utilization of the hospital did not. Furthermore, the implementation team thought that enrollment among this group might have gone up in any case because the scheme became better known. The sliding scale was dropped because it appeared to have no impact on utilization and was administratively more complex.

Most of the schemes in Sub-Saharan Africa allowed access only to public health care facilities. Thus there is unlikely

to be a "market response" to the establishment of insurance in remote areas. In Korea, however, where private providers were the main mode of service delivery, the establishment of insurance schemes was found to be insufficient to encourage providers to relocate to rural areas. The government had to initiate separate programs to finance remote health care centers, subsidize insurance societies in rural areas, and use tax incentives to encourage the development of clinics and hospitals in these areas (Peabody, Lee, and Bickel 1995).

Finally, exclusions and limits on the benefits of schemes have implications for equity in the utilization of services. In schemes that cover catastrophic costs of care, setting certain exclusions may be essential to guard against adverse selection. However, these exclusions are likely to affect more vulnerable groups, such as the elderly and people with AIDS (see box 1).

Equity between schemes. In the few countries where there is substantial coverage by rural risk-sharing schemes (for example, in China prior to the breakdown of the Cooperative Medical System and in Thailand) equity between schemes has become a major issue. In China the type of care to which people had access varied substantially according to the wealth of the community; poor communities could often only afford to cover primary care services and did not cover inpatient services at county hospitals (World Bank 1996).

Korea now has more than 600 insurance funds. There is substantial government subsidy and regulation of the funds but it is not clear that this intervention promotes equity between schemes. The government regulates reimbursement rates and provides a 50 percent subsidy to premiums charged. However, premiums are set by the individual insurance society, which implies that schemes covering more affluent groups can buy bigger and better benefit packages, and that the government's subsidy of this benefit package will be higher in absolute terms (Peabody, Lee, and Bickel 1995; Yu and Anderson 1992).

Few of the countries examined provided evidence on equity issues between formal and informal schemes. In Japan, Korea, and Taiwan (China) the schemes that cover the informal sector are now fully integrated with the national health insurance scheme. In many other countries formal schemes are nonexistent or very limited. Thailand is an exception, and substantial questions are being posed about

the different benefits and government subsidies provided to participants in formal and informal schemes (Khoman in this volume). In 1994 it was estimated that total expenditure per capita under the Civil Servants Medical Benefit Scheme was 9.4 times higher than that under the Health Card Scheme, and expenditure under the Social Security Scheme was 3.7 times that under the Health Card Scheme. Differences are even more marked if the level of government subsidy to the schemes is considered. Government subsidy per capita to the Civil Servants Medical Benefit Scheme and the Social Security Scheme was 27.0 times and 4.4 times that to the Health Card Scheme (Supachutikul 1996).

Consumer satisfaction

Most of the schemes paid little attention to consumer satisfaction, or even to what consumers wanted, during the design phase of the scheme. None of the studies reported surveys of consumer satisfaction, and few had carried out marketing surveys prior to implementation. As judged by demand for the schemes, consumer satisfaction was often low.

Sustainability and replicability

The evidence from these experience suggests that there are several threats to the scope for raising revenue through rural risk-sharing schemes:

- The small scale of the majority of the schemes examined
- Adverse selection, leading to progressively smaller risk pools and higher costs
- Heavy administrative structures and costs in some schemes.

These constraints often led to low levels of cost recovery. Furthermore, schemes often received substantial input, particularly technical input, from donors and expatriates, which suggests that they might otherwise be unsustainable. Most of the schemes examined were relatively short lived or, if still operating, were recently initiated. The main exceptions are some of the Indian NGO schemes and those schemes in East Asia that have become part of government national health insurance schemes.

Schemes that allowed individual membership often faced problems of adverse selection. In Nkoranza, Ghana, premiums were set on an individual basis but the entire household had to join. However, the failure of insurance scheme workers to sign up all members of a household contributed to the failure of the scheme (Somkang and others 1994). Further prevention measures against adverse selection include requiring that a minimum number or portion of households in a village or administrative area join a scheme.

If enrollment in a scheme is allowed over a long period and there is no waiting period, then people tend to enroll when they need care. This is a big problem in hospital-based schemes, where the need for service is most unpredictable and bears higher financial consequences. For community schemes covering mainly primary care it is easier for households to predict utilization and decide whether it is worthwhile to join.

The main problem with benefit packages that do not exclude preexisting conditions was high enrollment rates among those with preexisting conditions, particularly chronic illnesses.

Two of the schemes, the ORT scheme in the Philippines and the RCMS scheme in China, claim to fully recover costs, but they did not set premiums on an actuarial basis. Presumably in these cases input levels or copayments were adjusted to reflect the revenue received. The advantages of this approach over a traditional actuarial approach are not clear.

With one exception, the schemes examined were voluntary schemes. Many of the problems (particularly adverse selection) associated with the schemes stemmed from their voluntary nature. It has been argued that in developing country contexts mandatory schemes for informal sector workers are unlikely to be feasible because there is insufficient knowledge about the number and location of rural households. Identification, income assessment, and contribution collection can rapidly become an expensive process in rural areas. However, authorities in Boboye, Niger, managed to implement a mandatory insurance scheme through an earmarked tax. More investigation of the prospects for implementing mandatory schemes in developing countries is needed. Clearly, mandatory forms of risk sharing will be easier to implement in areas where local government taxation systems are extensive and well developed.

The inclusion criteria for schemes in this review effectively excluded many of the better-known Latin American schemes. For example, the Igualas scheme in the Dominican Republic was excluded because the insurance carrier (or health maintenance organization) is essentially a private for-profit business (La Forgia 1990). Ecuador and Mexico both have schemes for informal sector workers that are subsidized entirely by premiums paid by formal sector workers (DeRoock and others 1996). It would be interesting to explore whether special conditions in Latin America made the typical risk-sharing scheme discussed here inappropriate.

Lessons from Rural Risk-Sharing Experience

Context

The first lesson is that context matters. Some schemes have come into existence in response to economic and political crisis (Bwamanda, Zaire). The success of others has been facilitated by economic factors (Korea) or terminated by them (China). The external environment has an influence on whether and what type of risk-sharing initiative might be propitious, and on the replicability within a country or transferability between countries of such experience. A consideration of context provides a wider opportunity to review how the overall risk-sharing function in health is being implemented, including the use of tax-based health expenditure by government and other public and private schemes.

Design

Design is critical. It is tempting to conclude that the experience with rural risk sharing has been a litany of disasters. Many of the schemes examined here had fundamental design flaws. Although many of these flaws appear obvious, they clearly were not to the people designing and implementing the schemes. Thus a number of points need to be stated clearly and disseminated widely.

Protect against adverse selection. Ways to ensure against adverse selection include:

- The minimum action that should be taken is making the household or even the village the unit of membership and implementing this policy strictly.
- Making the scheme compulsory (although this does not seem to be feasible in many contexts).
- Stipulating that a certain portion of households in the village must join the scheme before the village is allowed to enter the scheme (as is done under Thailand's health care project and India's Kasturba hospital scheme).
- Preventing people with preexisting conditions from registering, or limiting the benefits available for such conditions (although the advantages of such measures need to be weighed against the equity implications).

If enrollment throughout the year is allowed, establish a waiting period before services can be accessed. Households should not be able to join the scheme when they get ill and decide to seek care. Although most schemes recognized this in their initial design, in many cases few people were enrolled at the end of the registration period and the period was extended in the hope that more people would join. Administrative capacity is required to manage required waiting periods.

Support the referral system and define a primary point of contact. Many schemes, particularly hospital-owned schemes, have paid little attention to the effect the scheme has on other levels of the health care system. Such a segmented approach adversely affects not only the providers excluded from the scheme but also the providers in the scheme. Referral systems exist to ensure that patients are treated in the most appropriate and cost-effective manner and to protect the financial viability of hospitals. Insurance schemes cannot afford to ignore these issues.

Develop an investment strategy for funds prior to receiving them. In high-inflation environments delays of even a few months can quickly deplete insurance funds. An investment strategy is essential to guard against erosion of funds.

Becoming an active purchaser

The schemes examined have largely failed to:

- Negotiate special prices with providers

- Define benefit packages to ensure delivery of only cost-effective services
- Monitor the quality and appropriateness of care
- Use payment mechanisms to encourage efficient, quality service
- Develop strong essential drugs policies.

Recent health sector reform literature from both industrial and developing countries emphasizes the importance of informed purchasers in the health care sector (Saltman 1995). But most rural insurance funds remain pure financial intermediaries—that is, collectors of contributions and payers to a single provider. Considerable scope exists for the development of a more active role, including using the payment system to change incentives, to include new providers (such as primary care or NGO providers), and to reward quality improvement. Risk-sharing schemes should not be seen simply as a source of finance, but rather as ways to organize health services financing and delivery. The potential that risk-sharing mechanisms have for improving system performance is often untapped.

Listening to consumers

A substantial amount of the literature on rural insurance focuses on whether demand exists among informal sector workers and rural people for health insurance. In cases where health facilities are charging substantial amounts for care it would seem likely that demand for health insurance does exist. Yet few schemes have rooted their design in a survey of consumer demand or have evaluated whether schemes match people's expectations.

Marketing efforts are likely to be weak in this context. Too many project documents seem to assume that marketing techniques explaining the principles of health insurance will convince people to join the schemes. But consumers really need to be consulted during the design phase. More important, they need to have confidence that the scheme is managed in their interest, and that it will ensure they have access to quality services when they need them. Confidence in a risk-sharing mechanism is an abstract notion: people's assessment of the competence, quality, and professionalism of a health care provider is usually accurate. If the right type of care is not available, insurance initiatives cannot expect to succeed.

Risk sharing and the rural poor

Most risk-sharing schemes appear not to be targeted at the rural poor, but at the rural middle classes:

- They seldom allow payment in kind
- They have flat-rate premiums
- They have no exemption policy
- They may require substantial copayments.

Geographical and income inequities in financing could be reduced through the use of a sliding scale. In principle it should be easier to implement a sliding scale for payment of an annual premium than for multiple user fee-type charges. However, the user fee literature has highlighted the problems involved in successfully targeting exemptions based on income (Parker and Knippenberg 1991; Willis and Leighton 1995). Sliding scales based on geographical location would be much less susceptible to targeting errors, and appear to be worth trying.

Questioning facility-owned schemes

About 30 percent of the schemes identified were owned and initiated by health facilities, mainly hospitals. Hospital management often has a strong incentive to implement insurance; if financial support from government is limited and the population cannot afford to pay cost-recovering fees, then health insurance schemes may appear to solve many problems. However, hospital managers have few incentives to design and implement health insurance schemes that protect the interests of beneficiaries in the most cost-effective way, or that cover the entire population.

The review of facility-owned schemes suggests that, with the exception of Bwamanda, hospital-owned schemes:

- Have little incentive to improve the quality of care
- Tend to overlook primary care
- Tend to seek overly favorable remuneration (particularly through retrospective fee-for-service payment)
- Have few incentives to improve efficiency.

Even if a scheme is designed principally to cover the costs of hospital care, it may be preferable that responsibility for managing the scheme and ownership of the insurance fund rest outside of the hospital, or that the fund itself own or be responsible for managing all district health services.

The role of government

A number of important roles emerge for government in the development of rural risk-sharing schemes.

Financing. Policymakers should recognize that the revenue-raising potential of rural risk-sharing schemes, particularly in very poor countries, is likely to be limited. Thus they should not set ambitious cost recovery targets under such schemes. Some of the literature appears overly ambitious in terms of the potential revenue gains from health insurance. For example, Shaw and Griffin (1995, p. 55) claim that "health insurance is virtually the only practical instrument governments can use to get out of the expensive business of providing across-the-board subsidies for hospital care." And De Ferranti (1985, p. 41–2) says that "there has been recognition of the high cost recovery potential of such schemes, since relatively modest coverage charges, when spread across an entire participant population, can raise substantial revenue."

The evidence from most of the schemes examined, including those in affluent economies such as Korea and Taiwan (China), suggests that cost recovery levels under rural insurance are likely to be limited in most developing countries. Like user fees, insurance should be seen as a way to top up government budgetary funding and to introduce or strengthen management of the health system. In countries where rural schemes are widespread and have been integrated with national health insurance programs, there are substantial government contributions to the scheme, and there are often also substantial copayments.

Government subsidy can be made directly to the provider (for example, in most community-owned schemes the government continues to fund the bulk of service providers' recurrent costs, and revenue from the insurance scheme provides a top up) or be directed to the insurance fund itself (as in Japan, Korea, and Taiwan, China, and is proposed in Thailand).

The preferred government strategy depends principally on the ownership of provider units. In instances where the private sector is dominant, the government subsidizes the fund or poor households buy into the fund. But by contributing directly to the fund, rather than to the provider, governments can help develop effective purchasing power and strengthen fund management.

Government general revenue financing can be used to solve some of the problems associated with rural insurance. For example, it can be used to purchase health services for the poor or to offset regional inequities. Government capacity to do this depends on whether it is subsidizing 15 percent or 65 percent of the population.

Policy framework and operational guidelines. By their nature most insurance schemes are independent local efforts. However, in countries that have had the most success in increasing rural insurance coverage (China, Indonesia, Korea, Thailand) the schemes have taken place within clearly defined policy frameworks and have often benefited from specific operational guidelines (box 2).

The effectiveness of national guidelines in aiding the development of insurance depends on how sensible the guidelines are. In the Philippines pilot projects have been used to help develop national policy and legislation on rural insurance.

Training. Many countries with clearly defined policies and operational guidelines have also developed training packages to help community members manage insurance schemes. Such training packages help ensure that lessons learned by one community are passed on to others. Training packages should cover, among other things, the design recommendations described above.

Ensuring accountability of fund holders. With increased decentralization, particularly the establishment of autonomous health care facilities, there are critical questions about to whom health insurance fund managers are responsible. Where funds are owned by government, cooperatives, or communities these issues may be less pressing, but for funds owned by NGOs and facilities the lines of accountability to beneficiaries may be extremely weak. Government must ensure that fund managers are accountable. In few of the cases examined was this responsibility carried out effectively.

Conclusion

Debate about the potential for rural insurance has provoked quite extreme positions. The diversity of schemes found in the literature means that many of these positions can be supported. While some schemes have operated with com-

Box 2 Guidelines for Indonesia's Dana Sehat community insurance scheme

- The scheme is run by the community for the health benefit of its members. Local institutions (family welfare agencies, village cooperatives, religious organizations) can apply to manage the Dana Sehat.
- Premium payments are supported by local economic activities such as cooperatives of crops, handicrafts, moneylending, and so on.
- Vision, mission, objectives, and program identification should be based on deliberation and agreement among community members.
- The scheme is controlled primarily by its members. The government provides tools and guidelines on how it should operate; community members should monitor these procedures.
- Three different levels of Dana Sehat development have been identified, rising from simple community management of small-scale schemes to large-scale, complex, professionally managed schemes.

Source: Suwandono, Brahim, and Malik 1995.

plex administrative structures, others have had very simple ones. While some schemes have had substantial problems with adverse selection, others have avoided such problems almost completely. While some schemes have devised incentives to promote efficient use of the health care system, others have probably increased inefficiencies in the system. To engage in further discussion about the potential for rural insurance we need terms that distinguish more carefully among different types of schemes and their objectives. The framework presented here is a first step along this path.

Well-designed insurance schemes may have even greater potential for improving health system performance—particularly quality and efficiency—than for raising substantial additional finance. This is particularly likely in poor communities, where there simply is not a lot of extra money available.

Delicate organizational changes—including tighter referral control, contracting arrangements between purchasers and providers, accreditation and service quality improvements, and performance-related pay—all might be introduced under the guise of a shift toward a health insurance system. Insurance should be seen as a supporting strategy, not as an exclusive financing alternative that might close off other options and divert attention from the need to improve

service delivery. In the Bwamanda (Zaire) and CAM (Burundi) schemes, prepayment, subsidy, and fee-for-service elements coexist. Neither user fees nor voluntary prepayment strategies deal adequately with the needs of the poorest people.

Although some rural risk-sharing schemes have been successful, several common failings are evident:

- Schemes in low-income countries have generally achieved limited population coverage
- With few exceptions, cost recovery rates under the schemes are low
- The schemes examined have a limited ability to protect the poorest members of society.

These criticisms are damning since they strike at the most central reasons for promoting insurance—that is, the supposed ability of such schemes to raise significant amounts of revenue in an equitable manner.

Many of the schemes examined suffered from poor design. It could be argued that with better design, some of the core problems identified above could be resolved. Certainly, widely disseminating the lessons of experience may alleviate some of the problems that have been described. But many of the schemes reviewed had extensive external technical assistance from well-informed experts. It would be impossible to widely replicate health insurance schemes for the informal sector and to provide such intensive technical support. The few success stories, such as Zaire's Bwamanda scheme and Nepal's Boboye scheme, demonstrate that it is possible to design and operate a successful health insurance scheme for the informal sector. They do not, however, address the question of whether it is feasible to do so on a widespread basis. The evidence suggests that it is probably not feasible.

The schemes reviewed in this paper were mainly voluntary schemes run by hospitals, communities, or NGOs. Other approaches warrant further exploration. In particular, many of the problems associated with the schemes stemmed from their voluntary nature. More information is needed on both the feasibility and desirability of compulsory schemes. Cooperative and mutual insurance organizations formed the foundations of social health insurance systems in Japan and in many Western European countries. This review unearthed little information on such organizations in developing countries. Finally, few schemes appear to have used exemption mechanisms or premiums that were

graduated according to income or household location. If insurance is to succeed in protecting the poor, then much greater use of these mechanisms will be required.

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Rural Health Care Financing in Thailand

Sirilaksana Khoman

Health care financing has become an issue of global interest and concern in recent years, as both capitalist and socialist countries grapple with rising costs, dwindling resources, poor-quality care, inefficient resource use, and unequal distribution of services. Transition economies in Indochina, Eastern Europe, and China, as well as capitalistic strongholds like the United States, face formidable challenges in determining who should pay for health care and how it should be managed.

In developing countries rural areas are of particular concern because regional disparities in income put rural populations at a disadvantage in terms of living standards and access to health care. Moreover, limited administrative capacity in rural areas makes it harder to manage whatever financing scheme is implemented, especially in areas where large portions of the population are engaged in subsistence activities, cut off from the formal sector.

This paper reviews Thailand's experience in developing, implementing, and at times experimenting with various health care financing schemes, with a focus on projects affecting the rural population. The next section summarizes the disparity between rural and urban areas with respect to health outcomes and available resources. The third section assesses the range of financing schemes that are in place. Schemes that include and affect rural populations are discussed in the fourth section. Finally, conclusions are presented in the final section.

Rural-Urban Differentials

For the past two decades Thailand has been one of the world's fastest-growing economies. But although absolute

poverty has declined, the distribution of income has not improved (Krongkaew 1995). Moreover, rural and urban populations have very different health indicators. Rural populations are afflicted with nearly twice as many poverty-related diseases—such as infectious diseases—per capita as urban populations. The Northeast, the country's poorest region, has the highest incidence of infectious diseases—53.2 cases per 1,000 people, compared with 25.5 per 1,000 in Bangkok. Urban residents have a higher incidence of disease only for endocrine disturbances (such as diabetes) and circulatory diseases (such as heart disease).

Differences in illness patterns are also apparent in hospital admission statistics (Thailand Ministry of Public Health 1995). Among inpatients at government hospitals, digestive disorders are the largest cause of admission in the provinces; in Bangkok the largest cause is malignant tumors.

Infant and maternal mortality rates also show marked differences between the different regions and Bangkok. Infant mortality in the North, Northeast, and South is estimated to be about twice the rate in Bangkok (where it is 18 deaths per 1,000 live births). Similarly, maternal mortality in all regions, particularly the South, is two to four times higher than in Bangkok (where it is 0.1 per 1,000 live births). Since the country's urbanization rate is only 27 percent, with 100 percent urbanization for Bangkok, the regional differences also reflect rural-urban differences.

The Northeast also records the country's highest incidence of first-degree malnutrition, although the situation has been improving over the past ten years. About 25 percent of the Northeast's population aged five years and under suffers from first-degree malnutrition, compared with a

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countrywide average of less than 19 percent (8 percent in the Central region).

Thais prefer physician services to any other form of treatment; 54 percent of sick people seek treatment at health outlets staffed by physicians. Again, however, a rural-urban breakdown reveals that a much higher percentage of the urban population seeks care from physicians. In urban areas 81 percent of sick people have consultations with physicians, compared with 47 percent in rural areas. Moreover, rural populations are almost twice as likely to rely on self-treatment as urban populations (32 percent compared with 17 percent). The behavior of urban residents is almost identical, whether they live in Bangkok or other urban areas (Khoman 1992).

The Ministry of Public Health is the main provider of health services, particularly primary care. It has a network of hospitals at the regional, provincial, and community levels, and health centers at the subdistrict level. Most of the ministry's services are in rural areas, as well as in urban centers besides Bangkok. Almost half of the ministry's annual budget is spent in rural areas, and an increasing share is used for primary health care.

Still, rural-urban differentials in the supply of physicians, hospitals, and hospital beds remain striking. In Bangkok there is one physician for every 958 people; in the Northeast the rate is more than ten times higher (table 1). Moreover, private households, both rural and urban, remain the largest source of finance for health services. The share of total health expenditures coming from households and private companies increased from 63 percent in 1977 to 72 percent in 1986, to nearly 74 percent in 1992 (Khoman and Mongkolsmai 1993).

Financing Schemes

There are four main types of health care financing schemes in Thailand: voluntary health insurance, mandatory schemes, social welfare schemes, and fringe benefit schemes such as health coverage for government officials and state enterprise employees (table 2). The distinction between types of schemes has not always been clear, however, because Thailand experiments with ways to provide its population with secure and accessible health care.

Voluntary health insurance consists of private commercial insurance, which covers about 0.9 million people almost exclusively in the formal sector, and the Health Card Program, which was implemented in rural areas in 1983 as a voluntary scheme. Over the years the Health Card Program has evolved and can now also be considered a kind of social welfare program, since it receives an explicit contribution from the government equal to the contribution of the card purchaser. Coverage is still fairly limited, however, and has fluctuated between 1.3 and 2.7 million people. These fluctuations occurred mainly because of lapses in policy direction, and the often ad hoc way in which the program is implemented (see below).

Mandatory schemes include the Workmen's Compensation Fund and the Social Security Scheme. The recently formed Ministry of Labor and Welfare manages both schemes, which cover workers in firms with ten or more employees. These schemes require extensive record keeping on employment to verify eligibility, and thus are confined to formal sector employees.

The Workmen's Compensation Fund covers job-related injuries and (theoretically) work-induced illnesses. The lat-

TABLE 1
Distribution of medical and public health resources, 1992
(population per unit)

Region	Physician	Dentist	Pharmacist	Nurse	Hospital bed ^a
North	6,316	41,176	24,910	964	
Northeast	10,970	78,211	45,020	1,606	
Central	5,804	29,181	25,854	815	
South	6,079	31,574	21,143	806	
Bangkok	958	4,599	2,142	363	260
Regional average excluding Bangkok	7,326	42,811	29,608	1,050	800
Whole Kingdom	4,425	25,530	13,076	885	666

a. Beds in government hospitals for general services only.
Source: Thailand Ministry of Public Health 1995.

ter, however, are difficult to prove—particularly if adverse health effects are evident only after many years (as is the case with manganese poisoning, silicosis, lead poisoning, and others). Even job-related injuries, particularly if they are perceived as being minor, are underreported if workers are not assertive or well informed, and if the employer is concerned with loss of work time or the hassles of the required paperwork (Kultap 1983). All employers with ten or more employees are required to contribute to the fund.

The Social Security Scheme, implemented under the Social Security Act of 1990, provides health insurance as part of an overall package of benefits designed to provide security to populations not covered by other benefit programs. However, implementation is confined to the most manageable group—employees in formal sector establishments. In its first three years the scheme covered employees in firms with twenty or more employees. Coverage has since been extended to firms with ten or more employees, increasing the population covered to 4.5 million people, or 7.6 percent of the population in 1995. Since this scheme

could be expanded to accommodate rural populations, it is discussed in greater detail in the next section.

The third type of scheme is social welfare programs, consisting of several specifically targeted schemes. First, the Low Income Support Program provides free medical care to poor rural families in government health facilities. The cutoff point for coverage is 2,000 baht per person or 2,800 baht per family per month. In 1992 this program covered 11.7 million people, or about 20 percent of Thailand's population.

Free medical services are also given to the elderly. In 1992 about 3.5 million were covered, and this number is likely to increase considerably in the near future because of an aging population. In addition, the Ministry of Education provides free medical care to primary schoolchildren in schools under its jurisdiction. This program benefits children in both urban and rural areas, but provides proportionately higher benefits for rural populations, who are less likely to have other coverage. More than 5 million children, or about 9 percent of the population, are covered under this scheme.

TABLE 2

Coverage of health care financing schemes, 1992

Scheme	Target population	Population covered	Share of population (percent)	Source of finance	Subsidy per capita
<i>Voluntary health insurance</i>					
Private insurance	Mainly urban	0.9 million	1.6	Insurer	—
Health card	Mainly rural	1.3 million	2.3	Card holder and Ministry of Public Health	63 baht
<i>Mandatory schemes</i>					
Workmen's Compensation Fund	Formal sector employees	1.8 million	3.2	Employers and Ministry of Labor and Welfare	—
Social security	Formal sector employees	2.5 million (1992) 4.5 million (1995)	4.4 7.6	Employers, employees, and Ministry of Labor and Welfare	541 baht
<i>Social welfare schemes^a</i>					
Low-income support	Low-income, mainly rural	11.7 million	20.7	Ministry of Interior	214 baht
Support for the elderly	Population over 60	3.5 million	6.2	Ministry of Public Health	72 baht
Schoolchildren	Primary school children	5.1 million	9.0	Ministry of Education	
<i>Fringe benefit schemes</i>					
Government reimbursement	Government officials and employees and their families	5.6 million	9.9	Government (various agencies)	916 baht
State enterprise benefits	State enterprise employees and their families	0.8 million	1.4		815 baht
Insured population		33.2 million	58.7		
Uninsured population		23.3 million	41.3		

a. Other welfare recipients include veterans, monks, and those deemed needy.

Source: Thailand Ministry of Public Health 1992; Thailand Ministry of Labor and Welfare data; calculated from Hsiao 1994 and Mongkolsmai 1993.

Other welfare recipients include veterans and monks. People who are considered needy (as determined by social workers in government hospitals) are also routinely given free care. In addition, the Ministry of Interior offers free-care cards to low-income urban families.

Finally, health coverage is offered as a fringe benefit in large private companies, government agencies, and state enterprises. About 5.6 million government officials and their families are covered, and nearly 1.0 million state enterprise employees and dependents. Combined, these two groups make up about 11 percent of the population.

Government officials tend to be in middle- to high-income groups. In fact, they receive the largest subsidy from government expenditures on health (see table 2). Such coverage has little effect on rural populations unless they are sufficiently educated to qualify for positions in government agencies or state enterprises.

Altogether, about 59 percent of Thailand's population is protected by some kind of health care coverage—and 41 percent, or 23 million people, is not covered by any scheme. This group includes subsistence farmers, the self-employed, rural workers, and urban dwellers engaged in informal sector activity such as street vending and small-scale commercial undertakings. Those living on the fringes of society (slum dwellers, homeless urban migrants) typically also have to fend for themselves. A survey of Bangkok transients who dwell in makeshift accommodations under bridges and at railway stations found that none was covered by a health scheme (Khoman 1995). Yet they say they are fit and well.

The Ministry of Public Health is trying to expand insurance coverage to slum dwellers, the self-employed, and highly mobile groups such as construction workers, service workers, and prostitutes. Some studies, however, indicate that construction workers and prostitutes have little interest in purchasing any form of health care coverage (Mongkolsmai and others 1994). Prostitutes already visit clinics that treat sexually transmitted diseases, a service provided by most government provincial hospital as the need arises. Construction workers also showed little interest, partly due to the complicated nature of health coverage and the low perceived need. Current research on slum dwellers and transients should provide further insight into this group's willingness to pay for health coverage (Rojvanit 1995).

Health Schemes Affecting Rural Populations

Low-income support

Government policy on providing free medical care to low-income groups was initiated in 1975. The goal of this policy was to reduce the prevailing inequity in access to health services. Known as the Low Income Support Program, it offers free medical care at government hospitals to low-income groups and has become the main health scheme for rural populations.

Coverage initially was limited to people with monthly incomes below 1,000 baht. Upon implementation, the target population was set at 7–8 million people. Until 1980, however, no identification cards were issued, and free care was given at the discretion of health facilities' staff. Since then low-income cards have been issued to eligible citizens, now defined as families with monthly incomes below 2,800 baht and individuals with monthly incomes below 2,000 baht. The cards entitle holders to free medical care at all government health facilities operated by the Ministry of Public Health, the Bangkok Metropolitan Administration, the Red Cross Society, Pattaya City, and municipalities. Cards are valid for three years.

The government provides block grants to health facilities based on the expected distribution of the eligible population and past records of service to patients. Specifically, the budgetary allocation is based on the number of low-income people living in less-developed villages, as defined by the National Economic and Social Development Board. In addition, the number of users of health care facilities is taken into account, and the number of veterans and their families.

The free medical care budget for low-income groups increased from 521 million baht in 1982 to 1,911 million baht in 1993. As a share of the health budget, the low-income budget has ranged from 7.7 percent in 1980 to 7.9 percent in 1993, down from 12.5 percent in 1976. In real terms the budget per patient dropped from 155 baht in 1976 to 45 baht in 1980, stabilizing at around 50 baht over the past ten years. The budget allocated per card holder has been rising, however, increasing from 68 baht in 1984 to 163 baht in 1992.

Still, the budgetary allocation is invariably insufficient to cover the cost of providing services. Satsanguan and Leopairote (1992) report a unit cost of 85 baht for an outpatient visit and 1,200 baht per case or 360 baht per day for inpatient care at district hospitals in 1991. As a result hospitals routinely cross-subsidize low-income coverage using other sources of revenue, such as reimbursements for government officials and hospital fees. The extent of the subsidy varies by hospital. For example, Nan Provincial Hospital in the North reported that between October 1992 and March 1993 the costs of providing care for low-income patients totaled 1.4 million baht a month, while the annual budgetary allocation was 10.5 million baht, or 0.87 million baht a month. Thus the cross-subsidization was about 6 million baht a year (Mongkolsmai 1993). In the province of Samutsakorn the budget allocation was 2.3 million baht while actual expenditures were 5.8 million baht.

The scheme does not require cost sharing on the part of the eligible population and has been subject to much criticism since its inception, particularly with respect to the distribution of the card. A 1980 study by the Ministry of Public Health's Rural Health Division found that 12 percent of the supposedly low-income beneficiaries using provincial and district hospitals and 9 percent visiting health centers had monthly incomes above 2,000 baht. Another study found that about 20 percent of card holders were not poor (Thailand Ministry of Public Health and Faculty of Health Services, Mahidol University 1988). Mongkolsmai and Khoman (1993) also found that some nonpoor families, possibly with connections to officials, possess the card.

The cutoff level used for card eligibility is almost four times the poverty line, defined as the minimum income required for subsistence. Yet in 1988/89, when about 29 percent of the rural population was below the poverty line, the Low Income Support Program covered only 7.65 million people, or just under 20 percent of the rural population. The card covered just 28 percent of the low-income group as defined by the income cutoff level, and 49 percent of the poor as defined by the poverty line. In 1990 coverage improved as a result of expanded efforts to reach targeted groups and increased screening of card recipients. Nevertheless, coverage remains low, with up to 20 percent of those below subsistence still left out (Mongkolsmai 1993).

Even with limited coverage of the poor, however, Thailand still has a safety net that protects the needy, since many low-income people routinely receive free medical care even without a card. In 1987, 13.7 million people received free medical care, but of these only 7.6 million were low-income card holders. The proportion is believed to be roughly the same today, so that people seeking health care can access health facilities without income being a constraint.

Moreover, the Low Income Support Program has probably improved access to health services among the poor. The Northeast has the highest share of low-income card coverage, covering about 30 percent of the population (table 3). And coverage of the poor (those living below the poverty line) increased in all regions between 1987 and 1990, with the largest increase in the Northeast.

The problem that remains is the difficulty of properly identifying eligibility. Given that much of the rural population is engaged in agricultural activity, with a substantial pro-

TABLE 3

Coverage under the Low Income Support Program, 1987 and 1990

Region	1987			1990		
	Population covered (millions)	Share of population (percent)	Share of poor ^a (percent)	Population covered (millions)	Share of population (percent)	Share of poor ^a (percent)
North	1.8	18.8	73.7	2.4	23.4	100.8
Northeast	3.5	20.4	42.3	5.3	30.4	81.1
Central	1.3	11.3	72.6	1.5	12.1	75.7
South	1.0	12.4	45.6	1.5	18.2	84.7
Bangkok	0.0	0.5	14.3	0.0	0.3	8.7
Whole Kingdom	7.6	14.5	49.2	10.7	19.2	81.0

a. Determined using poverty line for 1988/89.
Source: Thailand Ministry of Public Health 1995.

portion of income received in kind, assessing and imputing income is difficult. Defining a household is also problematic in cases where family members work in cities and remit earnings.

Health Card Program

The Health Card Program was started in 1983 to promote maternal and child health. It was an innovative program because it involved selling health cards to villagers who had been accustomed to receiving free care. Card buyers prepaid a fixed annual premium in return for free services. Proceeds from card sales went into a health card fund that was managed by a village committee. Thus the program familiarized rural populations with concepts of preventive behavior, insurance, risk pooling, fund management, and community self-help, though the initial emphasis was on improving health.

The program was initiated in eighteen villages in seven provinces. At its inception the program's primary objective was to improve health among rural populations, with an emphasis on primary care—including health education, environmental health (sanitation and water supply), maternal and child health, family planning, nutrition, immunization, prevention and control of diseases, treatment of common ailments, and provision of essential drugs. In addition, the program incorporated a referral system that required card holders to visit primary care centers instead of tertiary care institutions, so that care-seeking behavior would be more rational and efficient in terms of utilization of health resources. The program was also intended to involve local villagers in self-help as well as in managing the health card fund. Self-help and communal participation were also fostered by recruiting village health volunteers and village health communicators who worked with health personnel at the village health center.

The features of the Health Card Program were constantly adjusted, and policymakers sometimes vacillated over time. At issue were the number of free episodes allowed, the coverage ceiling per visit, the number of family members included, the types of diseases covered, the price of the card, and renewability. In 1983 there were three types of cards: a family card priced at 200 baht, a maternal and child card priced at 100 baht, and an individual card priced at 100

baht. Each card was valid for a year. The family card allowed eight illness episodes a year for four family members; the individual card allowed four illness episodes. To prevent against moral hazard behavior, ceilings were imposed. Coverage was limited to 1,000 baht for accidents, with a 10 percent discount for amounts over 1,000 baht. Chronic diseases, cancer, and "self-inflicted" diseases were excluded. Card holders who had not used the card in one year were entitled to renew it without charge for an additional year, not exceeding two renewals.

In mid-1984 the ceiling was raised to 2,000 baht per visit. A strict referral system was also enforced whereby initial contact had to be with the village drug fund, and subsequently the health center in the subdistrict, the community hospital at the district level, and finally the general or regional hospital at the provincial level. This approach was intended to increase efficiency in the use of different levels of health services, since over-utilization of high-level hospital care was occurring because villagers routinely bypassed the health centers in favor of physician services.

From the outset, the health card fund was designed to be a village-level fund in order to foster grassroots participation and management skills. Of this fund, 15 percent was allocated to the health center, 30 percent to the community hospital, and 30 percent to the regional or provincial hospital, reflecting the pattern of utilization in the referral system and the severity of illness and cost to the provider. Of the remaining 25 percent, 10 percent went to personnel in the provider institutions and 15 percent was used as operating expenses of the fund.

The Health Card Program later gave more attention to medical treatment, and the price of the family card was increased to 300 baht.

During 1985–90 some health card funds were initiated at the district and subdistrict levels: a 300 baht family card, a 100 baht maternal and child card, and a 200 baht individual card. In addition, the number of episodes allowed was cut from eight to six.

Confusion arose about the different types of cards, the terms and conditions of use, the losses incurred due to the inability of hospitals to recover costs from the health card fund contribution, and the problems with the strict referral system, which tended to disregard geographical proximity. Tantisserani (1988) found that the Health Card Program was

active in about 33 percent of the villages and 70 percent of the subdistricts in 72 provinces, with about 2.7 million people holding about 550,000 family cards. A 1992 survey by the Ministry of Public Health found that coverage had extended to 36 percent of the villages, but the population covered was reduced to 30 percent of the subdistricts in 68 provinces, with 1.3 million persons holding 260,000 family cards.

This reduction in coverage has been attributed to the ministry's lack of policy direction during this period (Kiranandana 1990). The program was implemented in an ad hoc manner and thrived only in provinces that actively encouraged villager participation. Moreover, the program was never lucrative for large hospitals, and had to be subsidized by other sources of hospital revenue.

In 1990 the health card scheme was modified and renamed the New Health Card Approach, which emphasized the concept of risk sharing. Price restructuring (ranging from 200 baht for the individual card, and from 300–500 baht for the family card, covering up to three generations) occurred in five provinces (Manopimoke 1995). In addition, the referral system was relaxed and coverage was expanded, with unlimited numbers of free visits and no coverage ceiling per visit. About 20 percent of the population in the selected areas participated in the project.

In 1991 the different types of cards were discontinued, with only family cards (priced at 500 baht) offered. Since 1994 the Ministry of Public Health has provided an equal contribution of 500 baht per card. In addition, no limits are imposed on the number of episodes or the cost coverage per visit. Moreover, more flexibility was built into the referral system, and each province could impose whatever conditions it deemed appropriate. Some provinces, such as Rachaburi, allow card purchasers to pay in installments (Mongkolsmai and others 1994). Administrative changes were also implemented, with the health card fund managed by a committee at the district level in coordination with village-level bodies. This approach was intended to expand the enrollment base beyond the village to the district level. In addition, 80 percent of the card price now goes to providers of medical care, while the remaining 20 percent is retained for marketing and sales incentives.

The health card is likely to be used to expand coverage for people who currently lack insurance. Studies are being undertaken to ascertain its feasibility in urban areas as well.

Social security

The Social Security Act of 1990 provides health insurance as part of an overall package of benefits covering illness unrelated to work, maternal benefits, disability unrelated to work, death, child benefits, old age, and unemployment. Companies with ten or more employees and employees themselves are each required to contribute 1.5 percent of the employee's wages to the Social Security Fund, with an equal 1.5 percent provided by the government. Since the contribution is based on income and not the expected risk or incidence of illness, risks are pooled and benefits are skewed in favor of high-risk individuals.

Of this contribution, 2.45 percentage points is used to provide medical care for the insured for illness and maternity and 2.05 percentage points are used for disability and death benefits. Expanding benefits to include child and the elderly would require an increase in the contribution, and so has been postponed. Unemployment benefits will be implemented at a much later stage for fear of moral hazard behavior—that is, providing unemployment benefits could induce unemployment.

As noted, social security is mandated for the most manageable group, namely employees in formal sector establishments with ten or more employees. The scheme covers about 4.5 million workers, or 7.6 percent of the population.

The Social Security Act also provides for expansion of the scheme on a voluntary basis to include the self-employed, such as farmers, own-account workers, and other uninsured groups. However, this provision was probably included for political expediency to protect against charges that the program only covers the well off. Even if the self-employed were allowed to participate, the problem remains of how to deal with their contribution. Thus the program has been proposed as a practical form of coverage for the self-employed, but Thailand is still experimenting with this idea.

A more immediate concern is the current system of providing medical care. Insured workers are required to register at a specified hospital, called the "main contractor," where they receive free medical care (except for certain types of treatment, such as cosmetic surgery and optometry). These restrictions are similar to those under the Health Card Program. The main contractor receives an annual prepayment or capitation fee from the Social Security Fund,

initially equal to 700 baht per insured person registered, regardless of actual utilization. Capitation was chosen over a fee-for-service payment scheme (to providers) for its administrative simplicity and to prevent the cost escalation that invariably occurs with fee-for-service payments. The Workmen's Compensation Fund, for example, pays hospitals on a fee-for-service basis, and has incurred substantial cost escalation, as well as the administrative burden of dealing with massive claims documents. Capitation, however, may not be attractive enough to induce medical providers to enroll in the scheme. The relative merits of alternative payment methods are summarized in table 4.

The main contractor is able to contract with subcontractors, which provide lower levels of care, as well as with supracontractors, which provide higher levels of care. Both public and private hospitals participate in the scheme. One of the main problems with the scheme is confusion with respect to insured persons receiving care in hospitals in which they are not registered. Accident victims, for example, made headlines when they were allegedly denied treatment by noncontracting hospitals.

At first employers chose the main contractor, which may explain low utilization in the first year of the scheme's implementation. In 1991 the utilization rate for outpatient care

was 0.32 visits per insured person per year, and in 1992 the rate dropped to 0.22 visits. In calculating the capitation fee, it was estimated that there would be 3.0 visits per insured person per year. Inpatient utilization was also lower than expected; in 1991 and 1992 the utilization rate was 0.016 and 0.012 visits per insured person per year. The estimated utilization rate was 0.05 visits.

Apart from the inconvenience of workers receiving care at a hospital they were not able to select, and the limited number of participating hospitals to choose from, several other problems emerged. Many workers were ignorant of their rights, some were not aware of the contributions they made to the Social Security Fund because of automatic deductions from their wages, and many did not understand the procedures that had to be followed to obtain medical care (Patichon 1995). Further, providers of medical care were not prepared to manage the scheme in terms of health care delivery. As a result efforts have been made to improve the delivery system and the quality of care so that insured persons have better access to the care to which they are entitled.

Specifically, the Social Security Office issued a policy directive in 1992 to grant insured persons the right to choose their own hospital. This policy was implemented

TABLE 4

Strengths and weaknesses of alternative methods of paying health providers

Payment method	Strengths	Weaknesses
Fee for service	Provider's reward closely linked to level of effort and output Allows for easy analysis of provider's practice	Tends to cause cost inflation Requires processing and verification of massive numbers of claims documents Creates incentive for excessive and unnecessary treatment
Per case (for example, using diagnostic-related groups)	Provider's reward fairly well tied to output Gives provider incentive to minimize resource use per individual treated	Technical difficulty of forcing all cases into standard list can lead to mismatch between output and reward Providers may misrepresent diagnosis in order to receive higher payment
Capitation (per patient under continuous care)	Administratively simple; no need to break down physician's work into procedures or cases Facilitates prospective budgeting Gives provider incentive to minimize cost of treatment Allows for consumer clout if patient can select own provider	Gives provider incentive to select patient based on risk and reject high-cost patients May create incentives for provider to underservice accepted patients Difficult to analyze provider's practice
Salary (straight payment per period of work)	Administratively simplest Facilitates prospective budgeting	Loss of patient influence over provider behavior unless patient choice links provider salary to patient satisfaction Can easily create incentives for provider to underservice patient and to reduce productivity

Source: World Bank 1993.

in one province in 1992 and expanded to nineteen and forty-four provinces in the following two years. The policy is being implemented in sixty provinces at present. As a result the portion of insured persons choosing their own hospital increased from 2 percent in 1992 to 37 percent in 1995.

The Social Security Office is also encouraging the formation of provider networks to increase efficiency in health care delivery, improve accessibility of services (particularly if network members are geographically dispersed), and pool risks. Moreover, additional payment is given to the main contractors in proportion to the inpatient and outpatient care that they provide. Thus medical providers have an incentive to increase their market share and engage in marketing for contracts with workers. As a result the number of main contractors increased from 137 in 1991 to 1,879 in 1995. Among private providers, the number of network members increased from 69 in 1992 to 620 in 1995. In the public sector the increase has been more moderate: from 671 in 1991 to 1,257 providers in 1995. The switch from public to private hospitals has also been increasing. In 1991 only 16 percent of insured persons chose private hospitals, but by 1994 that share was 59 percent.

Two patterns of network formation are used. The first is a direct contract network, in which the main contractor contracts directly with network members and assumes responsibility for managing the capitation fee received from the Social Security Office and acting as a "secondary medical care provider." The second is an indirect contract network, in which the main contractor transfers the capitation fee to a network office responsible for managing the funds received from several main contractors. The network office is also responsible for marketing and recruiting network members. In the second case the main contractor is responsible for medical services only.

In practice, however, there is considerable confusion in the system, with great variation between networks with respect to network coverage of the three levels of care (subcontractor, main contractor, supracontractor), ability to manage funds and the payment mechanism to encourage cost containment and foster financial feasibility for the network, quality and standard of medical services provided by the networks, and coordination between networks and network management at the national level.

There is also evidence of abuse. That is, the medical providers that some networks have recruited are so far apart—in some cases, providers are in provinces separated by several hundred kilometers—that insured persons have few opportunities to use them. Providers can claim the additional payment that is calculated on the basis of services provided, but these services are provided to different people, and the insured person does not benefit from the apparently wide range of providers available. These problems are being studied and further adjustments made to the system.

Conclusion

The basic issue with respect to financing health care involves determining how much of a country's resources should be devoted to health services, how much should be spent by the government, and how much reliance should be placed on private sources of finance. The main questions are: Who should pay for the cost of providing services (recipients through user charges, government through subsidies, or other funding sources such as private business, collective bodies, and charitable organizations)? How should health care be organized? And what role should financial intermediaries play?

In Thailand various schemes are used to address these issues. Some overlap, covering the same population, while other population groups are left unprotected. There are also differences between the benefits that can be obtained under each scheme. Some schemes, such as the fringe benefit scheme that covers government officials and the Workmen's Compensation Fund, pay for health care on a fee-for-service basis. Others, like the social security scheme, use a capitation method of payment. Some schemes, such as the social security scheme and the Workmen's Compensation Fund, are compulsory. The Health Card Program, on the other hand, is voluntary, and raise questions of adverse selection. Some schemes require copayments from beneficiaries, while others restrict the types of services covered.

Some schemes, such as the Low Income Support Program and coverage for veterans and the elderly, require no direct contribution from beneficiaries. Others, such as the health card and social security, require explicit contributions. Government subsidies exist for most schemes, some in terms

of explicit budgetary allocation (such as for veterans, the elderly, low-income groups, social security, and the health card). Implicit government subsidies also pervade the public health system through the pricing of services at government hospitals, giving different benefits to different types of users (Khoman 1995).

Although some schemes were designed specifically for the rural population, the distinction between the formal and informal sectors is even clearer. In fact, many groups in the informal sector are excluded from existing schemes.

There is little coordination between schemes, and Thailand will have to figure out how to ease the discrepancies in financing. Different schemes contain varying elements of subsidy, and could cause the allocation of resources to worsen between urban and rural areas. All these aspects must be considered as Thailand continues to make adjustments to increase efficiency and equity in health care financing.

Some lessons can be drawn from Thailand's experience, however, particularly in terms of the types of financing schemes that are viable in rural or informal sector settings and the preconditions that are required for such schemes to succeed. Among other things, given the problems of assessing incomes in areas dominated by semi-subsistence or informal sector employment and the need to avoid creating excessive fiscal burden, a workable system could be based on some form of community financing, such as the Health Card Program. But certain preconditions must be in place for such a scheme to get off the ground.

The most important of these preconditions is sufficient social capital. The concept of social capital stems from the recognition that social actions and the development of social organizations—such as a community health scheme—depend on expected mutual benefits that are affected by social norms and obligations within a community. Social capital is accumulated through the coordination and cooperation of members within social structures such as families, associations, clubs, and communities. The closer a community is, the stronger are the norms that require compliance; and the more stable a community is, the stronger is the likelihood of social capital accumulation. Moreover, social structures that are well-endowed with social capital are more amenable to collective action. Yet the small number of members required for community trust and cohesiveness—the building blocks of social capital—is less

conducive to risk pooling, which requires a large number of members. Thus the second precondition is government initiative and partial subsidy. This is the course that the Health Card Program has taken, and even though it has been beset with problems, it is nevertheless a viable scheme to start off with in a rural community.

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Market-Based Reform of U.S. Health Care Financing and Delivery: Managed Care and Managed Competition

Alain C. Enthoven

The U.S. health care financing and delivery system is undergoing a profound and rapid transformation from a model characterized by fee-for-service payments, indemnity insurance coverage of completely free choice among providers, and a fragmented and nonaccountable delivery system, to a model made up of competing, integrated, accountable comprehensive care systems generically known as *managed care*. This transformation is not being driven by public policy, which for the most part has been protective of the status quo. Rather, it is being driven by consumer and employer choice and market forces in the private sector.

Indeed, the large government health care programs—Medicare (the federal government's program for the elderly and the disabled), Medicaid (the federal and state governments' programs for some of the poor), and the Veterans Administration Health System—have barely started the transformation and will be the last to complete it. (In July 1994 just 7 percent of Medicare beneficiaries and 8 percent of Medicaid beneficiaries were in health maintenance organizations; InterStudy 1995; *Health Care Financing Review* 1996) The health maintenance organization (HMO) represents the more advanced type of managed care. (HMOs are defined below.) In 1980 about 9 million Americans were enrolled in HMOs. At the end of 1996 about 65 million were, and the number is growing by about 12 percent a year. Preferred provider insurance, a minimal form of managed care, almost did not exist in 1980. Today, it covers about 90 million Americans. The traditional model of indemnity insurance, characterized by a lack of any contractual relationship

between insurer and provider, is quickly disappearing. This paper describes the traditional system as a point of departure and as a point of contrast to the new system. It then describes the emerging paradigm of managed care and managed competition.

The Traditional System and Its Consequences

The traditional U.S. health care system was the product of interactions among different groups pursuing their own interests without any overarching public policy to guide them or general agreement on the goals of the system. As a result the system ultimately became an example of profound and multifaceted market failure.

Natural market failure

The market failure began with what might be called natural or inherent market failure. As Arrow (1963) noted, the incidence of illness and the efficacy of treatment are very uncertain, creating a natural desire among risk-averse people to insure against large and unpredictable medical expenses. But with insurance comes moral hazard—that is, insured people become unconscious of the costs of the care that they receive. Over time the prices and standards of U.S. health care adapted to a market of cost-unconscious patients. Information on medical conditions and their treatment is costly, and doctors and their patients have very different amounts of it. Patients depend on their doctors for

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advice and for treatments, and doctors, having a financial interest in treatment decisions, are imperfect agents.

Complicating matters, different people have very different medical needs. In a voluntary market for health insurance, the healthy do not want to be pooled with the sick. And pooling arrangements can be exploited by insurers selectively offering products that are more attractive to the healthier members of the pool, effectively isolating the sick from affordable coverage. Finally, in the U.S. mixed but partly free market for health insurance, there is a safety net in the form of county hospitals, laws requiring hospitals to evaluate and stabilize uninsured patients who appear at their doors, and a great deal of free care given by doctors and hospitals. Moreover, health care coverage has become costly relative to the incomes of many low-income people. In a voluntary system of health insurance these problems encourage “free riders.” As a result about 40 million Americans now have no health insurance (Employee Benefit Research Institute 1996).

“Guild free choice”: Doctor-created market failure

These market failures were compounded by a system of health care finance and organization created and enforced by the medical profession, a system characterized by Weller (1984) as “guild free choice.” The principles of the medical guild, in the United States and other countries, had several defining features:

- *Free choice of provider*—meaning that every health insurance plan let every patient freely choose among doctors and hospitals for covered services without discrimination. This approach destroys the bargaining power of insurers: they cannot tell doctors that their enrollees will not be covered for the doctors’ services if the doctors do not agree to price and quality controls.
- *Free choice of treatment*—meaning no practice guidelines or quality management.
- *Fee-for-service payments*—meaning that no outside entity can control doctors’ incomes. Doctors could always earn more by doing more, regardless of whether more was necessary or beneficial to the patient.
- *Direct negotiation of fees between doctor and patient*—meaning that if patients are in pain or worried about their health, depend on the good will of their doctor, and

lack information on the quality, price, and treatment patterns of other doctors, they are unlikely to be able to negotiate with their doctor as an equal.

- *Solo practice*—meaning that multispecialty group practice was resisted because such a group could break the seamless web of mutual coercion (through referrals) that the profession used to maintain the guild model. Moreover, group practice introduced an important element of quality management through peer review. Doctors who deviated from the solo practice model were denied hospital staff privileges, medical society membership, and referrals. From the 1940s through the 1960s, what we now call HMOs were few in number and comparatively small, and experienced intense opposition from organized medicine (Weller 1984).

The enforcement of these principles prevented the development of an ordinary economic market in which alternative approaches to cost-effective care could develop (Stephan 1978).

Other human-made market failures

These market failures were reinforced by the behavior of employers and of organized labor. Most Americans who are not retired, disabled, or poor get health insurance through their employers (Employee Benefit Research Institute 1996). From the 1940s through the 1970s (and even beyond), most employers offered their employees no choice of health insurance plan. It was an uphill battle for HMOs to persuade employers to offer them. Employers saw no advantage to offering a choice among plans and preferred to stick with the fee-for-service model. Employers that did offer choices typically paid in full the cost of the fee-for-service plan, depriving employees who chose HMOs the economic rewards of choosing a more economical health plan.

Employers avoided HMOs because their premiums were often higher, since in most cases HMO coverage was more comprehensive than fee-for-service coverage (including doctor office visits, preventive services, and the like). The financing system created open-ended demand and a perpetual shortage of doctors, so HMOs did not have much bargaining power when it came to doctor incomes. Organized labor saw comprehensive health insurance coverage as a bargaining prize and demanded that employers pay the full cost

of fee-for-service coverage. Trade union leaders acted as if they believed that health insurance premiums came at the expense of employers rather than wages. Employers and labor failed to see health services as a purchasing problem in which they had a common interest in getting value for their money. Moreover, most employers were too small to spread risks and serve as effective purchasers of health care coverage. Market failure is particularly severe in the market for small employment groups and individuals.

Insurance carriers compounded the market failure, using marketing strategies and "product design" to try to select the best risks or to avoid the worst risks. They differentiated coverage contracts in an attempt to create inelastic demand by segmenting markets and making it very costly for consumers to compare value for money and to switch insurance plans.

Finally, government was a major contributor to market failure. First, federal and state governments excluded (without limit) employer contributions to employee health insurance from the taxable incomes of employees. Thus employers and employees had a strong incentive to agree on more, rather than less, costly insurance plans (Enthoven 1984 and 1985). Medicare and Medicaid were frozen in the "guild free choice" model from which they are only now beginning to emerge. Until 1983 Medicare paid hospitals for inpatient services on a retroactive basis. Some U.S. states and the federal government passed laws requiring that all insurance contracts cover the services of providers who sought protection from the legislatures (for example, insurers in Rhode Island must cover pastoral counseling), even though competent buyers and sellers would have preferred less costly coverage that did not include those services. And finally, the federal government generously subsidized the expansion of medical schools and hospitals and the training of specialists far beyond what was needed, and academic health centers became important protectorates for some members of Congress.

Consequences of market failure

The result of these market failures was that, although health care is the joint product of many components (doctors, hospitals, laboratories, pharmacies), the U.S. health care system was fragmented. Patients depended on doctors and

hospitals for care that might appropriately occur in various settings, but the different providers were paid out of separate accounts, and there was no management control or responsibility to see that the pieces were put together effectively or economically. The system was nonaccountable. Providers could waste resources or make decisions that were bad for the quality of care without negative consequences. There was no contractual link between providers and third-party payers. (The patient was the first party, the provider the second, and the payer the third.) Except for a few HMOs, no one was responsible for linking resources to the needs of the population served. The government created health systems agencies that were supposed to do comprehensive health planning at the community level, but no one knew how to do health planning; the agencies could not overcome the cost-increasing incentives described above, and they were ineffective (Enthoven 1980). Hospitals were largely independent nonprofit organizations that competed for doctors by offering more advanced technology and convenience. (Such competition was referred to as the "medical arms race.") The links between doctors and hospitals were weak. Many doctors practiced in two or three hospitals and played them off against each other.

Information on treatments and costs was decentralized to the local care site. Doctors had records of what went on in their offices, hospitals had records of what went on in the hospital, pharmacies had records of prescriptions, and so on. But outside of HMOs, nobody had access to the complete picture. Outcomes were rarely systematically followed outside the context of a few studies. In the absence of comprehensive longitudinal records that stored information on all the treatments a patient had received, there was no way to link outcomes to treatments.

One consequence of this system was cost-unconscious (or inelastic) demand. Providers had incentives to resolve all doubts about care by doing more. A phenomenon developed known as "physician-induced demand"—that is, where there were more surgeons per capita there was more surgery per capita, unmediated by a reduction in price. Because of their superior information, physicians could shift the demand curve for their services (Fuchs and Kramer 1972, Fuchs 1978). Providers had little responsibility for quality or cost. There were, and remain, wide variations in medical prac-

tice. Wennberg and Gittelsohn (1982) found tenfold variations in the incidence of medical practices with no measurable difference in need or health outcomes. This finding suggests that many people are being overtreated or undertreated.

Another consequence was too many hospitals and beds, too many specialists, and too many specialized facilities. For example, California has 120 hospitals that perform open-heart surgery, half of them with annual volumes of fewer than 200 cases. There is also a great deal of inappropriate care. Winslow (1988) found that about one-third of the carotid endarterectomies performed in the United States were inappropriate—that is, the patients would have been better off without them. There was little effective quality management. And by 1994 U.S. spending on health care accounted for 13.7 percent of GDP, far more than any other country (Levit and others 1996). This level of spending seriously strains public finances, and puts health care coverage out of reach for many families of moderate means.

Managed Care and Managed Competition: Correcting Market Failure and Getting the Incentives Right

Managed care and managed competition are strategies used by the purchasers of health care services to:

- Create health services delivery organizations capable of acquiring appropriate health care resources, obtaining value for money, deploying the resources to care for enrolled populations, designing and executing care processes that produce good outcomes and value for money, and measuring and monitoring performance (outcomes, satisfaction, and cost) and continuously improving it (that is, managing care).
- Develop a framework of incentives for such organizations to improve quality and lower costs.
- Use market forces to transform the health care delivery system from its fragmented, nonaccountable mode to efficient, integrated, comprehensive care organizations constantly striving to improve (Enthoven 1988 and 1993a).

In brief, managed care organizations are the players on this field, and managed competition refers to the rules of the game in which they play.

Managed care: Organizing the supply side

The main origins of managed care in the United States can be traced to several sources. First, there was the prepaid group practice movement, whose foundations were laid in the years after World War II with the creation of the Kaiser Permanente Medical Care Program and Group Health Cooperative of Puget Sound (Somers 1971). Kaiser Permanente was the direct descendant of the medical care programs organized in the 1930s and 1940s to care for workers in Henry J. Kaiser's industrial enterprises. These nonprofit organizations combined multispecialty group practice, per capita prepayment, voluntary enrollment, and physician responsibility for the management of care. These organizations are described in greater detail later in this paper.

Second, in some communities in which prepaid group practices were successful and growing, doctors in fee-for-service solo practice were feeling competitive pressure. They formed individual practice associations through which they could offer patients the financial equivalent of the prepaid group practices while continuing to practice in their own offices and also see patients with traditional insurance. (These associations became humorously known as "defensive alliances against Kaiser.")

The term *health maintenance organization* was coined in 1970 by Dr. Paul Ellwood as part of a national strategy to solve America's problems of uncontrolled health expenditure growth, fragmentation, and lack of accountability by fostering competition among nongovernmental comprehensive care organizations (Ellwood, Anderson, and McClure 1971). In 1973 Congress passed the HMO Act, which defined HMOs as being of either the group practice or individual practice variety; provided grants and loans to help start nonprofit HMOs; required that employers with twenty-five or more employees that were offering traditional insurance offer to their employees the choice of one group practice and one individual practice HMO as alternatives to traditional health insurance (if such HMOs served the areas where their employees lived and asked to be offered); and overruled state laws that inhibited HMO growth. This act had an important effect in opening the market to competition.

Seeking to bring soaring health care costs under control, some employers wanted to be able to offer their employ-

ees health insurance based on selective provider contracting—that is, insurance that resembled the traditional model, except that employees would be offered preferential terms of coverage if they used contracting providers. Such contracting enabled employers and insurers to negotiate prices and utilization controls with providers. But until 1982, in compliance with the principles of “guild free choice,” this kind of insurance was illegal under the insurance codes of most states. In 1982, in a major legislative battle in California, employers, insurers, and labor unions joined forces to defeat the California Medical Association and secure the enactment of new legislation allowing insurers to contract selectively and pass the savings on to the insureds. Most other states followed. This move authorized preferred provider insurance, the other form of managed care.

Essential principles of managed care. Managed care has four essential principles. The first is selective provider contracting. Insurers can select providers for quality and economy. Quality is important because employers care about the health and satisfaction of their employees (or, if they do not, trade unions are likely to), insurers care about their reputations, and mistakes cost money. More often than not, quality and economy go hand in hand. Providers are also chosen for their willingness to cooperate with a managed care organization’s quality and utilization management programs, and its reporting requirements.

The second principle is utilization management. This varies from the crude to the sophisticated. For example, some managed care organizations have retained actuarial consulting firms to develop guidelines on how long various inpatient cases should remain in the hospital, and these guidelines are translated into limits on what the insurance will pay. Many managed care organizations employ “primary care gatekeepers”—primary care physicians who control referrals to specialists. Many managed care organizations dealing with doctors from the fee-for-service sector (who are thought to be overutilizers) require preauthorization before a nonemergency patient can be hospitalized. A managed care insurance contract may include a deductible for hospitalizations that is waived if the patient obtains authorization. Some managed care organizations employ utilization management nurses to check on the hospital inpatient’s condition and plan prompt discharges (a process known as

concurrent review). A more advanced form of utilization management is based on the recognition that medical uncertainty is often great and practice variations are wide. Teams of physicians study particular medical conditions, review the medical literature, analyze their own data, and recommend practice guidelines based on consensus within the team. These guidelines typically reflect the least costly way of achieving the best possible outcomes.

The third principle is negotiated payment. The basic idea is to trade patient volume for better prices. Compared with the usual fees in the fee-for-service system, managed care organizations typically obtain discounts of 20 to 40 percent. These negotiated payments often include some bundling of services—for example, all-inclusive payments per inpatient day (for different types of patients) or per inpatient hospital case.

The fourth principle is quality management. For example, a managed care organization is likely to survey patient satisfaction. They may reward providers who score well with bonuses, and may not renew contracts with providers who score poorly. Sophisticated managed care organizations will attempt to measure outcomes of care or performance of processes of care and report them to consumers and purchasers.

Preferred provider insurance: Minimal managed care. Preferred provider insurance is the form of managed care most like the traditional model. (*Preferred provider organization* is sometimes used to parallel the better-established *health maintenance organization*.) In most cases such insurance is not provided by medical care organizations; rather it is provided by insurance companies that contract with large numbers of providers that are not otherwise related (Boland 1985).

The typical preferred provider insurer contracts with a large number of doctors, hospitals, laboratories, home health agencies, and the like. It creates incentives for insured patients to choose contracting providers. For example, the insurance contract might pay in full for the services of contracting providers, but pay only 80 percent of what it would have paid contracting providers for the services of noncontracting providers; the patient must pay the rest. The insurer negotiates discounted fees, and the provider agrees to accept those fees as payment in full from contracting

patients. Finally, the insurer adopts utilization management tools such as preauthorization for hospital admissions, length-of-stay guidelines, review of provider credentials, and so on.

Some preferred provider insurers cover comprehensive health care services. Others specialize, focusing on a subset of comprehensive services such as mental health, pharmacy, cardiology, or radiology. These specialized insurers serve as subcontractors to insurers that cover comprehensive services. They can offer greater detailed knowledge of their specialty. And they may contract with several insurers that cover comprehensive care and subcontract the components.

Preferred provider insurance often serves as an important part of the transition from the traditional unmanaged fee-for-service system to the HMO that uses per capita prepayment instead of fee-for-service. A group of doctors may begin with a discounted fee-for-service contract, acquire experience on which they can base a per capita payment, and eventually convert to per capita prepayment (see below).

Health maintenance organizations. A more fundamental change from the traditional system is represented by health maintenance organizations (HMOs). The term *health maintenance organization* was originally used to describe prepaid group practice, the main example of which was Kaiser Permanente. It subsequently was applied to individual practice associations. Now the term is used to describe a remarkable variety of organizations. Some are based on multispecialty group practices, some on doctors in individual practice, and some on both. Some are merely insurance carriers that comply with the regulatory definition of HMO.

In general, an HMO is a health insurance carrier that covers a comprehensive list of health care services: physician and hospital care, laboratory testing, diagnostic imaging, and usually prescription drugs. The coverage provides for nominal copayments at the point of service—for example, Stanford University employees pay \$10 per doctor office visit, but there is no deductible and no limit on the amount the HMO will pay for necessary acute care. Copayments are not supposed to be so large as to constitute a barrier to care. The HMO is supposed to control costs by managing care, not by imposing deterrent fees.

The HMO contracts with employers and individual subscribers on the basis of per capita prepayment—that is, all the medical care the patient needs for a periodic per capita payment fixed in advance and independent of the person's actual use of services. Thus the HMO bears the full risk for the cost of medical care. The amount and type of risk sharing with providers vary widely. But in most cases the HMO shares risk with providers, explicitly or implicitly. An explicit risk-sharing arrangement might be a contract with a medical group to provide all necessary professional services for a fixed per capita payment. An implicit risk-sharing arrangement might pay individual doctors on a discounted fee-for-service basis, but the HMO keeps track of the per patient costs of each doctor, adjusted for age, sex, and possibly diagnosis. Doctors whose costs consistently exceed norms might find themselves receiving extra counseling on practice patterns, or not have their contracts renewed.

There are now many HMO models, as the competitive marketplace has motivated a great deal of innovation in the search for better ways to organize and finance medical care. Historically, the first main category of HMO included prepaid group practice and “staff model” HMOs. Under the prepaid group practice model HMOs are based on a medical group that contracts with the HMO. The medical group accepts the risks of costs of care and usually rewards the partners if the group is successful in managing costs. Under the staff model the doctors are salaried employees. Though the two models are usually grouped together, there is a difference. The doctors in the group model are more likely to see themselves as part owners of the enterprise and feel more responsible for its success. These are HMOs “from the ground up.” They attempt to organize comprehensive care systems. Their doctors care exclusively for patients enrolled in their affiliated health insurance plan. And they generally care for patients in HMO-owned or -leased facilities. The prepaid group practice model has been much more efficient and effective than the fee-for-service model, and in some states (California, Massachusetts, Minnesota, Oregon) its role was to force fee-for-service providers to join network and individual practice association models to compete.

The second category of HMO includes the network and individual practice association models, which contract with

former fee-for-service providers and enable them to compete with the group and staff models. In these models independent medical group practices and individual doctors contract with insurance carrier HMOs to see the patients enrolled with those carriers, while also continuing to see patients enrolled in traditional insurance, Medicare, Medicaid, or other or no coverage. The doctors continue to practice in their own offices. The medical groups are paid on a per capita basis for professional services under contracts that include incentives for efficient hospital use. A typical contract might provide a fixed monthly amount per enrolled person for professional services plus a risk-sharing arrangement for hospital costs. Individual doctors are paid negotiated fees for services, given incentives for economical behavior, and are usually monitored for the economy of their practice patterns. A typical contract might pay primary care doctors 80 percent of their fees soon after delivery of services, with the other 20 percent withheld to ensure that enough money is left in the pool. At the end of the year the doctors are paid in proportion to their billings if there is money left over. In addition, the pool of primary care doctors may share in the savings from efficient specialist referrals and hospital use.

The trend in these models is toward more integrated systems of care (see below). The original individual practice associations were sponsored by county medical societies and included every fee-for-service doctor who wanted to participate. Today's individual practice associations select doctors and drive hard bargains with them. For example, U.S. Healthcare, founded in Pennsylvania, is based on doctors in individual practice. It selects a panel of participating primary care doctors, evaluates them continuously (through surveys of patient satisfaction, reviews of sample records and referral patterns, office inspections, and so on), and pays them an age- and sex-adjusted capitation fee for primary care services. Good performers win cash bonuses; poor performers are dropped from the program. U.S. Healthcare contracts with selected specialists on a discounted fee-for-service basis, and gives primary care doctors as a group a financial incentive to control specialist referrals.

HMOs translate the broad incentive of capitated payment into payment to doctors in a great variety of ways. Some pay salaries. Others pay salaries with bonuses for productivity, patient satisfaction, and overall economic success. Others pay various forms of fee-for-service with manage-

ment controls. HMOs are empirically tuning their methods to find what works in their marketplaces.

A third category of HMO that is only just beginning to emerge is called the *physician-hospital organization*, in which one or a group of hospitals team up with their medical staffs to offer subscribers comprehensive health services on a per capita prepayment basis. Physicians and hospitals are motivated to do so by what appear to them to be the large profit margins of for-profit HMOs, and by their perceptions of the way that they are treated by them. Such organizations reflect a desire by providers to control their own destinies. Thus, in principle, managed care could be introduced into a country without a health insurance industry.

Of course, physician-hospital organizations will find that they need to develop functions and capabilities that are usually associated with insurance companies, including the ability to enroll members, collect premiums, set prices on their services, make actuarial estimates of the costs of caring for different groups, make arrangements for covered services that are beyond their capabilities (for example, to contract with national or regional centers for advanced care), provide coverage for enrolled members when they are outside the organization's direct service area, and reinsure exceptional medical costs. And they will need financial reserves to cover unplanned losses. Thus the physician-hospital organization ends up creating (or partnering with) an insurance company.

Managed care, especially the HMO, requires a change in patterns of access to doctors, from complete free choice to choice from among the managed care plan's contracting providers. People who are used to the traditional system often do not understand this change and the reasons for it. However, experience in California and other states with high penetrations of managed care shows that people eventually get used to the new pattern. Surveys by large employer coalitions in California report that employees are highly satisfied with some HMOs.

When they are seriously ill, some patients want to be able to go to a famous regional or national referral center and take their insurance with them. And they often do not understand why they cannot. The comparatively free market for managed care in the United States has generated an innovation to address such concerns: a new kind of insurance plan called the "point-of-service HMO" that functions as an HMO for people who want to stay with the medical

group that they have chosen within their HMO, but also includes a preferred provider insurance plan, which the member can access by paying a deductible (typically the first several hundred dollars of expense) and a portion of each medical bill. Such patients can also opt for a traditional insurance plan with somewhat stronger financial disincentives. These add-ons allow the covered person the full range of choice of provider, but grant more favorable financial terms for using the HMO's primary care group. Such arrangements are proving to be very popular. The point-of-service HMO was introduced in the mid-1980s. In March 1987 eleven HMOs reported point-of-service enrollment of nearly 400,000. By July 1995, 318 HMOs served more than 5 million enrollees in point-of-service plans. Most people in these arrangements end up staying with their primary care group for more than 90 percent of the services that they use.

In 1978 the HMO industry was made up almost entirely of local nonprofit HMOs and Kaiser Permanente (then a large national organization serving 3.5 million enrollees in six states). By 1995 thirty-five national HMOs served 42.7 million of the industry's 53.8 million enrollees. Some data on the HMO industry's growth are shown in tables 1 and 2.

Integrated delivery systems: The seven integrations. The term *integration*, as applied to health care financing and delivery, refers to the (at least) seven ways in which the system's components are being linked more closely to realize important gains in quality and economy. Integration need not mean common ownership. Indeed, the trend is toward integration by contractual relationships.

1. *Between financial responsibility and delivery*, through per capita prepayments by the purchaser to the chosen med-

ical care organization. The premiums that are paid reflect the overall efficiency of the provider organization as well as the health risks of the enrolled population. Per capita prepayment implies a reversal of the economic incentives in the fee-for-service system. Doctors prosper by keeping patients healthy and by diagnosing and treating their medical problems promptly and effectively. Tertiary care (open-heart surgery, organ transplants, services that are usually performed in regional referral centers, and so on), considered a major profit center in the traditional system, has become a "cost center." Under the traditional system filled hospital beds were an indicator of success; under the new paradigm empty beds are good.

Per capita prepayment holds providers accountable for costs, and for the costs of poor quality. If an operation is done poorly and leads to complications and the need for more treatment, providers pay the extra costs—not the insurers or patients. In that sense per capita prepayment can create incentives for high-quality treatment. Patients with unsolved or poorly managed problems continue to impose costs on the health care system. Per capita prepayment facilitates the alignment of doctors' incentives with patients' interests in high-quality, economical care. It pays for and rewards cost-effective preventive services, such as increased outreach of prenatal care to reduce the costs of neonatology and better management of chronic diseases to minimize acute episodes. Prepayment also provides a framework for cost-benefit analysis, helping

TABLE 1
U.S. HMO growth: local and national firms, 1978, 1985, and 1995

	1978	1985	1995
Number of HMOs			
Local HMOs	183	298	192
Branches of national HMOs	12	187	385
Total	195	485	577
Number of members (millions)			
Local HMOs	3.7	10.1	11.0
Branches of national HMOs	3.6	10.9	42.7
Total	7.3	21.0	53.8

Source: InterStudy data.

TABLE 2
U.S. HMO industry composition: model types and tax status, 1978, 1985, and 1995
(millions of members)

	1978	1985	1995
Model type			
Staff	a	3.0	0.8
Individual practice associations	0.6	6.4	22.1
Network	n.a.	5.0	3.3
Group	6.7	6.6	9.1
Mixed	n.a.	n.a.	18.1
Total	7.3	21.0	53.4
Tax status			
Nonprofit	n.a.	13.6	22.1
For-profit	n.a.	7.4	31.2
Total	n.a.	21.0	53.3

a. Included in group model.
Source: InterStudy data.

to determine the most effective ways to spend limited resources. And it rewards cost-reducing innovation, such as the many innovations that have dramatically reduced the length of hospital stays for total hip replacement operations (Keston and Enthoven forthcoming).

2. *Between providers and populations.* This integration facilitates and encourages population-based medicine, which adds an epidemiological perspective to encounter-based medicine. Providers examine their encounters with patients to understand the underlying causes of the patients' complaints and to determine if there are effective methods of prevention. One of the enduring legends of Kaiser Permanente is that when its founding doctor, Sidney Garfield, was treating construction workers who had nail-puncture wounds in their feet, he went to the construction site with a hammer and pounded down nails. Some HMOs now give children bicycle helmets and videotapes explaining why they should always be used. Thus HMOs can allocate resources to maximize the wellness of their enrolled populations through preventive and patient education services. Moreover, the defined population base enables HMOs to match the numbers and types of doctors in their groups, as well as other resources, to the needs of the enrolled population.
3. *Among the full spectrum of health care services,* including inpatient care, outpatient care, doctors' offices, and home nursing, as well as with drugs and other services. Thus the resources that HMOs have been devoting to improved preventive services and outpatient care are more than being paid for by reduced inpatient costs. As noted, HMOs seek to deliver care in the least costly appropriate setting. They are motivated to organize seamless comprehensive care so that patients are not left to their own devices when they leave the hospital. In the best-managed HMOs, committees of doctors and pharmacists choose drugs that produce the best outcomes and minimize total costs of care, not merely the least costly drugs.
4. *Among doctors and with other health professionals.* This means the right numbers and types of professionals and the right mix of specialists to ensure that patients have good access and to ensure that specialists are proficient in caring for the patients they were trained to see. It means rational referral patterns and an efficient specialist-generalist division of labor. For example, spe-

cialists may serve as consultants to generalists who actually deliver the care. And it means efficient use of paramedicals, for example, nurse practitioners and social workers to work in teams with primary care physicians.

5. *Between doctors and hospitals,* giving doctors a serious interest in reducing hospital costs. Under the fee-for-service system doctors had incentives to behave in ways that increased hospital costs. In a well-integrated system doctors develop practice patterns that facilitate efficient hospital operations. They work with hospitals to reduce unnecessary record keeping. And they support "value for money" investments.
6. *Among hospitals.* Groups of hospitals in a region combine to share administrative support functions, including management personnel, to consolidate volume-sensitive clinical services such as open-heart surgery, neonatology, and laboratories.
7. *With patient information.* In the traditional model information on diagnoses, treatments, and costs was scattered throughout the system; integrated systems develop comprehensive longitudinal records for each patient so that every provider who contacts a patient can have a complete picture of the patient's medical history. This approach helps to avoid duplicate tests and unfavorable drug interactions. Moreover, the information can serve as a basis for research on the relationship between diagnoses, treatments, and outcomes that is impossible to perform without such information.

Controversy over managed care. Managed care has become extremely controversial in the United States even while (or perhaps because) it is growing with remarkable speed. Concerns are expressed almost daily in the press. Perhaps the greatest concern, often expressed by doctors, is that the incentives of per capita prepayment will motivate doctors to do less than they otherwise might do to improve patients' health ("underservice" or "skimping"). This potential shortcoming is often seen as the mirror image of the incentives for excess treatment under the fee-for-service system.

For all the sound and fury, there is remarkably little evidence of reductions in services at the expense of patients' health, at least in established HMOs that serve the employed middle class. (Managed care has been more problematic

when states have contracted with or created organizations that specialize in caring for the poor.) For example, a recent survey of the literature found that “the HMO and [fee-for-service] plans provided enrollees with roughly comparable quality of care, according to process or outcomes measures. Fourteen of 17 observations from 16 studies showed either better or equivalent (same or a mixture of better and worse) quality-of-care results for HMO enrollees compared with [fee-for-service] enrollees for a wide range of conditions, diseases, or interventions” (Miller and Luft 1994, p. 1,516). The framework in which managed care organizations compete (managed competition, discussed below) needs to include measurement and oversight of quality, as well as disincentives to skimp on or underprovide services, while encouraging cost-reducing innovation—a delicate balance.

Related to the underservice issue is a question of trust in doctors. Some managed care arrangements (for example, a typical prepaid group practice) leave salaried doctors in a neutral financial position between doing more and doing less. But some arrangements give doctors strong financial incentives to provide less care, raising questions of whether people can trust their doctors. Compounding this problem, a few HMOs include wording in their contracts with doctors that are intended to limit what doctors can say to their patients—so-called gag rules. There is nothing intrinsic to HMOs that requires gag rules, and the HMO industry association opposes them. Apparently, this practice is fast disappearing in the face of public protest and, in some cases, legislation.

A related controversy inappropriately targets managed care for something that is part of every health insurance contract and public insurance program—that is, exclusions from coverage. The federal government’s Medicare program and private health insurers, whether managed or not, have typically excluded coverage of unproven or experimental therapies, and individual tragic cases have inspired intense controversy. The U.S. media has often confused this situation with managed care.

Traditional insurance contracts were remarkably open in their coverage. Insurers were usually not really at risk for the costs of care—they passed them back to employers or to the government. So they did almost nothing to control costs. Under pressure to cut costs, insurers are tightening their definitions of covered services, often leading to dis-

appointments and unhappy surprises. For example, in an effort to reduce the inappropriate use of hospital emergency departments, HMOs have sometimes refused to pay non-contracting providers for services that they did not consider to be related to genuine emergencies. What is needed (and are now emerging) are industry standards that define clearly what is and is not covered in ways that people can understand and accept, and procedures for the prompt resolution of disputes.

The arrival of large-scale managed care in the United States coincides with the recognition that the resources devoted to health care must be limited. With limited resources, some kind of management is inevitable. The choice is whether management will be done by government as the single payer, with all its rigidity, insensitivity to local conditions, and susceptibility to “pork barrel” politics and corruption, or whether it will be done by competing private entities from which people can choose and that can be held accountable by subscribers and government.

Managed care is a complex bundle of innovative solutions to the problems that characterized the traditional fee-for-service system. Innovation means trial and error; in hindsight, some efforts turn out to be poor ideas that generate much-publicized complaints. Doing managed care well is a complex business. Not everyone understands it, especially when it is growing so rapidly. “Good” managed care seeks to substitute better, more satisfying, less costly care processes; “bad” managed care seeks to limit costs by imposing across-the-board numerical limits that apply poorly to individual cases. Over time, in an appropriately structured market serving informed people, the good will drive out the bad. But in the short run the poor performers may be confused with the good and try the public’s patience with the entire endeavor. Countries contemplating managed care should recognize that a great deal of learning will be needed on the part of patients and providers. Of course, few developing countries will have to deal with the expectations of a population that has had the freedom and lack of personal responsibility for health care costs that most U.S. citizens have had.

Finally, followers of the U.S. debate over managed care should remember that the growth of managed care in the United States is very much to the economic disadvantage of doctors, nurses, hospital workers, and other providers of care, who now find themselves in a more normal eco-

conomic market than the one they previously enjoyed. This is bound to influence their judgments about managed care.

For-profit and nonprofit arrangements. Until about 1980 the HMO industry was dominated by nonprofit organizations. Since then for-profit carrier HMOs have grown much faster than nonprofits (see table 2). In 1995 for-profit carriers covered 58.5 percent of HMO members. The situation is complex, however.

For example, Stanford University employees are covered by four HMOs. One, Kaiser Permanente, is made up of a nonprofit insurance plan, a nonprofit hospital corporation, and the Permanente Medical Groups, which are organized as for-profit professional corporations. But the corporations' shares are held only by the doctors, and are not publicly traded. Another HMO, Blue Shield, is a nonprofit carrier that markets the services of the nonprofit Palo Alto Medical Foundation and Stanford Faculty Practice Plan. (In another community, nonprofit Blue Shield might contract with the for-profit Columbia Hospital Corporation of America for hospital services and with a medical group organized as a professional corporation.) The two other HMOs are for-profit carriers that market the services of these two nonprofit provider groups. Their shares are publicly traded.

In my view Stanford employees are well-served by this mix. The nonprofits offer important benefits, such as more research and community service. In 1980 there was large unmet demand for HMOs and cost-contained medical care. With a few exceptions, such as Kaiser Permanente, the nonprofit HMO sector did not expand fast enough to supply the demand. The for-profits, with their superior access to capital and stronger incentives to grow, expanded to meet the demand, bringing the lively competition and lower costs we now enjoy.

The setup that works will depend on a country's business culture, regulatory institutions, and so on. Developing countries that are interested in creating a rapidly growing HMO industry will likely need to include for-profit companies in the mix because of their access to capital and stronger incentives to grow and innovate. Concerns about these companies' performance in meeting social objectives can be addressed by regulation (community rating, rules governing access to doctors, and so on), contractual provisions with purchasers, and measurement and oversight by employers, employer coalitions, and other payers.

Managed competition: Organizing the demand side

Managed competition is a market-making function performed by large group purchasers of health insurance coverage such as large employers, coalitions of large employers (such as the California-based Pacific Business Group on Health), coalitions of small and medium-size employers (such as the Health Insurance Plan of California, a pooled purchasing cooperative created by the state for employers with three to fifty employees), the federal government for Medicare beneficiaries as well as for its own employees, and state governments for state-sponsored Medicaid beneficiaries as well as their own employees. These entities are sometimes referred to as sponsors. In 1986 I introduced these concepts with the following paragraphs:

Many proponents and critics of the competition idea share the misconception that competition means a market made up of health care financing and delivery plans on the supply side and individual consumers on the demand side, without a carefully drawn set of rules designed to mitigate the effects of the market failures endemic to health care financing and delivery, and without mediation by some form of collective action on the demand side. Such a market does not work. It cannot produce efficiency and equity.

Managed competition must involve intelligent, active agents on the demand side, contracting with health care plans and continuously structuring and adjusting the market to overcome attempts to avoid price competition. I call these agents sponsors. . . . A sponsor is an agency that assures the members of a defined population group of the opportunity to buy health care coverage. The sponsor contracts with health plans concerning benefits covered, prices, enrollment procedures, and other conditions of participation. . . . Sponsors may be public or private. (Enthoven 1986, p.106)

Sponsors perform several functions to manage competition, outlined below.

Selecting the competitors. Sponsors must first decide which managed care organizations and carriers should be allowed to compete to serve the sponsored population.

Criteria for selection should include quality of care, financial solvency and stability, competence of management, and willingness to operate in support of the goals of the program. U.S. employers have had an important advantage in this role. They can contract at will and use their judgment to decide subtle issues of quality and employee satisfaction.

In general, no health plan has an entitlement to be offered, and an employer can decide not to renew a contract without having to prove poor performance in court. However, employers have exhibited deficiencies in selecting competitors, one of which is to prefer one or two carriers to more choices because doing so creates less work for the employee benefits office. Government purchasers are usually constrained by laws and rules that preclude the exercise of judgment. (However, the statute establishing the Federal Employees' Health Benefits Program freed this program from normal procurement laws and regulations and allows its managers to exercise discretionary judgment, which they have done with some distinction.) Public purchasers usually have to specify the criteria and then contract with any organization or carrier that meets them—even if they are poorly qualified in the judgment of the officials managing the program. Moreover, public officials usually must try to enforce the letter of the contract in a situation in which the “product” is difficult to define. The buyer-seller relationship gives the sponsor a tool for enforcing good-faith compliance with the spirit of the contract even when its terms are imprecise.

Creating price-elastic demand. To create price-elastic demand, sponsors begin by organizing coordinated annual open-enrollment periods, which give all participants an opportunity to consider alternative health plans, review information about their prices and performance, and change plans if desired. (Experience in the United States has shown that annual enrollments work well; in principle, a longer period could also work.) To a point, a longer list of competitors creates more substitutes, and closer substitutes help make demand more elastic. Beyond that point, more choices, especially if they merely replicate the choices already being offered, may create a bewildering array of options that raises switching costs and discourages people from making changes.

Next, subscribers need to be fully responsible for premium differences. That is, if subscribers choose plans with higher premiums, they should be required to pay the full difference so that they have an incentive to seek value for money. This principle is now observed by about one-quarter of American employers. In the United States a complicating factor in creating subscriber responsibility for premiums is the fact that employer-based health insurance contributions are tax-free to the employee, without limit. As a result, at the margin, the government is subsidizing people who choose more costly health plans. This shortcoming could be corrected by a limit on the tax-free amount, set at the premium of the low-priced plan.

Next, sponsors should standardize coverage contracts. Ideally, this would mean one standard contract offered by all the health plans competing in a sponsored group. However, HMOs rely on provider incentives and care management to control costs, while preferred provider insurance relies more on patient cost sharing (coinsurance, copayments, and deductibles) to deter excess use. So in a group in which HMOs and preferred provider organizations compete, it may be necessary to offer two coverage contracts; one for each type. And if some of the HMOs offer a point-of-service feature, there may be a need for three. Standardization simplifies the choice, shifting attention from details of coverage to overall quality and price. Standardization also lowers the information costs of switching plans, and is an important way of combating market segmentation and making different health plans better substitutes.

Next, sponsors must provide information on the quality of care and service. (Sponsor measurement of quality is discussed below.) However, the information requirement should not be overstated. HMO competition has worked quite well for decades in some large U.S. employment groups with no formal quantitative measures of quality or performance. People got the information they needed by asking their friends. The need for performance information applies equally to a competitive market model and a government-managed monopoly if the monopoly is to do a good job of managing.

Finally, for demand elasticity and other reasons, there should be no waiting periods or exclusion of coverage for preexisting conditions. When people switch plans, they

must be fully covered as of the day the coverage becomes effective.

Managing risk selection. The incentives of health care organizations need to be directed toward giving better care at lower cost, not toward selecting risks. Without careful design to offset risk selection, avoiding the coverage of poor health risks can be the shortest route to profitability, and it is important that managed competition design against this.

The first component of this design is to have the enrollment process run by an independent clearinghouse rather than requiring would-be subscribers to deal directly with competing health plans, because in the latter case there would be opportunities for the plans to be hospitable to apparent good risks and inhospitable to poor risks. An essential rule of enrollment is that any member of the sponsored group can join or re-enroll in any participating plan that he or she chooses. The health plans cannot pick and choose enrollees. Any attempt to do so should be viewed negatively and punished by the sponsor.

The second component is to standardize the coverage contract, because nonstandard contracts can be used to select risks.

The third component is risk-adjusted premiums. That is, the health care costs of the populations enrolled in the different plans need to be estimated, based on demographic and diagnostic factors, and compensatory payments made from surcharges on the premiums of the plans enrolling the good risks to the plans enrolling the bad risks so that risk selection is removed from the competitive market. For example, health plans that enroll a disproportionate share of diabetics should be compensated so that they are not punished in the marketplace, giving them no incentive to cut back their endocrinology department and make themselves less attractive to diabetics. A great deal of sophisticated research has been done on this topic, but so far there has been little practical application (Weiner and others 1996; Ellis and others 1996).

In fact, the competitive market in California has been working quite effectively in recent years without risk adjustment, and there is little evidence of the negative effects that economic theory would predict. But real price competition is in its early days in California, and these problems could become more serious as competition heats up. The Health

Insurance Plan of California, a purchasing pool for small employers, has installed a risk-adjustment system based on age, sex, geographic area, and medical diagnostic information obtained from hospital records (Health Insurance Plan of California 1995). However, this program is far too small to have a significant effect on the incentives of the participating health plans and their behavior. For risk adjustment to really work, a majority of the market would have to be using it. Still, the Health Insurance Plan of California's experience shows that the practical issues of doing risk adjustment are manageable.

Establishing equitable rules for enrollment and pricing. Certain rules of enrollment and pricing need to be applied within each sponsored group (for example, employees of the U.S. government). These rules are usually embodied in the contracts between health plans and sponsors. First, every covered person is guaranteed the right to enroll in the plan of his or her choice, and to renew coverage at each annual enrollment.

Second, the enrolled population is divided into rating categories, and the health plans quote uniform prices for everybody in a category. For example, at Stanford University we have separate premiums for single adult employees, for single parents with one or more children, for couples without children, and for families with children. All the single adults enrolled in a particular health plan pay the same premium, regardless of their health status. The federal government simply uses "individuals" and "families" for its employees. The Health Insurance Plan of California also uses age categories, because in their market environment they could not succeed if they tried to make young groups subsidize older groups.

Measuring and reporting quality. Both to improve quality and to make the market work better, major sponsors are investing in efforts to measure performance and quality and to report it to consumers. First, they have developed surveys of consumer experience and satisfaction. These surveys range from pointed questions about quality to general questions about satisfaction with doctors. (One of my favorite examples is, "If you were hospitalized in the past year, did you acquire any illness or injury in the hospital?") The California Public Employees Retirement System recently

started analyzing the replies of people who had been hospitalized or were high users of care to see if they were as satisfied as the healthy consumers. The methods for such surveys need not be very complex.

Second, the National Committee for Quality Assurance, a private nonprofit organization sponsored by employers and HMOs, has developed a data set that all HMOs supply. Data include measures of preventive services, such as the percentage of two-year-olds who have had their required immunizations, the percentage of women who have had periodic mammograms, and the percentage of diabetics who have had an annual retina examination. In California these data are audited. The California Public Employees Retirement System presents these data to consumers in a "report card" format.

Some states have systems that measure risk-adjusted mortality rates (that is, mortality rates from coronary bypass graft surgery, childbirth, and the like, adjusted for the patient mix). This will gradually become a widespread practice in the United States.

Finally, major purchasers (government and private employers) have created the Foundation for Accountability to explore and endorse more advanced quality measures related to specific medical conditions and outcomes.

Pooling purchasing and sponsoring the unsponsored. Managed competition is well suited to large employment groups that can mobilize the resources to manage, contract with health plans on more or less equal terms, enforce demands for information, and achieve economies of scale in administration. In large employment groups the employer contribution to employee health insurance is the glue that holds the group together as a purchaser, preventing people with the lowest health risks from splitting off and buying cheaper insurance on their own. Health insurers can only gain access to the employer contribution by contracting with the employer.

The most successful managers of competition are large coalitions of employers such as the Pacific Business Group on Health (a California-based coalition of large private employers), a national multimarket consortium organized by American Express, and the Health Benefits Program of the California Public Employees' Retirement System (a pooled purchasing arrangement for 1,000 public employ-

ers and about 1 million employees, retirees, and dependents).

The situation is much more challenging for people who do not belong to large groups: small employers, the self-employed, and the unemployed. To help small employers, the states of California and Florida have created pooled purchasing arrangements that small employers can join. The Health Insurance Plan of California is open to employers with three to fifty employees that agree to contribute at least half of the premium of the least costly managed care plan on offer. About twenty-five managed care plans participate, giving most employees a choice of six to eight plans serving their area. The plan has worked well, although it has not grown rapidly. Its main problem is a lack of a powerful financial incentive to hold the pool together and prevent the lowest-risk groups from splitting off and seeking lower premiums on their own.

In a system of completely voluntary insurance, adverse selection makes such a scheme unfeasible for unsponsored individuals such as the self-employed and unemployed. If participation is voluntary and is not motivated by access to the employer contribution (or the tax subsidy that supports it in the United States), people who do not anticipate medical costs will choose not to enroll, while people who expect medical costs will. Costs and premiums will become prohibitive in a phenomenon known as a death spiral.

Such a scheme could work for small employers, the self-employed, and the unemployed if there were a universal voucher that could be used only to buy health insurance through a group plan like the Health Insurance Plan of California. In the United States, however, we are nowhere near that stage.

Simple models can work. The preceding discussion may give the impression that managed competition is necessarily complex and must be supported by advanced data systems. This is not the case. Simple models of managed competition have done quite well. For example, a basic survey of patient experience and satisfaction can be very informative. And premium risk adjustment might be based on easily measurable demographic factors plus the presence of a few costly chronic conditions. In fact, a general advantage of decentralized private markets applies here: such

markets can function with less information than is needed by a centralized system.

Consequences of managed competition. Large-scale managed competition is a recent development in the United States. It has been introduced more extensively in California than elsewhere, led mainly by a few large employers and purchasing coalitions. Yet even though most employers in California have not applied all or even most of the principles outlined here, competition has become quite active. In real terms the 1997 premiums for competitive HMOs are about 15 percent less than in 1994. HMO premiums have for the most part stopped rising across the United States, although recent newspaper reports have forecast renewed increases (Freudenheim 1997; Winslow 1997).

Medical practice is changing rapidly, shortening hospital stays and finding ways to avoid them altogether. The surplus of hospital beds has been exposed, and efforts are under way in California to find ways to overcome the political obstacles to closing hospitals. A few have been closed, and it is likely that many more will be in the next few years. (Too many hospitals can be bad for the quality of care because a minimum volume of patients is needed to ensure the proficiency of health professionals.) The surplus of specialist physicians is also being exposed, and specialists are leaving California. Service levels are improving. There is much innovation to improve quality and service and to lower costs (Enthoven and Singer 1996). Nationally, HMO membership has been growing by about 12 percent a year since 1990.

The best managed care organizations are doing a great deal to take advantage of the opportunities created by managed care to improve medical care. They are creating information systems to study practice variations, measure outcomes, identify and adopt best practices, create clinical practice guidelines, and monitor progress. They do (or collaborate with organizations that do) ongoing technology assessment. They inform patients about healthy behaviors, chronic disease management, and the risks and benefits of alternative therapies. Some apply continuous quality improvement that employs interdisciplinary perspectives (Berwick, Godfrey, and Roessner 1990).

Facing competitive pressures in California, HMOs are working hard to improve customer service. For example, they offer convenient access to "advice nurses" who can

help patients make good decisions about the care they are seeking. They are investing in call centers to shorten telephone waiting times and expedite appointments. The emerging standard of access to doctors is same-day appointments for patients who think they need them (with some doctor, if not one's own doctor).

Downsides of managed competition. Effective managed competition requires a good understanding of how health insurance and managed care markets work. One of the main problems has come from incomplete implementation of managed competition concepts—for example, if employment groups do not make their employees sensitive to premium costs, they can be disappointed if they offer a choice among HMOs and do not see their costs come down (Enthoven 1993b).

Over the longer run the incentive (created by a lack of good risk adjustment) to avoid or underserve people who have costly chronic conditions is a matter of serious concern. When provider organizations enter this competitive framework, unless risk adjustment is done well, they have powerful incentives to make themselves unattractive to patients with costly chronic conditions. This can happen in subtle ways: generous pay and budgets for pediatrics departments, which attract healthy young families, and tight budgets for endocrinology (diabetes) and infectious diseases (AIDS). This is unfortunate because the patients with costly chronic conditions are the ones that have the most to gain from well-coordinated care. A wise public policy would encourage good risk adjustment.

A related concern stems from the fact that Americans move about and change jobs a great deal. Thus an HMO considering a more costly but effective way of treating a diabetic today in order to forestall serious complications ten years from now has reason to believe that the benefits will occur when the patient is a member of another HMO. (This may mean that the quality measurement program should monitor such processes of care in detail.)

Managed competition without managed care. I have consistently linked managed care and managed competition because I see managed competition in the United States as a framework of incentives intended to drive insurers and providers away from the traditional model and toward more

effectively organized and managed systems of care. Yet some analysts have asked whether governments and other sponsors could use the concepts of managed competition to improve the functioning of traditional insurance markets even in the absence of managed care. (By traditional insurers I mean insurers that do not have selective contracts with providers and therefore lack effective tools to modify their behavior.) I believe that the answer is yes, but in that event insurers would be competing on their efficiency and profit margins, which account for about 10 percent of health insurance premiums, and on customer service.

I believe that competition on “retentions” (that is, administrative expenses and profits as a percentage of premiums) contributed to undermanagement and inflation in the traditional health care market. Certainly, it is appropriate to subject such services to competition, and some managed competition concepts are needed to make that happen. For example, insurance contracts can be exceedingly complex to understand and compare. Insurers often use this complexity to raise switching costs, to deter people from making the effort to compare the alternatives and to consider switching. One danger is that the best way for health insurers to compete under those circumstances, without the ability to manage costs, is by selecting risks. A poorly designed incentive framework might drive insurers to great lengths to select risks. Another danger is that purchasers might assume that the lowest administrative expenses are best, leading to undermanagement of care. The absence of the possibility of managed care greatly reduces the advantages of the private sector in health insurance. If only traditional fee-for-service is allowed, the government as a single payer has several advantages—economies of scale, simplicity in administration, efficiencies of pooling risks widely, monopoly power—that could make that model more effective.

Summary of managed competition. For managed competition to work, several elements must be in place:

- The existence of managed care organizations in sufficient numbers to make markets competitive. A wide variety of entities might participate in this competition.
- Sponsors acting as active, intelligent agents that can create markets, contract with managed care organizations, set rules, monitor compliance and progress, and offer subscribers periodic choice.

- Measures to make demand price-elastic, including periodic choice, ease of switching, subscriber responsibility for premium differences, and information about competitors.
- Management of risk selection, including an independent clearinghouse for enrollment, rules ensuring that consumers can choose their plan, standard contracts, and eventual and progressive implementation of risk-adjusted premiums.
- Equitable rules regarding pricing, access, and enrollment.
- Information on health plan performance for consumers.
- Pooled purchasing arrangements (where needed).

Relevance for Developing Countries

The relevance of this experience to developing countries is neither simple nor obvious. I certainly do not want to suggest that other countries should transplant U.S.-style managed care and managed competition to their health systems without a great deal of careful thought about which ideas would or would not work in their societies.

I am uncertain how these concepts would apply in developing countries. I fear the consequences of a naive belief that terms like *competition*, *market forces*, and *HMOs* are magic incantations whose invocation will make things better without the long, hard struggle that is required to improve health care systems; such naive beliefs have plagued policymaking in the United States.

In 1994 William Hsiao wrote a sobering editorial that began:

Propelled by a declining faith in government, many developing nations have searched for a “magic pill” to cure the ills of their underfunded and inefficient public sector–dominated health systems. Allured by the success of free market mechanisms in promoting economic growth, conservative politicians and economists, starting in the early 1980s, pushed many developing countries to turn to the free market to finance and provide their health services. . . . The magic of marketization often seduces governments into action without a critical understanding of the conditions required for efficient markets and with no reference to empirical evidence. (p. 351)

Hsiao cites four countries in which elements of what might be called a market strategy were attempted—with poor results. He concludes that “to contain cost inflation and improve allocative efficiency, the government has to regulate the use of expensive technology” (p. 356).

One problem with Hsiao’s conclusion is that in the United States our experience has been that federal and state governments are incapable of regulating to improve allocative efficiency. Indeed, many of our worst inflationary excesses can be traced to public policy. Perhaps other countries have developed a superior form of government that is capable of regulating to improve allocative efficiency. But I doubt it.

Indeed, Hsiao goes on to observe that:

public sector provision of health services often suffers from bureaucratic inefficiency, long waiting time, and unresponsive public sector workers protected by their unions. Patients may not get value for money from a rigid government-run system with inefficient and deper-sonalized government clinics and hospitals. Often a centrally planned health delivery system also lacks. . . . the motivation to innovate. (p. 356)

I would add pervasive corruption to Hsiao’s list of public sector problems.

So, implementation of managed competition will not be easy, and good results will not come quickly—a serious problem in democracies with politicians whose horizon extends only to the next election. These markets are complex and interrelated. Policymakers must think through the entire system carefully, and be prepared to make mid-course corrections as problems arise and progress unfolds.

Implementing managed competition will not occur without disagreement and struggle. In the United States managed competition has been and remains intensely controversial, mainly because it is undermining the economic interests of providers. The changes have come at a time when health spending is growing rapidly. Employers and government were forced to respond.

Managed competition is not a magic pill. It will not raise money from workers in the informal economy to finance their health care. It will not insure the uninsured unless someone is willing to pay for it and can raise the money to

do so. (But it can bring lower costs, making it easier to pay for.) In the absence of carefully designed rules and strong institutions, it will not prevent health plans from seeking to serve only the most profitable customers.

Each country’s health care system reflects its history, culture, and political, social, and economic systems. One country cannot simply adopt another’s health care system and expect success. The managed care and managed competition model is a good fit for the U.S. culture, which values pluralism, diversity, multiple competing approaches, and individual choice and responsibility, is suspicious of concentrated power and dislikes government, and draws on constitutional arrangements that favor free markets. The considerable cultural diversity within the U.S. health care system requires a pluralistic approach.

There are, however, important features of the U.S. system that other countries should try to avoid. These include a lack of broadly based social insurance, an overemphasis on complex technologies that yield small gains in health status at the expense of primary care and prevention (we spend billions on neonatal intensive care but seem unable to ensure every pregnant woman good prenatal care), and an inability to organize collective action to make the health insurance market work well for small employers and people who want to buy their own coverage. However, managed care and managed competition could be built into a system of universal coverage with equitable financing (Enthoven 1978; Enthoven and Kronick 1989). Still, I believe that the U.S. experience supports several insights that are of general relevance for developing countries.

Change should be incremental

By incremental change, I mean continuous evolutionary change in which each step builds on the success of the previous steps. Incremental does not necessarily mean slow. For example, HMO membership in the United States is growing by 12 percent a year. This is a high rate of change, but it is a continuous process.

Incrementalism is one of the first laws of democracy. We make changes in small steps so that people can understand and adjust to them. We avoid public actions that create large windfall gains and losses. Democratic government cannot be seen as inflicting direct harm to people (Schultze

1977). Institutions take time to develop. Under managed care and managed competition, people require a great deal of time to learn how to deliver and how to receive managed care. As noted above, managed care requires a great deal of learning, and managed competition requires changes in expectations. People in developing countries sometimes speak of health care reform as though it were one single sweeping change after which no further change is needed. “Big bang” reform that is sudden, wrenching change is unlikely to work well. It is better to think in terms of “mid-course corrections” in a process of continuous change.

Pilot projects and multiple competing approaches are useful

Theories about health system organization and management are not strong enough to predict what will work in a completely new context. What looks and sounds good in theory may turn out to be bad in practice. In the 1992–94 U.S. health care reform debate most academics and health policy experts were skeptical that managed competition could moderate the growth of health expenditures—even after it had started to work. Social science research is always backward looking. When prepaid group practice started in the United States, it was denounced by organized medicine and greeted with suspicion by most Americans. Today, Kaiser Permanente receives some of the highest consumer satisfaction ratings among California HMOs, and the rest of the health care system has had to change fundamentally to respond to the competitive threat it poses. Through its practical, demonstrated experience it has proved itself in a competitive marketplace of health care and ideas.

Individual practice associations started with built-in fatal defects—namely, they were dominated by county medical societies that used them in an attempt to preserve the status quo. They were not selective in their physician membership. Only out of failure came the fundamental changes that enabled them to compete effectively. They changed to become selective in numbers and types of doctors and changed their management styles from “hands off” to “hands on.”

Finally, one size does not fit all. Different models work for different people in different circumstances in different parts of the United States. For example, Kaiser Permanente,

which has been so successful in California, is making some fundamental changes to adapt to market conditions on the East coast. Developing countries should adopt health care frameworks that allow for the development of multiple competing approaches, so that they can try them all and see what works best.

There are many routes to managed care

Managed care organizations can have a wide variety of origins. In addition to the U.S. examples that I have presented, consider these:

- Primary care or multispecialty clinics that are branches of the ministry of health might be transformed into free-standing nonprofit entities that accept capitation payment and compete with similar entities.
- As has been occurring in the United Kingdom, groups of primary care physicians might be formed that accept a capitation payment for a long list of services (backed up by reinsurance for high-cost cases).
- Traditional insurers might be allowed to contract selectively with providers and to offer patients incentives to use contracting providers.
- Traditional insurers might study the performance and prices of providers, select good performers, and offer preferential insurance coverage to patients who use them. This would be a form of preferred provider insurance with implicit contracts. (Until the legislative changes of the 1980s the laws governing traditional insurance in the United States prohibited insurers from discriminating among providers.)
- Public hospitals might be transformed into free-standing nonprofit entities that accept capitation contracts, in a manner reminiscent of the U.K. National Health Service Trust Hospitals.
- Large employers might create clinics for their employees and dependents, then open them up to the public on a prepaid capitation basis, in a manner reminiscent of the industrial origins of Kaiser Permanente.

In addition to national managed care firms, for-profits, nonprofits, and mutual insurers, HMOs in the United States have been sponsored by businesses, community cooperatives, county governments, hospitals, multi-hospital corporations, physician-hospital joint ventures, medical societies,

physician group practices, unions, universities, and others (InterStudy 1995).

A developmental approach can foster innovation and increase popular support

Health care reform does not have to happen all at once. Indeed, it should not. Managed care and managed competition in the United States should be seen as historical processes. They started with some doctors, employers, consumers, and trade unions wanting to try a different approach, prepaid group practice. To survive, prepaid group practice had to sell employment groups on the idea of the individual employee having a choice of a plan. Americans believe in choice. As increasing numbers of people began choosing prepaid group insurance, fee-for-service doctors began to suffer and so organized competing alternatives, individual practice associations.

Then the government made some strategic interventions. First, the federal government offered its employees a wide range of choice, including prepaid group plans and individual practice associations. Then, in 1973, a law was passed authorizing grants and loans to nonprofit HMOs, requiring employers to offer them as a choice and overriding provisions of state laws that inhibited HMO growth. Only in 1991 did my employer, Stanford University, adopt standard benefits and make employees sensitive to premium prices. Two years later, having seen that Stanford survived the change, the University of California system followed suit. And so the story unfolds. The key is to create a climate in which desirable innovations can occur.

Incentives matter

Perhaps because the subject has been dominated by health professionals, much if not most of the world's thinking about health system organization is uncontaminated by economic insight. Doctors and nurses even consider it insulting to suggest that economic incentives have anything to do with their behavior. But the fact is that economic incentives do make a difference to the behavior of individuals and organizations. The U.S. experience clearly shows that. Doctors formerly practicing in the fee-for-service model change their behavior markedly when their services are purchased on a

per capita prepayment basis. HMOs make major changes to increase economic efficiency when they are subjected to competition. Ultimately, individuals and institutions will do what is rewarded by society (especially what is rewarded by more resources) and move away from behavior that is not rewarded.

There is no perfect incentive scheme. Managed competition is an attempt to create a balance of incentives in favor of providers producing value for money. Incentives can be used to correct serious problems, as happened in the United States when growth in health care spending was excessive. New incentives may create new problems that require adjustments in the incentive scheme.

Integration of delivery systems and care processes is important

As explained above, the process of care is the orchestration of many components for the purpose of improving the health of a patient. Effectiveness can be enhanced and costs reduced considerably if the components are integrated well—that is, if they work together toward a common goal. Developing countries should develop integrated systems in their overall strategies to see if they can realize these advantages.

Managed competition is not a simple, static model. It is a journey guided by microeconomic principles, empirical research, and careful observation of what works.

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Managed Care and Managed Competition in Latin America and the Caribbean

André Cezar Medici, Juan Luis Londoño, Oswaldo Coelho, and Helen Saxenian

Dissatisfaction with the performance of health care systems has led to an intense search for more effective means of using public and private resources to improve people's well-being. Policy innovations in this area depend to a large extent on the history and starting points of different health systems—particularly with respect to the role of the state in the provision of health care services. In Europe, where the state traditionally has played an important role, countries have started to question the extent of the state's involvement in health care financing, and to look for more effective and equitable ways to separate the financing of health care from the provision of services. In countries like the United States, where the private sector plays an active role in the funding and provision of health services, efforts have been made to restructure private markets. Enthoven (in this volume), for example, proposes various models of managed competition for different types of systems.

Over the past two decades managed health care programs in the United States have grown rapidly and received considerable attention. Although many other countries also have managed care programs, they have received less attention. Such programs are becoming increasingly important in Latin America and the Caribbean. Although these programs differ, they share several characteristics. They typically either provide services directly or use selective contracting to provide services to covered individuals. In addition, covered individuals are more constrained in their choice of service providers than under traditional indemnity health insurance plans.

Managed care programs integrate financial responsibility for and delivery of health care services. Instead of using solely fee-for-service payments, health care purchasers use techniques such as per capita prepayments to providers, which put providers at risk for the cost of services provided. Well-developed managed care programs also use utilization review and quality control management to contain costs and ensure quality care.

Advocates of managed care argue that it offers considerable cost savings over traditional insurance and improves the quality of health care. The realization of these potential benefits, however, depends on the context in which managed care develops—particularly the regulatory framework and its enforcement. Managed care programs can grow with or without a regulatory framework based on managed competition. *Managed competition* refers to a regulatory framework (rules of the game) that uses competition and choice to enhance the functioning of health care markets.¹ Managed competition often refers to government regulation, but it can also refer to the regulatory framework that a large group purchaser of health insurance puts into place. California's Pacific Business Group on Health is an example of the latter (Enthoven in this volume). The performance of managed care—in terms of its contribution to efficiency, coverage, and equity—depends on the nature of the market and on the regulatory framework and its enforcement. Assuming a variety of forms and approaches, the concepts of managed care and managed competition are highly relevant for

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Latin America and the Caribbean. This paper reviews experiences with managed care and the regulatory frameworks in which it operates in selected countries in the region.

The paper draws two basic conclusions. First, there is ample scope for the development of managed care in both public and private health care systems in Latin America and the Caribbean. Traditional social insurance institutions and private prepaid medicine have much to learn from managed care modes of financing and delivery. Second, several varieties of managed competition are relevant for the region's health care systems. Under an appropriate regulatory framework greater competition among integrated delivery systems, together with greater consumer choice, can improve the efficiency and quality of services. The specific methods used to manage competition will depend as much on countries' size and level of development as on the methods used to mobilize financing. Given the unequal distribution of income and wealth in the region, the state needs to play an important role in mobilizing resources to ensure equity and efficiency. The weakness of markets also requires that the state play an active role in enhancing market development, to increase the chances of improving the coverage, efficiency, equity, and quality of services.

The Region's Health Care Systems

Latin America and the Caribbean is a heterogeneous region: income levels vary enormously, as do health status, health care spending, and health care financing and delivery. In

1995, for example, Haiti's per capita income was \$250—less than one-tenth Costa Rica's \$2,610. In 1990 Haiti's per capita health spending, at \$62 a year, was 13 percent of Costa Rica's \$460. In 1995 life expectancy for women in Haiti was 57 years, compared with 79 years in Costa Rica.

In 1994 the region spent an estimated 6.3 percent of GDP on health, about half of which came from public sources. Total health spending ranges from 2.7 percent of GDP in Guatemala to more than 8.0 percent in Argentina, Belize, Costa Rica, and Uruguay (World Bank forthcoming).

Although the region's health markets and health insurance institutions differ significantly, there are four basic systems: health care providers financed directly by private out-of-pocket payments, private health insurance markets financed by prepaid contributions, social insurance markets financed by mandated employer and employee contributions, and publicly delivered health care services financed by general taxes and operated by ministries and decentralized regional health offices (table 1). Managed care appears in both private insurance and social insurance systems.

These four systems serve different but overlapping groups. The poor tend to use public hospitals and clinics, supplemented by out-of-pocket expenditures on private practitioners and drugs. Formal sector workers are typically covered by social insurance systems, although many supplement this coverage with out-of-pocket expenditures and, in some cases, private insurance. The rich tend to buy private insurance, although they also may be covered by social insur-

TABLE 1

The four main health service delivery systems in Latin America and the Caribbean

System	Regulation	Source of financing	Cost controls	Provider payment mechanism	Consumer options	Ownership	Criteria for coverage
Private out-of-pocket spending	Minimal	Out of pocket	None	Fee for service	Many	Private	Ability to pay
Private insurance ^a	Some financial regulation	Employers and households	Range of cost controls	Range of payment mechanisms	Many	Private	Ability to pay
Social insurance ^a	Little or no external regulation	Mandated payroll taxes	Range of cost controls	Range of payment mechanisms	Limited	Collective	Mandated contributions
Public services financed by general tax revenue	No external regulation	General tax revenue	Public budgets	Installed capacity	Restricted	Public	Universal, but especially as a last resort for the poor

a. Can include managed care.
Source: Adapted from IDB 1996.

ance and may rely on the public sector for high-technology services. This broad classification leaves out important variations, however. In Brazil, for example, the government contracts to the private sector many services that are publicly financed.

Universal access, quality, and efficiency are major issues in the region's health care systems. The poor have the worst access. And despite rapidly rising health care costs in many countries, some analysts believe that the quality of public services has declined. Many countries' health care systems are fragmented. Populations are served by overlapping and uncoordinated systems. Few providers—public or private—have the incentives to adopt an integrated approach to the health problems of the populations they serve. Governments generally have failed to coordinate and regulate the diverse segments of the health system.

Analysts in the region have traditionally emphasized the public sector's role in financing and providing health care. Only recently have they started to examine the importance of private participation in health services. In the early 1990s total spending on health was believed to total 4.0 percent of regional GDP, including 1.6 percent that was not part of public spending (World Bank 1993). Researchers have since estimated that public spending on health services was much higher—more than 3.1 percent of GDP—and that private spending was more than twice as high—3.5–4.0 percent of GDP. Moreover, recent research has illustrated the tremendous progress made in the organization of health services in the Americas. Almost 100 million Latin Americans are now served by integrated health care delivery systems, and more than 60 million are registered with prepaid, non-governmental, integrated delivery organizations—almost as many as are served by health maintenance organizations (HMOs) in the United States.

Thus public financing and provision of health care is just one part of the health sector, albeit an important one. Although the organization and structure of the private health sector are weak, the concepts of managed competition are highly relevant to the development of the region's health care systems. The specific methods used to develop managed care in Latin America and the Caribbean will depend on countries' size and level of development as well as on the modalities of health care systems. In this regard, there are three types of countries in the region.

In countries where the public sector has played a dominant role in the funding and provision of health care, the government will have to reorient its role, becoming a consumer advocate and working to ensure greater autonomy for health care providers, greater freedom of choice for consumers, and more efficient modes of resource allocation. In countries with better-developed markets for private finance and provision, as well as more experience with integrated delivery systems, it will be possible to experiment with more competitive systems using the financial resources provided under social insurance schemes. And finally, in countries where population groups are highly segmented within the health care system, and that typically exclude the poor from health care, competition may best be promoted within a publicly financed and regulated system that expands coverage and improves the quality of service.

Emerging Managed Care Models

The development of integrated health care delivery systems is not new in Latin America and the Caribbean. In Argentina and Uruguay the development of organizations of health service users (*mutuales*) dates from the end of the nineteenth century. Since World War II many countries have experienced growth in social insurance systems that have integrated finance and delivery of health services for formal sector workers. These institutions were constituted as public monopolies in most countries, though not in Argentina and Uruguay, where pluralism prevailed. What is new in the region is the recent rapid growth in private insurance.

A number of managed care models have been developed in the region, including Chile's Provisional Health Institutions, Uruguay's Collective Institutions of Medical Assistance, Colombia's Health Promotion Entities, the Dominican Republic's *Iguales Médicas*, Brazil's Medical Group Organizations, and Argentina's *Obras Sociales*. Characteristics of these models are summarized in table 2. More than 75 million people are enrolled in these organizations.

These managed care programs are similar to preferred provider organizations in the United States in that, in almost all cases, covered individuals must use providers within the program's network. Providers in the network are often paid on a capitated basis, which puts them at risk for the cost of services provided—and can create incentives to

TABLE 2

Characteristics of managed care organizations in selected Latin American and Caribbean countries

Country/ organization	Integrated delivery systems?	Selective provider contracting?	Utilization management?	Negotiated payments?	Quality management?	Number enrolled
Chile/ISAPREs	Yes	Some	Yes	Yes	Heterogeneous	27% of population (3.8 million)
Uruguay/AMCs	Yes, in most cases	Some	Some	Fixed prices set by government (in some cases)	Heterogeneous	65% of population (2 million)
Colombia/EPSS	Yes	Some	Some	Yes, risk-adjusted capitation set by government	Heterogeneous	50–60% of population (18–22 million)
Dominican Republic/ Iguales Médicas	Yes, in most cases	Some	Some	Yes	No	7% of population (0.5 million)
Brazil/MGOs	Yes	Yes	Some	Yes ^a	Weak	25% of population (40 million)
Argentina/ Obras Sociales	Some	Yes	Some	Yes, but not uniform	Weak	29% of population (10 million)

a. Price tables are used, with general agreements defined each year.
Source: IDB and World Bank staff estimates.

underprovide services unless countervailing forces check this tendency. Some of the managed care programs listed in table 2 provide services directly, and in this way resemble health maintenance organizations (HMOs) in the United States. Utilization review and quality control management are the two standard elements of managed care that are least developed in Latin America and the Caribbean.

How Can Countries Achieve Managed Competition?

Health care systems in Latin America and the Caribbean reflect each country's history, culture, and political, social, and economic development. Since many countries have highly pluralistic systems, one of the main challenges that governments face is creating regulatory mechanisms that encourage competition to induce equity and efficiency and improve the quality of services.

Unregulated health care markets generate many market failures (Arrow 1963; Musgrove 1996). Unregulated insurance markets, for example, result in adverse selection by individuals and risk selection by insurers—both major obstacles for efficient and equitable risk pooling. The goal of regulation should be to establish rules of the game that mitigate the market failures endemic to competitive health care financing and delivery—an objective known as man-

aged competition.² At the same time, regulatory mechanisms must be adapted to a country's public sector management capacity and ability to enforce regulations. Another challenge for governments is improving access to and quality of services for the poor in a competitive framework. Some governments, for example, are exploring demand-side subsidies so that the poor can choose from competing health plans (including, in some cases, public providers).

Enthoven (in this volume) argues that governments and large purchasers of health insurance ("sponsors") must determine, based on factors such as quality of care and financial solvency and stability, which health insurers or managed care organizations should be allowed to compete to provide health care services for the sponsored population. In Latin America and the Caribbean the sponsor might be the ministry of health, social security institute, large private employers, or other institutions. The sponsor's main roles include:

- Defining the basic health care service package provided by insurers or managed care programs. A standardized benefits package simplifies consumer choice and focuses attention on quality and cost.
- Providing information on quality and cost to consumers so that they can make informed choices.
- Establishing rules of the game so that consumers can choose the insurer or managed care program that best suits their needs. These rules typically require coordi-

nated annual open enrollment and no waiting periods or exclusion of coverage for preexisting conditions.

- Managing risk selection so that health care organizations can focus on providing health care efficiently rather than on trying to enroll populations with the lowest risk of health expenditures. Standardized benefit packages limit health care organizations' opportunities to select risks. In addition, the sponsor can use risk-adjusted premiums—that is, make compensatory payments to plans that enroll high-risk populations and cut payments to plans that enroll low-risk populations.

Sponsors also have a role to play in increasing equity. They can, for example, channel government subsidies so that the poor can participate in the system and enroll in the same plans as the rest of the population. They also can set contribution rates in social insurance systems so that contributions from high-income workers and their employers subsidize contributions from low-income workers and their employers.

No country has yet achieved this idealized version of managed competition. In Latin America and the Caribbean two different models of managed competition have emerged. In some countries (Colombia, Uruguay) the government, as sponsor, is playing a bigger role in managing competition, intervening in finance and regulation. In other countries (Brazil, the Dominican Republic) large private employers are playing the role of sponsor, without any public finance or regulation. These efforts are analyzed in the case studies that follow.

Case Studies of Health System Reforms and Managed Competition

This section analyzes reforms that are introducing elements of managed competition in Latin American and Caribbean health systems—in Chile, Uruguay, Colombia, the Dominican Republic, Brazil, and Argentina.

Chile's system has increased competition, but equity is a problem

The economic and social development model followed by Chile since the early 1980s is one of the most advanced in Latin America. During 1991–95 Chile's economy grew by

an average of 7.4 percent a year (in real terms). The average annual domestic savings rate is 25 percent. And unemployment, which averaged 28 percent during 1983–89, dropped to 5.6 percent in the first half of the 1990s.

As a regional leader in terms of economic adjustment, Chile's economic and social reforms, including those involving social security and health care, are considered models for the rest of the continent. Between 1960 and 1995, for example, the under-five mortality rate dropped from 155 per 1,000 to 15 per 1,000 (World Bank forthcoming). Moreover, the main causes of death are now similar to those in industrial nations.

In 1981 Chile launched two parallel reforms: creating a system of private integrated delivery systems—ISAPREs—and partly decentralizing public health care to twenty-six regional health centers. Public health care now covers 73 percent of the population; the remaining 27 percent is covered by the ISAPREs. All formal sector employees must contribute 7 percent of their salaries to the national health system. (There is no employer contribution.) Workers whose salaries reach a certain level can purchase an ISAPRE (private) health insurance plan. If workers choose to buy a more expensive health plan than their 7 percent contribution permits, they must pay the difference.

Although the government established a basic package of services to be provided by the ISAPREs, the plans are increasingly selling more comprehensive packages to workers. The unemployed and workers whose salary contribution is not high enough to buy an ISAPRE plan are covered by the National Health Fund, which is generally considered to provide lower-quality care. This is not surprising given that in 1995 per capita spending by the ISAPREs was \$646, compared with \$121 by the National Health Fund. Copayments are significant in the system, and with the growth in the system's costs they have become an important source of financing for the services provided by both the ISAPREs and the National Health Fund.

In recent years the government has implemented other public sector reforms, such as provider payment reforms (payment by diagnosis). Budgets for local health posts are now capitated and are linked to the posts' capacity to recruit and maintain clientele. Public hospitals have been given more autonomy, and are increasingly selling services to the ISAPREs.

Although these reforms have introduced some competition, in that the ISAPREs compete to provide health care services to one segment of the population, the minimum conditions for managed competition have not been achieved. Most ISAPREs enroll healthy, young, high-income workers. Moreover, the ISAPREs have powerful incentives to make themselves unattractive to patients with costly chronic conditions. When individuals' risks for health expenses increase—whether because of aging or health problems—the ISAPREs raise their premiums or exclude conditions from coverage. The population is divided into rating categories by individual risk. As a result many high-cost patients return to the public system.

A regulatory office was recently established to regulate the behavior of the ISAPREs and to maintain a minimum number of providers in the system. But this office does not have the legal authority to ensure that the ISAPREs operate under equitable rules regarding pricing, access, and enrollment. Moreover, risk selection is not managed.

In summary, Chile's health system still has many shortcomings. Equity is a major problem given that the public system is poorly funded relative to the ISAPREs and receives no subsidies from the ISAPREs. In essence the country maintains a two-tier system with differing services and quality of care. Although quality of care and consumer choice have improved for many high-income workers, the regulatory framework needs to be reformed so that competition is better managed to minimize market failures and to improve equity, quality, and cost control. A managed competition regulatory framework is needed so that the ISAPREs have incentives to improve service quality and reduce costs, not to maximize profits by attracting low-risk populations. Public sector networks could be organized to compete with the ISAPREs for consumers under comparable health care packages. Direct subsidies could be given to low-income groups to enhance the demand side of the system.

Uruguay provides extensive coverage, but needs to strengthen its regulatory framework

Uruguay, with 3.2 million inhabitants, has relatively good socioeconomic indicators and income equality. In 1995 the under-five mortality rate was 21 per 1,000 (World Bank

forthcoming). The health system is pluralistic, with many private and public service providers. Although in theory all Uruguayans are covered by a health plan, data indicate that about 6 percent of the population is not enrolled in any health plan. In 1994 health spending was almost \$300 per capita—about 8.5 percent of GDP (World Bank forthcoming).

During the 1970s and 1980s Uruguay's health system underwent a series of reforms. Formal sector employees can now choose among health plans, which are provided by private Collective Institutions of Medical Assistance (IAMCs). The system's frequent deficits are covered by general tax revenue.

The Bank of Social Provision finances, on a capitation basis, each worker's basic health plan. The IAMCs now cover about 65 percent of the population. Worker contributions are set by the government, which also has defined the basic package of services to be provided by the IAMCs. Given fixed contributions, IAMCs control their costs by adjusting the volume and quality of services and by excluding high-risk individuals. The degree of consumer choice among the IAMCs depends heavily on location. In Uruguay's capital, Montevideo, many IAMCs compete in the market. In rural areas, however, there are usually only two IAMCs per district, and in several districts there are none.

Employee and employer contributions to the IAMCs only cover services provided to employees. Thus employees tend to select the IAMC that offers the best terms for family coverage, or they enroll their children and spouses in partial insurance institutions that are not required to offer the basic package.

The public sector covers people who are not served by the IAMCs, including poor households whose head does not earn enough to purchase coverage by an IAMC or a partial insurance institution. As with Chile's ISAPREs, the public sector also covers people—usually the elderly—who have been forced to leave the IAMCs because of increases in their health risk.

Both the public and private sectors of Uruguay's health system use copayments to recover costs. Thus the IAMCs are financed by a combination of prepayments (in the form of monthly premiums) and copayments for services received. The public system has many levels of copayment that vary with family income.

The Ministry of Economy and Finance sets prices for copayments and contributions, and has avoided significant price increases over the past ten years. As a result the operational deficit of the IAMCs has increased substantially, and some have closed. Contributions do not vary by age, and the IAMCs do not receive any risk adjustments based on their enrolled populations. As a result many young people voluntarily leave the system (because they can purchase cheaper plans elsewhere), while the elderly try to retain coverage. This imbalance has been a major factor in the financial crisis facing the IAMCs.

Young people have two alternatives to the IAMCs. They can enroll in a partial health insurance plan offered by a private institution (which generally costs less than the IAMCs), or they can seek services from the public sector. Since many choose the latter, the number of people served by the public sector has been growing. Public spending has increased and service quality has deteriorated. Moreover, an increasing number of people are covered simultaneously by two or three modalities of assistance.

Public resources are also strained by policies regarding the financing of high-technology services. Many high-technology services are covered by the publicly financed National Resource Fund and are supplied by the Institutes of Highly Specialized Medicine. The cost of some of these services (renal transplants, for example) is almost five times the price charged in neighboring countries (such as Argentina and Brazil). In 1995 the National Resource Fund spent half of its budget on high-technology services for about 8,000 people.

As in Chile, Uruguay's pluralistic health system has elements of competition, but the regulatory framework is not sufficiently developed to enhance competition and choice. There are many market failures and problems in the system that put pressures on health care costs. Problems arise from the way contributions are controlled, the lack of measures to control adverse selection by individuals and risk selection by insurers, the fact that dependents are not covered under a common framework, and policies on the reimbursement of high-technology procedures.

The main suggestions for developing a more consistent managed competition framework are related to the transformation of public services and budgets. Public providers could be organized as autonomous networks, financed by

risk-adjusted payment formulas, that compete to cover low-income groups. Risk-adjusted capitation formulas could be used to avoid the cream-skimming behavior of the IAMCs. The efforts would, of course, require some adjustment of Uruguay's rigid regulatory framework.

Colombia has made impressive progress in structuring competition in recent years

Colombia is in the middle tier of Latin America's developing countries, with a population of 37 million people, per capita income of \$1,800, and the region's most stable economy. Having been spared the external shocks experienced by most other Latin American nations during the debt crisis, and with no deep recessions or inflationary spirals, it gradually managed to narrow pronounced income inequality during the 1980s. Still, nearly 30 percent of its people survived on less than \$2 a day, and the country's social sector institutions were undeveloped.

Until the early 1990s health care systems were highly segmented, characterized by heavy out-of-pocket spending. The neediest were left without coverage. An ambitious package of institutional and financial reforms launched in 1993 sought to implement a health insurance system with a strong element of competition but guided by principles of solidarity. In the process Colombia proved itself a pioneer in its pursuit of managed competition. In the first three years of the reform program, despite daunting technical and political problems, coverage has been vastly expanded, equity has been increased, and the quality of health services has been much improved.

In years past Colombia had three parallel health care systems. A social insurance system run by the Social Security Institute provided health services to formal sector workers, and complementary agencies supplied health services to their families and to government employees. After forty-five years, this public health care system served 21 percent of the population—mainly middle-class citizens, who were dissatisfied with service quality. A traditional public health system overseen by the Ministry of Health combined public health interventions and open-access hospitals. Repeated efforts since the 1970s to decentralize personal medical care and emphasize primary health care for the poor had borne little fruit, creating a situation in which the poor had scant

access at the same time that hospital utilization rates were very low (less than 50 percent).

Operating alongside the two public systems was a private health care system, itself far from uniform. Privately run hospitals accounted for 25 percent of hospital discharges and surgeries. Some 75 percent of outpatients were attended to by private doctors or practitioners. One million wealthy Colombians had access to high-quality and expensive prepaid medical systems and private insurance companies, whose coverage essentially duplicated what was offered by the social insurance system. This segmented system cost a great deal and generated sizable disparities between regions and between segments of society. Health care expenditures were enormous, equivalent in 1992 to about 6 percent of GDP, and more than half came out of families' pockets. The country's infant mortality rate of 25 per 1,000 live births was an average of the 15–20 per 1,000 rate in large cities and the more than 200 per 1,000 in remote rural areas. At least 20 percent of the population—the poorest rural dwellers, residents of marginal urban districts—had no access to health care, a situation they attributed largely to their inability to pay. The poorest 20 percent of Colombians paid about 18 percent of their income for health care.

Between 1990 and 1993 Colombia laid the institutional foundations for a complete overhaul of this fragmented, segmented, and inequitable health system. A 1991 constitutional reform created the framework for decentralizing social services and developing a social security system grounded in the principles of universality, solidarity, efficiency, and private sector involvement. In 1993 Congress approved Law 60 and Law 100, the cornerstone of a new system made up of public finance, mandatory affiliation, decentralization and competition in service delivery, consumer choice, and broad participation.

At the heart of this new system was mandatory affiliation, by those able to pay, with a social security system guided by a uniform resource mobilization and allocation scheme and plurality of health service organizations. Thus finance was separated from service delivery, and the purchaser-provider split of services was developed.

The system's funding scheme is grounded in social insurance principles. All participants contribute 11 percent of their earnings to enroll their families. These resources are placed in the Solidarity Fund, a compensation fund for redis-

tribution among population groups with differing economic means and health needs. The fund assigns to the organization chosen by each family a capitation payment that is risk-adjusted for sex, age, and geographic location, with reinsurance for catastrophic illness. The average capitation payment is \$120 per person per year. In addition to the basic contribution, there is a copayment system to encourage rational use of services. Public funds do not finance the Solidarity Fund; they are gradually being turned to directly fund health insurance for the poorest 30 percent of Colombians.

At the core of health care reform is a new system of multiple organizations in charge of enrollment (by delegation of the Solidarity Fund), insurance, and organization of service delivery. Health Promotion Organizations (EPSs) combine insurer functions with the type of service articulation performed by U.S. HMOs. Without privatizing the Social Security Institute, the reforms divested it of its monopoly in this area. They allow unrestricted competition among EPSs—public or private, nonprofit or for-profit, integrated delivery or by contract—subject to certain minimum financial conditions. Families can freely choose their EPS. Users are guaranteed a universal package of high-quality health services, including medicines. One aim of this arrangement is to stimulate competition for service delivery and spur the development of supplementary plans for interventions not covered under the universal package.

The new social security system seeks to integrate the public health care delivery system. Government budget outlays (bolstered by a "solidarity payment" of 1 percent of contributions) are being strictly targeted to public health interventions or to the poorest 30 percent of Colombians. Public hospitals have become autonomous corporations, akin to state industrial enterprises. Regional agencies now purchase services on behalf of disadvantaged groups. Growing volumes of direct transfers from the national government to municipalities are intended to fund insurance for the neediest. To that end, a system of community cooperative health organizations has been actively promoted in the poorest areas to purchase basic health care services or to allow people to join an EPS.

In tandem with this separation of the system into three streams of funding, service purchase, and service production, the Ministry of Health, freed of direct responsibility for pro-

viding services, is now responsible for general oversight. The ministry is aided by a national board representing business, labor, and health service users. This tripartite body has broad powers to develop rules and regulations under the law. In addition, the now-autonomous Health Superintendency has been strengthened to better perform its financial control functions and supervise the workings of the system.

Thus Colombia's new health system combines the two preeminent principles of Latin America's version of managed competition: coordination of service delivery in integrated plans and consumer empowerment. At the core of the system are the EPSs, which assume the risk of ensuring a universal package of services. The demand side is bolstered by users' ability to freely choose their EPS, by consumer organization through health alliances and cooperative health organizations, and by government mediation in health care funding (with risk adjustments for groups that cannot pay, and direct government subsidies for the poor) and regulation.

In the three years since Colombia adopted the new system, enormous progress has been made in its development. More than fifty decrees have been issued to regulate the system and fine-tune its various elements. The Ministry of Health has made local agencies responsible for service delivery in 80 percent of the country, and 85 percent of hospitals are now run autonomously. With the new funding system in place, nearly 20 million people—55 percent of the population—now has health insurance coverage. Some 14 million people have chosen to join one of thirty EPSs, just over half of them falling under the Social Security Institute. The new EPSs have an impressive record of innovation in service organization, information systems, contracting, payments, and quality assurance. Six million of Colombia's poorest have received vouchers giving them access to the system: four million through EPSs and two million through cooperative health organizations. According to a survey conducted in early 1997, 83 percent of EPS members were satisfied or very satisfied with the services they were receiving, and 73 percent of the population felt that the health system had improved since the enactment of Law 100.

Colombia's mix of public funding and managed competition has substantially expanded coverage and made the system more equitable. Still, the transition has had its share of technical, institutional, and political problems:

- Growing violence, resulting in 30,000 homicides a year (more than in the United States, which has ten times the population), is adding to the burden of disease. The associated skyrocketing demand for medical care is generating additional costs of more than 1 percent of GDP.
- The process of identifying basic parameters for the new system has been one of trial and error. The capitation rate, for instance, must balance out system revenues while defraying the cost of universal service. Difficulties in measuring costs and forecasting revenues of new members have prompted more changes in these areas than would have been desirable.
- The absence of strong political resolve to curb evasion has kept system revenues down.
- The transformation from a system that allocated public funds to one based on demand financing has taken longer than expected, driving up costs unnecessarily.
- Not all the adjustments to the universal health package have been based on sound cost-effectiveness criteria.
- In the absence of fully developed information systems, the allocation of public resources and conditions for consumer choice are still not fully transparent.
- Political problems still arise. One result of the government's political crisis was a succession of three health ministers in less than three years, leaving the system without strong direction at critical junctures. And the shift in the balance of power between users, providers, organizers, and fund holders has created friction, sometimes open and sometimes not, that has hampered decision-making and tested providers' support for the system.

In the final analysis, Colombia's innovative reforms to introduce competition into its health care system have yielded results far more quickly than in other countries. The challenge in the years ahead will be to consolidate the gains and step up the pace of the transition, to give the country a more efficient and equitable system overall.

Costa Rica has achieved some elements of managed care

The Costa Rican government created the Costa Rica Social Security Fund (CCSS) in 1941 to provide sickness and maternity coverage and pension funds for urban salaried workers. In 1961 this mandate was expanded to cover the entire population within ten years, but political disputes delayed

implementation ten years. In 1971 the CCSS was required by law to proceed with the universalization of coverage.

This goal was achieved in 1973 with the enactment of a law that transferred all Ministry of Health hospitals to the CCSS and entrusted the CCSS with providing free health care to the poor. That same year, the National Health Plan defined the scope of work for the Ministry of Health and the CCSS. The ministry became responsible for providing preventive health services and the CCSS for curative services. The social security system's extensive coverage has left little room for the private sector. (Both the ministry and the CCSS serve patients who are uninsured and do not deny services to anyone, regardless of income.) A 1982–85 survey, for example, found that the private sector managed just 1.9 percent of hospital beds.

Costa Rica's economy, like many others in Latin America and the Caribbean, suffered considerably during the economic crisis of the early 1980s. In 1981 inflation was 81 percent and the currency was devalued by 320 percent, and during 1982–83 unemployment reached 9.4 percent. The country's capacity to pay its external debt was undermined as debt payments started to consume more than half of export earnings. The government's capacity to collect taxes was reduced, and public expenditures were cut. As a result the National Health Plan was revised to redefine the legal roles of the Ministry of Health and the CCSS, to promote administrative decentralization, and to create alternative models of health delivery.

During the 1980s the government experimented with transferring part of the health delivery system to the private sector. In particular, the CCSS developed three programs—enterprise physicians, mixed medicine, and medical cooperatives—to incorporate the private sector in service delivery. These measures sought to reduce costs and improve service efficiency and quality.

Under the enterprise physician program, private enterprises (630 to date) hire a doctor and provide him or her with an office and a nurse. Under the mixed medicine program, the insured chooses a doctor from among members of the program and pays for the service. Both programs are supported by the CCSS. During 1986–87 these two programs reached a combined 7 percent of the population covered by the CCSS while consuming only 4 percent of x-rays, 3 percent of laboratory tests, and 6 percent of approved paid sick leave.

Under the medical cooperative program, the CCSS signed a contract with two health cooperatives, making them responsible for two clinics in the San José metropolitan area. Under one of these agreements, the CCSS constructed and delivered a \$1.5 million clinic to COPPESALUD, a physician's cooperative, which became responsible for outpatient care in the Pavas district. The CCSS pays about \$30 a year for each insured resident in the area. COPPESALUD health services are delivered by a basic health care team made up of a physician, an assistant, and a community health worker for each 3,000–3,500 persons. Staff turnover is low because salaries are high.

Although Costa Rica's health system does not have enough insurers to create competitive market conditions, and the private sector is small, the three private health programs do contain elements of managed care. In the enterprise physician program, doctors have to compete for the salaried positions within companies. Like the general and family agents of the primary care network, enterprise doctors serve as gatekeepers to specialized services and as agents of cost control. Under the mixed medicine program, the insured must select a doctor from the list of physicians provided by the insurance organization in which he or she is enrolled. This approach can save money for the system if the insured signs up with the most economical providers. Finally, the medical cooperative program represents a type of capitation model in which a group of physicians provide health care services in return for a fixed per capita payment provided by the government.

Given that Costa Rica's small population impedes the development of competitive health plans, future innovations could come from increasing choice for beneficiaries of the Family Health Program, using more managed care techniques in primary care centers and public hospitals, and increasing transparency and efficiency in the system of resource allocation.

The Dominican Republic is moving toward greater private provision

With 7.5 million inhabitants and a per capita income of about \$1,000, the Dominican Republic spends about 5.3 percent of its GDP on health (World Bank forthcoming). Public spending accounts for 38 percent of the total. Despite

the lack of in-depth studies on service coverage, it is estimated (based on a study conducted in the capital) that 56 percent of the population is covered by the private sector, 30 percent by the Sub-Secretariat of Public Health and Social Assistance (SESPAS), 10 percent by the Dominican Institute of Social Security, and 4 percent by the Institute of Social Security of the Army and Police Force.

SESPAS plays a contradictory role since it regulates and inspects all public and private health services while also providing publicly financed health services through its 57 hospitals, 79 health posts, and 587 rural clinics and medical dispensaries. The Dominican Institute of Social Security manages a maternity hospital, 20 polyclinics, and 13 urban and 128 rural medical offices. Its financing comes from voluntary contributions to social security accounts and transfers from the federal government. It charges a fee for some services to partially recover costs.

The private sector is composed of both nonprofit institutions (such as NGOs) and for-profit organizations. Over the past twenty years the organization of private services has changed as coverage strategies and health plans similar to those of U.S. HMOs have been adopted. Although it controls just one-quarter of the country's hospital beds, the private sector accounts for more than half of outpatient visits.

The economic and institutional crisis experienced in the 1980s created problems for the Dominican Republic's public health system. Since 1985 the government, with assistance from the U.S. Agency for International Development (USAID), has been developing alternative financing schemes and extending private coverage to low-income families and workers in the informal sector (La Forgia 1990).

There are at least three kinds of private insurance: *Igualas Médicas* (prepaid HMO-type health plans), health insurers, and self-administered insurers. The twenty-one *Igualas Médicas* administer the organization, financing, and provision of health services. Most have their own clinics.

The health insurers are specialized departments of insurance companies organized to cover health risks within an integrated insurance package. In general, they contract with medical clinics for service provision. The insurers provide two types of services: those based on a system of preferred providers (where the user has limited choices) and a system offering freedom of choice within established price

parameters. The second scheme is usually more expensive and has a more sophisticated system of control.

Finally, the self-administered insurers are nonprofit organizations established by institutions, companies, and unions to manage health insurance plans for their specific populations. Ten such insurers are operating, the largest of which is the Medical Insurance of Teachers, with about 120,000 enrollees.

The *Igualas Médicas* are the fastest growing of these three types of insurers. With the backing of USAID, these enterprises have received technical assistance with administration, cost control, quality assurance, and actuarial capacity. Although they are now trying to expand their services to low-income groups, they are doing so without the financial backing of the state, which continues to provide its own health services.

Despite the institutional forms of prepayment developed in the Dominican Republic, most insurers lack basic technical and administrative expertise in terms of information systems, methodologies for establishing risk, cost controls, and cost-efficient methods of allocating resources (Santana 1996). They also lack adequate mechanisms for responding to consumers' complaints and comments.

Despite these deficiencies, the health services provided by the private sector are relatively comprehensive and of higher quality than those provided by the public sector. Private insurers admit families and all categories of workers, and their beneficiaries have access to better clinics and services. Their units also offer greater choice of doctors and more personalized attention.

One frequent criticism of the private system is that its package of health coverage excludes many services and high-cost patients. But this criticism should not overshadow the fact that the *Igualas Médicas* are a viable option for improving health services and eventually reforming the Dominican Republic's social security systems.

Further development of managed competition in the Dominican Republic requires the development of a regulatory framework that increases the accountability of the *Igualas Médicas* while fostering competition with SESPAS and the Institute for Social Security. Consumer empowerment can be increased by developing an essential package of services and allocating public resources to subsidize the poor's access to the competitive integrated delivery systems.

Brazil's three systems should be better integrated

Brazil's health care system is composed of a public system, a private system of supplementary medicine, and an out-of-pocket system (table 3). The resources gathered through these three systems totaled \$23.2 billion in 1994, with expenditures equivalent to 4.5 percent of GDP.

The public system—known as the Unified Health System—was established by the 1988 Constitution and is financed by federal and local governments. In 1994 federal health expenditures reached \$10.4 billion, while those of states and municipalities reached \$4.1 billion. Most of the resources local governments spend on health are transferred to them by the federal government. In exchange, local governments are responsible for the direct provision of services or for contracting out services to private establishments.

The private system consists of four types of organizations: medical group organizations (MGOs) that operate like U.S. HMOs, health insurance institutions that function under similar criteria but do not provide services directly, medical cooperatives that use prepayment systems (though their operations resemble those of preferred provider organizations), and medical services provided by companies, which may be within their facilities or contracted from any of the other three organizations. The private system relies on prepayments, covers about 35 million Brazilians, and has annual revenues averaging \$6.6 billion.

The out-of-pocket system—meaning household payments for services provided through medical networks and private hospitals—has annual revenues of \$2.1 billion. The number of people covered under this system is residual, since resources from the public and private systems are the main source of financing for hospitals, health services, and doctors.

Despite a pluralistic structure of service providers, the Brazilian health model lacks well-defined rules separating the three systems. As a result there are conflicts among the system's participants, due both to the lack of adequate legislation and to the constitutional principles guaranteeing the universal right to free and comprehensive health services. Low-income citizens account for 78 percent of the public system's users, yet must share the system with the 22 percent of people who are also covered by private insurance. Otherwise, the poor have to pay for medical services out of pocket.

Since the public sector is not organized on a competitive basis, services are essentially rationed—as evidenced by long hospital lines and lack of materials and medication. And because there are no barriers blocking use of the public system, people covered by private health insurance tend to use the most sophisticated services and exams provided by the public sector. Thus the government is indirectly subsidizing private health insurance.

A few innovative experiments are under way to reverse this situation at the local level, where states and municipalities are assuming increasing autonomy in the administration of health services. One such experiment is the Health Plan of Action introduced in 1995 in São Paulo, Brazil's largest city (15 million inhabitants).

The goal of the Health Plan of Action is to organize São Paulo's municipal services (including hospitals and basic health services) into cooperatives (managed by doctors and staff) that compete for clientele. Many such cooperatives have been organized. Doctors and staff have been transferred from the human resources division of the city government to administrative and management positions in hospitals and other health institutions. Under this scheme citizens can choose the cooperative that best meets their

TABLE 3

Health care services in Brazil

Group	Public system (Unified Health System)	Private supplementary medicine	Direct out-of-pocket payments
Informal sector workers/ low income	Primary care and hospitalization	None	Complement Unified Health System
Formal sector workers/ middle income	High technology and sophisticated procedures	Primary care, high technology and sophisticated procedures	Not used much
High income	High technology and sophisticated procedures	Primary care, high technology and sophisticated procedures	Used heavily

needs, and the municipal government makes an annual payment of about \$225 per capita to each cooperative.

Experience with the Health Plan of Action is limited to relatively uncomplicated services in São Paulo. Public hospitals are responsible for more complex services. The Health Plan of Action has four main weaknesses:

- Lack of incentives to provide preventive health care to plan members.
- Limits to competition, since the cooperatives are organized into geographically separate networks.
- A blurred relationship between the Health Plan of Action and the Unified Health System, which creates cross-subsidies between the two systems and prevents clear analysis of the Health Plan of Action.
- The per capita payments that the city makes to the Health Plan of Action could be used to foster competition between public cooperatives and private health structures.

Despite these problems, 80 percent of users are satisfied with the Health Plan of Action. The challenge is to give continuity to the program and to better define its relationship with the other health systems.

Brazil can learn a lot from the varieties of managed care and managed competition in the region. The government could develop a system of competitive purchasers of health care and simplify the system of allocating public resources. The public system of providers could be transformed into integrated delivery systems that compete with private networks. A common system of regulating public and private purchasers could then be developed, with attention to a comparable package of essential services and a system of quality assurance. Within this framework there is ample space for the application of managed care techniques, especially in ambulatory services. Brazil, however, has not reached consensus about future reforms.

Argentina's system has weaknesses—but the government is trying to address them

In Argentina most formal sector workers and their dependents are required to participate in an Obra Social (statutory sickness fund) linked to their place of employment. The national Obras Sociales are funded by a compulsory payroll tax of 3 percent paid by employees (plus 1.5 per-

cent for each dependent) and 3–6 percent paid by employers. Taxable income is capped at \$3,750 a month. The national Obra Social system covers 10 million beneficiaries in about 300 Obras. In addition to the national system, twenty-four provincial Obras cover 5 million public employees and their dependents (World Bank 1996).

About 4 million retired, disabled, and pensioned persons and their families are covered by Integral Medical Attention for Retirees, which is funded by an additional payroll tax of 5 percent that is shared by employers and employees. Altogether, this social insurance network covers nearly 20 million Argentines, or about 61 percent of the population.

There is also a large market for private health insurance. About 200 private plans cover more than 2 million people. Another 1 million belong to nonprofit mutual insurance funds. Coverage is often duplicated, however. Many workers who contribute to the national Obras Sociales also buy voluntary health insurance because of dissatisfaction with the services provided by the Obras. In addition, some employers provide private health insurance in addition to the mandated Obra Social coverage. People that are not covered by either the Obras Sociales or by private insurance—mainly the poor—rely on the publicly financed public hospital system and on out-of-pocket purchase of health services.

The health delivery system is mixed. About half of hospital beds are in private institutions. Although some of the Obras Sociales provide health services directly through their own facilities, most purchase services from a network of private providers. Because access to providers is restricted to those within the network, many Obras Sociales resemble preferred provider organizations. Over the past few years the Obras Sociales have moved away from fee-for-service provider payments toward capitated payments.

Still, the system is facing financial difficulties. The national and provincial Obras Sociales (including Integral Medical Attention for Retirees) have incurred huge deficits in recent years. Moreover, consumer dissatisfaction with the Obras Sociales is widespread. Except for white-collar workers, until very recently workers have not been able to choose their Obra Social—it is dictated by their employment. The Obras Sociales also have huge differences in both per capita funding and performance. Some workers receive almost no health care services from their Obras. Others belong to

Obras that provide comprehensive services. Many Obras Sociales are probably too small to be economically efficient. Many have weak managers and are overstaffed.

The provinces, which are responsible for almost all public hospitals, also have experienced sizable fiscal deficits. Equity and efficiency are both big problems. Yet the government's approach to reform in one part of the system—the national Obras Sociales—suggests that it recognizes and is responding to at least some of these challenges.

The government is now establishing a regulatory framework that supports a competitive environment for the Obras Sociales. The envisioned framework contains many elements of managed competition. It would guarantee standard health benefit packages, support consumer choice, improve equity, and minimize risk selection by workers and Obras Sociales.

Many components of the reforms have already been implemented. The government has signed decrees allowing workers to choose their Obra Social and to take their contributions with them. A preliminary standard benefits package has been defined. The formulas for redistributing Obra Social contributions from high-income to low-income workers were overhauled to make the system more accountable, transparent, and equitable. Efforts are being made to develop risk-adjusted payments for the Obras Sociales based on the risk profiles of those who enroll. Obras are restructuring to cut staff and modernize their operations. Finally, steps are being taken to strengthen regulatory oversight of the Obras.

Designing and implementing these reforms is difficult, and depends on both political and technical factors. Design and implementation is made more difficult by the weak information base that supports the Obras Sociales. The Obras Sociales enrollment database, for example, is incomplete and inaccurate. The number of dependents is not clear. Data to support risk-adjusted payments (age, sex, health risks) are limited. And much work will be needed to develop measures of Obra Social quality to support consumer choice.

The consolidation of managed competition in Argentina will require improving the system of payments (including risk adjustment) to integrated delivery systems and increasing the scope of choice for consumers. Obras Sociales will need to become more accountable to their consumers and face more competition with private providers. Over the long run the poor could be brought into the system by redirecting public resources toward plans that provide them with coverage.

Conclusion

Managed care models of health service delivery now make up a significant share of the health insurance market in several Latin American and Caribbean countries. Although these models share many features with managed care programs in the United States—the country with the largest share of the population (57 percent) enrolled in managed care in the world—they have distinct features that reflect their political and socioeconomic contexts. Their growth is likely to continue over the next decade given both the growth in demand for private insurance and the reforms that several governments are supporting to promote competition in health insurance markets.

The concepts of managed care and managed competition have found fertile soil in Latin America and the Caribbean. Colombia and Uruguay have gone furthest in introducing varieties of managed competition, with about half of their populations covered. In Argentina, Chile, and southern Brazil new institutional modalities have been extended to cover about a quarter of the population. In Costa Rica and some parts of the English-speaking Caribbean the introduction of new organizational models is still in the experimental phase.

A country's ability to introduce managed competition depends on its characteristics and institutional features. Three basic determinants of managed competition's success include a country's size, its level of development, and the way its health system is organized. The smaller and poorer a country is, and the less developed its institutional capacity, the more trouble it will have managing competition. The achievements of Uruguay (a small country) and Colombia (a middle-income country with a highly heterogeneous population) do not follow these general guidelines, however.

As noted, the thirty-three countries of Latin America and the Caribbean show considerable diversity. At one end of the scale are eleven middle-income countries with fewer than 1 million inhabitants (mainly English-speaking Caribbean countries) and high levels of coverage financed and operated by the public sector. These are followed by seven countries with 1–5 million inhabitants and high population densities (for example, Costa Rica, El Salvador, and Jamaica). In these countries discussions of internal

TABLE 4

Trends in Latin American health care markets

	Higher-income countries	Lower-income countries
Small homogeneous countries	Managed care in public systems	Competition for primary health care with public funds for the poor
Large heterogeneous countries	Managed competition with a mix of public and private funds and institutions	Structured pluralism with a stronger element of public finance

markets and opportunities for managed care are probably more relevant for primary care, and must be combined with incentive systems that improve the public administration of services. At the other end of the scale are the large Southern cone countries (including southern Brazil), which have achieved considerable economic and institutional development. Given these countries' more developed markets, the integration and plurality of their service providers, and their health care experiments over the past decade, full competition between integrated delivery systems, with public financing, has the greatest potential. Rather than encouraging development of separate private and public systems, innovations should promote convergence among existing systems in order to minimize duplication of coverage, control costs, and improve the quality of services.

In other large but poor countries (Bolivia, Guatemala, Haiti, Honduras) the empowerment of consumers would be more effective if the state redirected its efforts from providing the middle class with public hospital services toward funding and purchasing primary health care services for the poor. To that end, community organizations could play a more active role in structuring markets from the beginning, drawing on some of the ideas of sponsors presented by Enthoven (in this volume) or the community financing schemes identified by Hsiao (1992). The experiences of Colombia's *Empresas Solidarias* and Peru's community development cooperatives are particularly relevant in this regard.

Other countries have more options for developing health care systems with greater competition, freedom of choice, and solidarity. These include the larger, higher-income countries with good institutional development (Mexico, Venezuela) in which health reforms aimed at managing competition would be highly effective. There are also smaller countries with more diversified social and institutional structures (the Dominican Republic, Ecuador, Peru), where an

active configuration of managed competition could help overcome the segmentation of existing systems, expand coverage, and improve the quality of services (table 4).

Latin America and the Caribbean lag far behind the rest of the world in terms of education and health indicators. Catching up over the next decade will require more than increased financial and human resources. Above all, it will require redoubling the pace and scope of institutional innovations that the region has experimented with during the 1990s in order to use additional resources more efficiently and equitably. The challenges are particularly great in countries with low levels of public sector management capacity. The methods described here under the aegis of managed competition hold great promise in this respect. A long road must still be traveled to define the new models for the health sector. Managed competition systems will play a major role in this process.

Notes

1. Londoño and Frenk (1997) suggest a related concept of *structured competition* to characterize a system in which competition is structured with an explicit and common set of rules that are legally valid for all delivery systems and sponsors. This concept differs from managed competition, in which different sponsors can manage, with more discretion, different rules (see Enthoven in this volume).

2. Of course, managed competition is not the only type of regulation possible. Regulation is often used to restrict competition.

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Medical Savings Accounts for Developing Countries

Len M. Nichols, Nicholas Prescott, and Kai Hong Phua

Schieber and Maeda (in this volume) outline the fundamental health care financing choices for any economy. Most systems rely on a mix of public and private funds, using variations along a continuum between two extremes: reliance on government through public financing, public providers, and government price and resource controls; and reliance on markets through private financing, private providers, market prices, and private investment in health facilities. Like the other papers in this volume, this paper assesses the advantages and disadvantages of financing options along this continuum for countries at different stages of development. Under certain conditions medical savings accounts could play an important role in increasing resources, efficiency, and equity in market-oriented health systems. This paper clarifies the preconditions, risks, and risk management strategies for increased reliance on medical savings accounts, insurance, and market forces generally.

Features of Medical Savings Accounts

Financial structure

Medical savings accounts have two essential components: a fund with balances that are set aside for medical expenses and that may accumulate at the discretion of the individual; and a backup financing mechanism. The backup mech-

anism is some kind of insurance, for its use is contingent on certified medical events. This mechanism typically has either a large or no explicit size limit, and thereby provides backup financing for medical needs that would exhaust the medical savings account fund. Backup financing can be wholly or partly private or public.

Medical savings account proposals assume that both components—the fund and the backup insurance—are present. Both components are needed because the distribution of health care expenditures is highly skewed. In the United States, for example, 10 percent of the population accounts for 70 percent of health care spending in a given year (Berk and Monheit 1992). The health spending of this 10 percent is, on average, eight times the populationwide average, and that of the top 1 percent is thirty times the national mean expenditure. Similar distributions are observed in all technologically sophisticated health care delivery systems. This skewed distribution of health spending means that some kind of pooling or insurance mechanism is needed to guarantee access to high-cost but necessary health care.

There are two ways to pool health risks: cross-sectional, across individuals and families during a given year; and intertemporal, over many years for an individual or family. The main problem with comprehensive insurance in a cross-sectional pool is moral hazard: sufficient resources can be marshaled for health care needs, but low copayment requirements can lead to excessive demand for health services

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(Chollet and Lewis in this volume). Thus some type of demand management is required. The main problem with intertemporal risk pooling is cash flow: until an individual's annual contributions to the medical savings account have been accumulated over many years, resources are insufficient for unpredictable and catastrophic health care needs. Thus some type of cross-sectional pooling is required to insure against these needs.

Combined, medical savings accounts and high-deductible backup insurance can deal effectively with both pooling problems. Medical savings accounts help make patients more aware of health care costs and so reduce the moral hazard associated with cross-sectional pooling, and backup insurance reduces the cash-flow problem of intertemporal pooling over an individual's lifetime. By itself a medical savings account is a weak intertemporal risk-pooling device for individuals or families. Although it can accumulate and thus be used for a variety of future purposes, it could never finance the costs of being in the top 1 percent or even 10 percent of people needing health care. By contrast, backup insurance, by pooling health risks across individuals and families in a given year, can easily finance the high health care costs of the few who need them with relatively low per capita premiums or tax payments.

Contributions to the medical savings account fund can be either voluntary or compulsory (through a mandate or tax), and they can be made by individuals or by employers (including governments) on individuals' behalf. To encourage the spread of medical savings accounts, a tax subsidy may be granted to income or expenditures devoted to these funds. Contribution and withdrawal limits may also be imposed to prevent high-income individuals from using medical savings accounts to evade tax liabilities.

Backup insurance policies can be purchased in private markets if feasible. The state can adopt the principles of managed competition to facilitate the development of private insurance markets (see Enthoven in this volume). Alternatively, the state can sell insurance, with subsidies for the poor, or directly provide backup insurance by providing services or subsidizing providers. To encourage patients to be parsimonious when demanding care, the policy's deductible and out-of-pocket limit should be set at high levels, higher than the annual medical savings account contribution limit—perhaps as much as 10 percent of fam-

ily income. This means that patients will have to pay 100 percent of medical costs, either from the medical savings account or other personal funds, until a high level of expense has been incurred. Deductibles can vary with income, but this adds considerable administrative complexity.

Mechanics

Medical savings account contributions are accumulated in a fund managed by a trustee—an employer, bank, insurer, or the state. When workers need health care, they can use the balance of the medical savings account to pay the required fees. If medical needs in a given year exhaust the balance of the medical savings account, then additional out-of-pocket funds must be expended until the backup insurance policy's deductible amount is reached. At that point the backup policy starts to pay for the health care needs of workers or their families. Depending on the policy, the family's obligation is either greatly reduced or eliminated.

If a worker's family does not use much health care during the year, then the medical savings account fund could have a positive balance at year's end. This balance could be withdrawn and spent on other goods, or it could be retained and accumulated for future health care needs. This balance could be used as savings for retirement or long-term health care needs. This source of savings could be particularly important for countries that now have declining dependency ratios and relatively few elderly citizens, but expect to have much larger retired populations in the future. Interest could be earned on these account balances and taxed or not, depending on policy objectives.

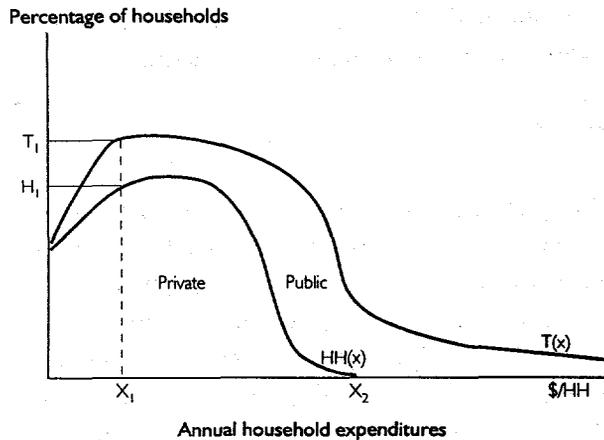
Health Care Financing with Medical Savings Accounts and Insurance

Distribution of financial risks

This section illustrates different combinations of public and private financing and describes three health financing models with medical savings accounts and backup insurance policies. All the models are special cases of the general one depicted in figure 1 through $T(x)$ and $HH(x)$, which represent total and household or privately financed expenditures, respectively.¹

FIGURE 1

Health expenditure distributions



Annual household expenditures are measured along the horizontal axis. The vertical axis measures the percentage of households with particular health expenditure levels. The entire area under $T(x)$ represents total national health spending. This general framework can accommodate any financing structure, for the difference between total and household (private) spending is public spending.² Different financing systems have these lines closer or farther apart, depending on the importance of public subsidies.

Household expenditures are the sum of out-of-pocket payments, private insurance payments for health services, and payments for health services made out of medical savings accounts. Any or all of these components could be zero in any particular health financing system. The difference between $T(x)$ and $HH(x)$ can be explained in two ways, but each interpretation represents some form of public payment for health care. Consider expenditure level X_1 . T_1 households have total expenditures equal to X_1 . H_1 households might pay all of X_1 out of pocket, with private insurance or with medical savings accounts, in which case $T_1 - H_1$ households get their entire X_1 from the government. These households could be said to be insured by a government program. They may be poor or privileged.

Alternatively, all households could be primarily responsible for their own health care, but a government health service subsidy equal to $(T_1 - H_1) X_1$ is shared among all T_1 households. That is, the government controls health service costs below market levels or total cost and pays some

amount to providers on behalf of all patients. Whether it occurs through a public insurance program for certain groups or a publicly financed price subsidy for all, the difference between $T(x)$ and $HH(x)$ can be interpreted as a measurement of the public payments for health care aggregated over all individuals.

No household pays for health care with private sources beyond the catastrophic expenditure level X_2 . Care provided beyond X_2 is completely under the discretion of the state. The more comprehensive are private insurance and medical savings accounts, especially if mandated, the greater is the share of health expenditures financed outside the government budget, since expanding private financing instruments will shift $HH(x)$ up and to the right.

Alternative medical savings account models

Keeping this expenditure distribution in mind, we now turn to examples of alternative financing models. The first medical savings account system we discuss has a purely public backup insurance mechanism; the second has a limited private backup insurance system; and the third has a purely private backup mechanism. In each case we assume that contributions on behalf of each worker are by employers as well as by workers.

Medical savings accounts with public backup. In the first model, individual medical savings accounts with a public sector backup, contributions fund only the medical savings account. Workers draw from this fund as health care needs arise for them or their family, now or in the future. Under this model the state essentially compels individuals and families to create intertemporal risk-pooling devices using medical savings accounts, and provides the cross-sectional risk-pooling backup mechanism to finance health care needs if the medical savings account is exhausted. This backup assistance can be through a public insurance program, through direct provision of subsidized care by public providers, or through public subsidies to private providers.

For people with positive balances in their medical savings account at the end of any year, the state has an important policy choice. (This choice is present in all the health system financing models discussed in this section.) If the primary goal of the compulsory medical savings account

program was to ensure the accumulation of sufficient private funds to finance future health care needs (and thereby avoid intergenerational transfers as the population ages), then the state should not allow balances to be withdrawn in full for non-health care purposes. But if the main purpose of the medical savings account scheme was to reduce current health care spending by making patients pay for health care, then the state should allow withdrawals for non-health purposes. Although both motivations are likely to be present in many cases, analysts can infer which motivation is stronger by noting which of these alternatives each state chooses.

Medical savings accounts with mixed backup. The second model requires larger contributions by employers and workers because they must cover both the medical savings account and a backup insurance policy. This high-deductible backup insurance provides cross-sectional risk pooling for families but is not large enough to fully cover all contingencies once medical savings accounts are exhausted. This option can be viewed as a medical savings account with a private insurance “corridor.” The corridor lies between the medical savings account and the public backup system for truly catastrophic events. Thus the cross-sectional risk pooling here is partly private (over the insured only) and partly public (over the whole society), or mixed.

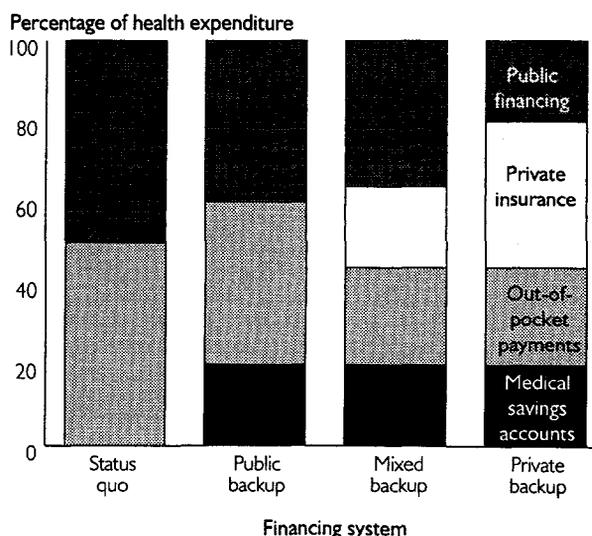
Corridor insurance policies have explicit lifetime or annual benefit limits, and when they are reached the public sector finances extremely high-cost cases. This corridor of limited liability insurance may be a good way to nurture a private insurance market, but the state could also sell or compel the purchase of insurance products that would accomplish the actuarial pooling required. We consider this corridor “private” regardless of where the insurance is purchased, since the basic goal is to pool risk among the insured group of individuals and families and not the society as a whole, and since the funding for this insurance comes from individual contributions made by the insured (even though they may be compulsory). It is also private in the sense that individuals have discretion over how this additional health care purchasing power is spent. Privately directed purchasing power may have many important implications for the health delivery system (see below). Corridor insurance could easily be structured to finance a considerable portion of a coun-

try’s health care expenses, since the distribution of health expenditures is so skewed and highly correlated with the need for hospitalization.

Medical savings accounts with private backup. The third financing model has a fully private backup insurance system for people with medical savings accounts. The insurance and cross-sectional risk pooling in this system are complete in the sense that they cover all the health care needs of the insured above those financed by out-of-pocket payments and the limited intertemporal pooling created by medical savings accounts. In this case the public sector’s responsibility is reduced to guaranteeing access for the poor. Again, it can do so through public insurance, direct service provision, or provider subsidies.

These different systems and backup mechanisms for medical savings accounts are illustrated in figure 2. The first bar represents a traditional system, in which there is no private insurance or medical savings accounts. Instead there is only a mix of public financing combined with private out-of-pocket payments. Introducing medical savings accounts can reduce public spending because private resources are mobilized. Medical savings accounts can also replace direct out-of-pocket spending. Private insurance liability is smaller in the mixed backup case than in the purely

FIGURE 2
Financing health care with medical savings accounts and insurance



private backup case because the “corridor” model preserves public liability for the catastrophically ill. The purely private backup system has the smallest public sector role, but even it has considerable public spending because the state is presumed to subsidize insurance premiums and health service copayments and to directly finance service provision for the poor.

In all medical savings account systems that include backup insurance, workers and their families have strong incentives to use health resources parsimoniously at least up to a point, while truly catastrophic health care expenses are covered either by the public sector or by private insurance. In both cases more private funds are drawn into the health financing system than in the traditional system, increasing the state’s options for allocating health resources. Total national health spending could be larger under all systems with medical savings accounts and much larger under the mixed backup or private backup options, since they mobilize considerable private resources to pay for health care. A larger share of private resources would enable budgetary resources to be better targeted to the health care needs of the poor. In each system basic ambulatory health services for a reasonably healthy family with average income could be covered from their medical savings account plus moderate out-of-pocket obligations. Sicker and poorer families may require additional subsidies.

Medical Savings Accounts and Health Policy Objectives

Medical savings accounts are controversial in health policy research circles. Singapore’s experience has been used to support a particular side in the contentious U.S. political debate (Hsiao 1995), and one of this paper’s goals is to clarify what Singapore’s experience means for other countries—especially developing countries.

With two notable exceptions (Bond, Heshizer, and Hrivnak 1996; CBO 1997), reviewed below, practically all the literature on medical savings accounts outside Singapore has been theoretical—either advocacy pieces (Tanner 1995; Goodman and Musgrave 1988; Pauly and Goodman 1995) or hypothetical microsimulation exercises designed to show who would win or lose financially upon switching from a comprehensive insurance policy to a medical savings

account/high-deductible insurance arrangement (Keeler and others 1996; Nichols, Moon, and Wall 1996; American Academy of Actuaries 1995; Ozanne 1996; O’Grady 1996). This section highlights analytical issues by discussing a set of hypotheses about the effects of medical savings accounts that could be tested with proper data and research design. The discussion of these hypotheses is organized around three broad themes common to public finance in developing countries: resource mobilization, efficiency, and equity.

Resource mobilization

In health systems that have heretofore been wholly or mostly public, creating medical savings accounts and private insurance or private discretion over health care purchasing may be the most politically palatable way to make the middle and upper classes pay more for health services, since most consumers place considerable value on discretion over health services and providers. Thus one hypothesis is that introducing medical savings accounts will increase total spending on health as private resources are mobilized. Introducing medical savings accounts as well as a compulsory backup insurance mechanism would increase health spending even more. Underlying these hypotheses is the assumption that the state will not reduce the absolute level of its health spending, but may redirect it, as discussed below.

Another resource mobilization hypothesis is that private demand for health services will encourage providers and others to organize and invest in more efficient health care institutions in order to serve the emerging block of purchasing power. In essence, private purchasing power may make it profitable to invest in health facilities. Over time this could considerably augment the supply of health facilities.

Efficiency

There are three broad hypotheses about the efficiency effects of medical savings accounts and backup insurance. It has been argued that medical savings accounts will lower costs, rationalize health professional and health facility supply, and improve the quality of care.

Costs. As noted, the extremely skewed nature of health expenditures makes risk pooling essential. This pooling of

resources sets up a natural tradeoff between shielding individual patients from financial ruin and the moral hazard problem described in Schieber and Maeda (in this volume) and Chollet and Lewis (in this volume). Patients are inclined to use more health resources than is optimal if the marginal price they face is artificially lower than the true marginal cost. With insurance and risk pooling, this gap is typically financed by an external third party. Medical savings accounts create incentives to consume fewer health resources because patients are responsible for the full cost of care and are spending their own money, at least until the backup insurance takes over.

There are two other ways to manage the excess demand that results from risk pooling and insurance financing. The first is for the state to control the supply of health care providers until supply constrains effective demand. This approach will keep spending down, but it may not provide a desirable allocation of resources, since triage decisions are essentially made by the state.³

The second mechanism for dealing with excess demand for health care, increasingly common in the United States, is managed care (see Enthoven in this volume). Managed care, in all its many forms, essentially enforces triage decisions and non-price rationing by private physicians. Competition in the marketplace for health plan enrollees protects patients from providers' incentives to underprovide care. Markets and quality reporting standards need to be well developed for competition to be effective, and it has proven to be so in some markets.

By themselves medical savings accounts attack the root cause of excess demand: copayment obligations that are below marginal cost. But the key difference between this approach to the moral hazard problem of health insurance and the others is that consumers—not health plan professionals or the state—get to choose. In essence, consumers ration their own health care instead of having elites ration it for them. To the extent that health resources are free to follow the resulting dictates of consumer demand, medical savings accounts represent a tool for constructing a consumer-directed health care system. This is their advocates' ideal (Goodman and Musgrave 1988).

Higher cost-sharing obligations will surely reduce health service utilization. But cost-containment results may not be as dramatic as some proponents of medical savings accounts

contend. First, the medical savings account may still be looked on as someone else's money to spend, especially if some of the contribution comes from employers (American Academy of Actuaries 1995). Furthermore, since medical savings accounts can be used to pay the first incurred expense, some patients may actually use more health care than they did when they faced coverage limits or had to make out-of-pocket copayments (Pauly 1994).

Second, providers have the power, as in any market with asymmetric information, to influence consumer decisions, especially once the deductible has been reached and the marginal cost to the patient drops dramatically. The bulk of national health spending could actually occur at levels above the backup insurance policy's deductible (Nichols, Moon, and Wall 1996; Keeler and others 1996). Providers have incentives to encourage use when they are paid on a fee-for-service basis. Furthermore, high spending is generally associated with complex hospital inpatient stays. The nature of these illnesses and treatment options makes families much less willing to sacrifice services to save money than they are in more discretionary ambulatory contexts (American Academy of Actuaries 1995).

Third, the combination of medical savings account and backup insurance produces substitution and income effects that counteract each other. The right to keep unused medical savings account balances and the requirement to pay a high insurance deductible mean that patients initially have relative price incentives to reduce health service use. At the same time, the backup insurance policy is like an income effect that will increase consumption, especially if this coverage is new. Thus the net effect of medical savings accounts on the level and rate of growth of per capita costs is somewhat ambiguous.

Provider supply. To control costs, state-run health care systems have to limit the number of health professionals and health facilities. In the discussion of resource mobilization above, we hypothesized that medical savings accounts would lead to more private investment in health facilities. Here we argue that medical savings accounts and backup insurance, by directing demand to private facilities, will raise the prices of some professionals' services and thereby increase the long-run supply of those professionals (assuming that the state relaxes artificial admission and certification lim-

its). To the extent that this privately directed demand becomes dominant, the resulting supply of providers may be more reflective of consumer preferences than the provider mix produced by the state planning apparatus.

Quality. Similarly, the privately directed purchasing power created by medical savings accounts and backup insurance will likely increase demand for quality care outside state facilities. In some (mostly) public systems resource constraints and rational triage require lower quality in some areas of care in order to provide adequate quality to the larger number of patients in most areas. Medical savings accounts and backup insurance create the ability to pay for higher quality in more limited areas. This may or may not affect the average quality of care, depending on other policy decisions discussed below.

Equity

Mobilizing private resources to finance medical savings accounts and insurance will cause middle-class citizens to pay more and low-income citizens to pay less for health care, if the state targets spending on the low-income population. Thus medical savings accounts and private health insurance make it possible to expand access to health care without increasing public resource requirements. There is no guarantee, however, that the state will take this approach.

Moreover, there are equity risks, at least during the transition. Providers that suddenly have excess demand may raise their prices as governments dismantle the price controls of regulatory public systems. In the long run, free entry into health professions and facility construction may guarantee that competitive markets will prevail, but educating health professionals and building health facilities take considerable time. The results could be enriched providers who leave the controlled public sector for the more lucrative private sector, a better delivery system for the wealthy, and fewer health resources available for everyone else. This risk may justify using state health personnel policy, at least during the transition to competitive health services markets, to guarantee that enough providers continue to serve public sector patients. Such personnel need not remain state employees, but they may be required to work one or two days a week at public facilities and receive lower remuneration for those days.

Another downside risk is that private demand may finance a high-quality upper tier in a two-tiered health system, especially where highly trained physicians and state-of-the-art hospitals are scarce. The existence of the upper tier could reduce willingness to support public financing of the lower tier. Thus it could destabilize the entire system. Cross-subsidies may be necessary, as well as vigilant attention to quality differentials between tiers.

In addition, at least with the private backup insurance mechanism, there is some risk that out-of-pocket obligations could be large relative to income. Ways to minimize this risk include limits on the out-of-pocket maximum and policies that maintain competitive or regulated health service prices. Some analysts fear that the incentives of medical savings accounts will lead patients to neglect preventive and basic care and thus frustrate the delivery of cost-effective care. There is some evidence that patients in industrial countries are not well informed about complex health services, and that when faced with strong financial incentives, they tend to reduce both necessary and unnecessary health services in equal measure (Newhouse and the Insurance Experiment Group 1993). At the same time, reports from U.S. companies that have implemented medical savings accounts in the past few years do not indicate any problems of this sort, although adequate data are not yet available for systematic and independent study (CBO 1997).

Risk selection concerns

By far the most contentious issue in the U.S. debate over medical savings accounts has been risk selection—the fear that medical savings accounts would appeal mostly to the healthy, and that payments for health care would then become more correlated with health status than they are now (see Nichols, Moon, and Wall 1997 and the references cited therein). This fear is relevant to all voluntary systems in which people have the option of buying more comprehensive insurance. Although this may be an important issue for developing countries that eschew compulsory participation, this paper focuses on a more common problem associated with the skewed distribution of health expenditures: setting the medical savings account contribution appropriately. Public and private backups are considered separately.

To illustrate the problem, consider a system that is financed entirely by public funds. In this case, setting a medical savings account level is equivalent to determining the amount that will be given to each citizen in lieu of public coverage for at least some health care needs. If the citizen uses no health services, then the state has “lost” money on that citizen because it could have used that money to pay for someone else’s health care. The theory is that by providing medical savings accounts and their incentives for parsimony, people who do use health resources will use sufficiently fewer of them to compensate for the public money that would be “wasted” on people who do not use them. Institutionalizing medical savings accounts may help teach people that health care is not free for anyone, and this may be important in a long-run development strategy. But as a short-run technical point it should be noted that it is possible to set the publicly backed medical savings account too high and thereby “lose” money if more unspent health moneys go to the healthy than the sick save (CBO 1996).

With private backup insurance, the medical savings account amount must be coordinated with the deductible of the private insurance policy that accompanies it. The analytical problem is similar to the previous case, except that in this case the insurer, not the state, is the residual loser or beneficiary if the medical savings account amount is set too high or too low relative to the deductible. If a medical savings account contribution is too large, it will encourage health care use that increases the insurer’s costs. If it is too small, it will discourage use and lead to short-run insurer profits and lower premiums in a competitive market. The simplest way to solve this coordination problem is to let private insurers offer high-deductible premiums and medical savings account packages, for then both would be set actuarially, at least in competitive equilibrium.

With public backup insurance and a privately financed medical savings account, the state faces the same contingent liability problem as the insurer in the private backup case. If the medical savings account is too small relative to the insurance program’s deductible, it will discourage use and could save the state money by not covering much health care use. If it is too large, it could increase state expenditures by increasing demand for the high-end care that the state finances. Thus the state needs to coordinate its insurance program parameters with privately financed medical

savings accounts to achieve spending and access targets. One way to do this is to dictate the parameters—contribution levels, services covered—of the privately financed medical savings account options. This process is straightforward in compulsory savings or tax systems. If the state instead allows voluntary medical savings account contributions, then it must respond to market-determined medical savings accounts. But medical savings accounts cannot find a market equilibrium until the state reveals its program parameters. This creates a strategic situation in which state and insurer interests may diverge. The general point, however, is that medical savings account and insurance parameters will be coordinated one way or the other, for one set is contingent on the other.

Singapore’s Experience

A detailed overview of Singapore’s health care delivery and financing system is provided by Phua (in this volume). This section highlights the salient policy choices and their effects.

Institutional features

Singapore is one of the East Asian “tiger” economies—a small, high-income city-state with a population of just 3 million but a per capita GNP of \$22,500 (by comparison, per capita GNP in the United States is \$25,880). Singapore’s experience with medical savings accounts can be used to draw lessons for implementation of these accounts in other countries. In 1984 Singapore became the first economy to implement medical savings accounts on a nationwide basis. And to this day the Medisave scheme remains the world’s only example of an applied medical savings account program integrated with a country’s health financing structure.

The medical savings account model that has evolved in Singapore over the past decade corresponds to the medical savings account with mixed backup described earlier. In other words, individual Medisave accounts are embedded in a broader financing framework that backs up the medical savings accounts with a cross-sectional catastrophic risk-pooling scheme called Medishield (introduced in 1990) and a means-tested safety net for the poor called Medifund (introduced in 1993). This three-tier package—Medisave,

Medishield, and Medifund—is backed up by government financing of supply-side subsidies to public providers aimed at lowering the net prices charged to patients (table 1).

The mechanics of the Singapore model are straightforward. Contributions to Medisave are an integral part of Singapore's compulsory social security coverage, provided by the Central Provident Fund (CPF). Enrollment in the CPF is mandatory for all employees (and, since July 1992, for the self-employed). The CPF is funded by a mandatory payroll tax equivalent to 40 percent of the wage bill, split evenly between employers and employees. Of this 40 percent contribution, between 6–8 percentage points are allocated to the member's Medisave account. These contributions are income tax-deductible and interest bearing. The Medisave balance can accumulate up to S\$ 19,000, beyond which incremental savings are rolled over into the CPF member's ordinary account, from which it can be withdrawn after age 55.

Medishield is also managed under the CPF umbrella—all CPF members are automatically covered, and the annual premiums are deducted from their Medisave account unless they choose to opt out. Medifund, however, is not managed by the CPF. It is an autonomous endowment fund into which periodic budget transfers are made, and from which investment income is used to finance demand-side subsidies for the poor.

Withdrawals can be made from individual Medisave accounts to pay medical bills incurred by the account holder and immediate family members. However, withdrawals are subject to two important exclusions. First, because Medisave is designed to pay for hospitalization expenses, ambulatory care is generally not covered. Second, eligible hospitalization expenses are capped (S\$ 300 a day for hospital charges plus limits for each surgical operation). Thus the average hospital bill requires a significant copayment in addition to the portion paid by Medisave. Claims for Medishield backup coverage for catastrophic expenses are subject to a high annual deductible (S\$ 1,000) as well as a 20 percent copayment. In addition, Medishield coverage excludes preexisting conditions and is subject to claim limits of S\$ 20,000 per policy year and S\$ 80,000 per lifetime. Finally, Medishield coverage expires at age 75. As a last resort, patients unable to pay their bills at government hospitals can apply for a mean-tested grant from their Hospital

Medifund Committee. This safety net is targeted at households with two adults and three children earning less than S\$ 1,400 a month (the lower one-third of the income distribution).

Effects on health policy objectives

Resource mobilization. The main policy objective guiding the introduction of medical savings accounts was to mobilize nonbudgetary resources to help pay for the increasing health costs of Singapore's aging population. Medical savings accounts were expected to absorb pressures that would otherwise drain the budget of the Ministry of Health, freeing the ministry to focus on the priority government functions of public health and protecting the poor.

A complete assessment of Medisave's effectiveness in mobilizing resources for health must take into account both static and dynamic perspectives. A static view of Medisave's importance is given by its weight in the overall structure of health financing. In 1995 Singapore's ratio of total health care costs to GDP was estimated at just 2.7 percent. Of this, private expenditures accounted for 60 percent and public budgetary spending, for 31 percent.

Public extrabudgetary expenditures financed 9.6 percent of total health spending—mostly Medisave (8.5 percent), followed by Medishield (0.8 percent) and Medifund (0.3 percent). This static perspective shows that Medisave

TABLE I
Sources of health financing in Singapore, 1984–95
(percent)

	1984	1986	1988	1990	1992	1994	1995
Public sector	37.1	37.2	33.0	32.0	34.0	39.3	40.3
Budgetary	35.3	27.8	21.3	21.2	24.4	29.7	31.0
Capital	8.5	3.6	2.9	2.5	6.5	8.8	11.2
Current (net)	26.8	24.2	18.3	18.8	17.9	20.9	19.8
Extrabudgetary	1.8	9.4	11.7	10.8	9.7	9.6	9.6
Medisave	1.8	9.4	11.7	10.7	9.4	8.8	8.5
Medishield	n.a.	n.a.	n.a.	0.0	0.3	0.5	0.7
Medishield Plus	n.a.	n.a.	n.a.	n.a.	n.a.	0.0	0.1
Medifund	n.a.	n.a.	n.a.	n.a.	n.a.	0.3	0.3
Private sector	62.9	62.8	67.0	68.0	66.0	60.7	59.7
Out-of-pocket	62.9	62.8	67.0	66.5	63.9	58.7	57.7
Private insurance	n.a.	n.a.	n.a.	n.a.	1.6	1.8	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

n.a. is not applicable.
Source: World Bank staff estimates.

has succeeded in playing an important though not at all dominant role in mobilizing resources to finance health expenditures. Indeed, if the role of Medisave is expressed relative to hospitalization expenditures—which is all it is intended to help finance—it appears much more significant (almost 30 percent).

From a dynamic perspective, however, it seems likely that Medisave will play an increasingly important role in financing as Medisave balances continue to accumulate over individual lifecycles. Today's flow of disbursements from Medisave accounts understates the flow of contributions, and therefore the accumulating stock of Medisave balances available to finance future claims. The actual Medisave payout ratio (expenditures as a share of contributions) has consistently been around 20 percent. In fact, the payout ratio has been falling because the nominal daily cap of S\$ 300 has not been adjusted since inception. For example, in 1995 Medisave payments totaled S\$ 291 million, compared with estimated contributions of S\$ 1,809 million. That same year, the cumulative savings generated by the low payout rate had already mobilized a total Medisave balance of S\$ 12,700 million—equivalent to four years' worth of Singapore's aggregate annual health spending. The dynamics of the underlying savings accumulation are illustrated by the rise in per capita balances (from S\$ 2,595 in 1985 to S\$ 5,400 in 1995) as well as by the increase in the share of employees who attain the required minimum balance by age 55 (44 percent in 1995).

Medisave's exceptional resource mobilization potential results from two crucial features. First, its revenues are supported by a sizable payroll tax base made possible by the extensive formal employment in Singapore's rich, urbanized economy. Nearly universal coverage—the number of individual Medisave accounts is equivalent to 80 percent of the population, and dependent family members are also eligible—has been achieved by tapping into the well-established social security operations of the Central Provident Fund. Second, Medisave's expenditures are sharply contained by its twin policy exclusions limiting coverage primarily to hospitalization, with defined expenditure caps.

Efficiency. Medisave's design is consistent with principles of economic efficiency in two important ways. First, by not covering low-cost, high-probability outpatient care—unlike comprehensive health insurance schemes—Medisave does

not waste its resource pool on financing medical events that are generally affordable as part of routine consumption expenditures, and for which insurance does not produce any welfare gain. Since outpatient care could consume as much as two-thirds of health expenditures, this significant exclusion frees a large amount of contributions to be rolled over into individuals' lifecycle savings pool. This, in turn, allows Medisave to achieve some degree of intertemporal risk pooling to cover intermediate financial risks, which could produce a welfare gain to its beneficiaries (depending on their rate of time preference and the payout rate). In other words, excluding outpatient coverage has an indirect dynamic resource mobilization effect by lowering the payout rate, which allows Medisave to perform an efficient intertemporal insurance function for hospitalization. Thus the outpatient exclusion turns out to be a win-win policy on both counts.

Second, the insurance effect of Medisave coverage for intermediate (capped) hospitalization costs is accompanied by efficiency incentives on both the demand and the supply sides. On the demand side, the Medisave expenditure caps mean that a significant portion of hospital bills are not covered by Medisave. World Bank estimates suggest that 60 percent of hospitalization costs in public hospitals are subsidized. The residual 40 percent that is charged to patients is split about evenly between Medisave and out-of-pocket payments. Thus patients feel the bite of individual responsibility not only in the form of an average 20 percent coinsurance fraction paid indirectly out of their Medisave account, but of another 20 percent paid directly out of pocket. On the supply side, Singapore recently imposed revenue caps on the government's restructured hospitals that limited allowable increases in hospital revenue per patient per day to 5 percent a year during 1994–96. Singapore's remarkably low ratio of health care costs to GDP is consistent with these efficiency incentives for containing costs.

Equity. Medisave's effects on equity are not directly observable in terms of different utilization rates or affordability between income groups. There are, however, two significantly pro-poor elements built into the financing framework in which Medisave is embedded.

First, government subsidies continue to play an important backup role in financing hospital care, and are targeted to the poor. As noted above, about 60 percent of public hospi-

tal costs are subsidized. Subsidies are channeled to public hospitals and reflected in public pricing policies. Explicit price discrimination is based on the four types of accommodations in public hospitals, ranging in ascending order of comfort from classes C, through B2 and B1, to A. Subsidy ratios are highly differentiated—averaging 84 percent of hospital costs in class C, 71 percent in class B2, 36 percent in class B1, and 13 percent in class A. Public hospitals provide financial counseling to prospective inpatients to facilitate selection of an affordable ward class based on the expected size of the hospital bill and the individual's Medisave balance.

These differential subsidy ratios help equalize the affordability of class-specific prices relative to the incomes and Medisave balances of the patients who select them. For example, in 1995 the 75th percentile hospital bill charged to patients in class C was S\$ 524, compared with S\$ 854 in class B2. These bills compare with median monthly household incomes of S\$ 787 in the bottom quintile of households and S\$ 1,657 in the second quintile. Government estimates suggest that at those income levels the corresponding bills were equivalent to 7.4 and 9.5 months of Medisave contributions, respectively.

The second important pro-poor financing instrument is Medifund. Although intended as a safety net of last resort for the poor, available data indicate that, during its first three years of operation, Medifund responded favorably to 99 percent of requests for financial assistance, and paid the entire medical bill in 87 percent of those cases. Patients receiving assistance accounted for 5 percent of hospital admissions at the class C and B2 levels (3.3 percent in 1993, 4.2 percent in 1994, and 5.8 percent in 1995).

Experience in Other Countries

Although China and Malaysia are exploring medical savings account options for their health systems, the United States is the only other country where medical savings accounts are part of the health financing structure and reports of their effects have been made. CBO (1997) surveys all the publicly available evidence from employers that have switched from comprehensive insurance plans to medical savings accounts and high-deductible insurance, and Bond, Heshizer, and Hrivnak (1996) surveyed twenty-seven firms offering medical savings accounts to their employees. It should be

kept in mind that the overriding goal of U.S. policy is to contain costs, not to mobilize resources for the health sector.

Ozanne (1996) focuses on how firms report their results differently, and how the overall satisfaction with medical savings accounts differs. For example, some employers report that their costs have fallen substantially, while others report modest savings. Some firms have discontinued medical savings accounts after using them for a while, though no reasons are publicly stated. CBO (1997) also outlines the data that need to be reported to properly evaluate medical savings accounts, concluding that "the reports generally do not provide enough information to fully assess how successful the plans were at reducing medical spending by and on behalf of employees and limiting adverse selection" (p. 2). Most of the reported cost data refer only to firm costs or insurance claims filed, not total costs (including employees' out-of-pocket expenditures). Furthermore, there are little data on the health status of workers before they chose their plan and the costs to employees of different plans.

Bond, Heshizer, and Hrivnak (1996) asked two basic questions of firms that had switched from comprehensive insurance plans to medical savings accounts: Did employers' costs and employees' maximum out-of-pocket liabilities go up or down? They found that employers had saved an average of 12 percent and employees' maximum out-of-pocket liability had fallen by about a third. Although both results are partly due to higher than average baseline costs, the findings show that, on average, these firms are protecting workers better than they were before medical savings accounts. Whether this increased protection is commensurate with lower employer costs in long-run equilibrium is an empirical question that will be closely examined.

One reason the U.S. experience with medical savings accounts will be watched even more closely than usual is a new law, The Health Insurance Portability and Accountability Act, signed by President Bill Clinton on 8 August 1996. Starting 1 January 1997, a limited number of employees of small firms (fewer than fifty employees) and the self-employed will be given tax preferences for setting up medical savings accounts along with their high-deductible insurance plans. The U.S. General Accounting Office is required to study this demonstration and report to Congress by 1 January 1999. At that time the tax preference for medical savings accounts may be expanded or eliminated.

Lessons for Developing Countries

Singapore's experience and our theoretical discussion lead to five broad lessons for developing countries.

Lesson 1 Medical savings accounts cannot be used alone

It is not actuarially feasible to have complete self-insurance for health care. Medical savings accounts can be important tools for mobilizing health resources, but only as part of a comprehensive set of financing instruments. Cross-sectional backup insurance must also play a major role, and public funding for catastrophic cases and for the poor will continue to be necessary. Health personnel policies and health service price controls are also likely to be useful policy tools to contain costs and maintain equity in the move toward a more market-oriented health system.

Lesson 2 Mobilizing resources will take a long time

The resource mobilization effects of medical savings accounts could help avoid the intergenerational transfer problems that will be especially acute in developing countries with rapidly aging populations and shrinking tax bases. But it may take quite a few years to accumulate sufficient medical savings account balances to transfer significant financial risk to households. Building public and provider understanding of and support for systemwide change will take time and is essential for a system based on private initiative and market incentives to work.

Lesson 3 Medical savings accounts can and should be designed to enhance efficiency

This is particularly important in systems that are mobilizing more resources and rapidly expanding their health care delivery systems. Increased resource mobilization and purchasing power will produce a significant income effect that could lead to substantial increases in health service utilization. Medical savings accounts can be structured to increase efficiency in these utilization decisions by insuring that substantial out-of-pocket payments are required before backup insurance policies take on the bulk of the financial burden. Medical savings accounts can create incentives or price

effects that counterbalance the income effect of more coverage generally. The efficiency effect of these price incentives may be enhanced by educating the public about prices and comparative costs—especially through financial counseling prior to utilization, as well as instant feedback on medical savings account balances upon billing and payment.

Lesson 4 Medical savings accounts pose equity risks

Having households pay more out of pocket at the point of service could raise already high barriers for low-income families to fully participate in the health care delivery system. Thus public subsidies for medical savings account contributions, price schedules that vary by income, and public subsidies for insurance premiums may be needed to ensure that the evolving health care system is not limited to the wealthy.

Risk selection is a less serious problem in systems with mandatory participation (and high compliance) than it is in voluntary systems. Still, the medical savings account amount must be coordinated with the deductible of the backup insurance policy that accompanies it. Uncoordinated levels are unsustainable, especially if the system mixes public and private insurance mechanisms. Unstable insurance systems always threaten the most vulnerable—that is, those with recognizably great health care needs.

Lesson 5 There are major institutional prerequisites for implementing medical savings accounts

First, per capita income levels must be high enough to finance individual contributions to medical savings accounts as well as premiums to a backup catastrophic risk pool. Second, a high degree of labor force participation in formal sector employment is needed to provide a taxable transactions base for resource mobilization. These conditions are unlikely to be met in many developing countries, and may rule out any immediate possibility of nationwide coverage with medical savings accounts. However, such accounts could still play a niche role for high-income urban employees, just as existing social insurance arrangements do for civil servants and industrial workers in many countries. Third, an effective system of payroll tax collection combined with efficient fund management and claims processing is needed to implement the financial operations associated with medical

savings accounts. This is likely to be much easier in countries that already have a social security mechanism with which medical savings accounts can be integrated. Fourth, a well-developed computerized information system linking personal savings accounts with hospital providers, backed by strict security and accounting controls, is essential. Finally, in countries where medical savings accounts and their backup insurance coverage are, for equity reasons, embedded in a health financing structure that protects the poor through self-targeted subsidies, the state must have the administrative capacity to implement a policy of price discrimination. This requires an ability to channel supply-side subsidies to providers (public or private) while monitoring and regulating the resulting hospital price structure.

Notes

1. $T(x)$ and $HH(x)$ are drawn with the commonly observed, approximately log normal shape for health expenditure density functions.

2. We assume that employers finance their contributions to employees' health insurance premiums through lower wages. Thus households are the ultimate source for employer payments as well.

3. Triage is a process for sorting injured or sick people into groups based on their need or likely benefit from immediate medical treatment. Triage is used on the battlefield, at disaster sites, in hospital emergency rooms, and anywhere else that limited medical resources must be allocated. Today, medical resources are considered to be limited virtually everywhere.

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Medical Savings Accounts and Health Care Financing in Singapore

Kai Hong Phua

Singapore maintains the world's longest-running experiment with medical savings accounts. These accounts, described generally in Nichols, Prescott, and Phua (in this volume), help defray public health care costs while ensuring that citizens receive adequate and affordable coverage. Moreover, the system encourages Singaporeans to stay healthy and minimize the use of unnecessary medical services.

Health Care System

Singapore's health care delivery system is mixed. The public system is run by the government; the private system is run by voluntary and private hospitals and practitioners. The health care delivery system comprises primary health care provision at private medical clinics and government outpatient polyclinics, and secondary and tertiary care at private and public hospitals.

About 80 percent of primary health care is provided by private practitioners; the government polyclinics provide the remaining 20 percent. For hospital care, which is more costly, the situation is reversed: 80 percent of hospital care is provided by the public sector and 20 percent is provided by the private sector.

Patients are free to choose among providers in the dual health care delivery system and can walk in for a consultation at any private clinic or government polyclinic. For emergencies patients can go to the twenty-four-hour accident and emergency departments located in government hospitals. Singapore's Civil Defense Force runs an emer-

gency ambulance service to transport accident and trauma cases and medical emergencies to the acute general hospitals.

Public health services are provided through three government ministries. The Ministry of Health is responsible for preventive, curative, and rehabilitative health services. It formulates national health policies, coordinates private and public health care, and regulates health standards and legislation. The Ministry of Environment is responsible for environmental public health services such as overseeing sewerage and waste disposal systems, ensuring the safety of food that is prepared and sold in Singapore, and controlling infectious diseases, air and water pollution and toxic chemicals and poisons. The Ministry of Labor is responsible for the industrial and occupational health of workers.

Singapore's health care philosophy emphasizes the building of a healthy population through preventive health care programs and the promotion of healthy living. Public health education programs encourage Singaporeans to adopt a healthy lifestyle and be responsible for their own health. The public is made aware of the adverse consequences of habits like smoking, alcohol consumption, unhealthy diets, and sedentary lifestyles. The government polyclinics offer every child free immunization against tuberculosis, poliomyelitis, diphtheria, whooping cough, tetanus, measles, mumps, and rubella. These immunizations are also provided at private clinics for a small fee. Health screening programs have been introduced for the early detection of common ailments like cancer, heart disease, hypertension, and diabetes mellitus (Seow and Lee 1994).

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The government ensures that good and affordable basic medical services are available to all Singaporeans by providing heavily subsidized medical services at public hospitals and government clinics. All private hospitals, medical clinics, clinical laboratories, and nursing homes are required to maintain a good standard of medical services through licensing by the Ministry of Health.

To promote personal responsibility, Singaporeans are required to use the Medisave scheme to save for their hospitalization expenses, especially during old age. This is to avoid overreliance on state welfare or medical insurance. Under the scheme every employee puts 6–8 percent of their monthly income into a personal Medisave account. These savings can be used to pay for hospitalization expenses incurred by the worker or their family. As noted, this system encourages individuals to stay healthy and minimize the use of unnecessary medical services.

The public system requires that patients make copayment for their medical services at the time of consumption to discourage unnecessary use. For people who choose to be accommodated in the lower classes of wards in public hospitals (there are four classes), hospitalization expenses are subsidized up to 80 percent by the government. Smaller subsidies are given to people who prefer the comforts and personalized service of the higher-class wards. The indigent can apply to hospital management for partial or full remission of their bills at public hospitals. No Singaporean is ever denied access to the health care system or use of the accident and emergency services, and no one is turned away by hospitals. Waiting time for an elective operation average between two and four weeks. There is no waiting for emergency admissions.

Primary health services

Primary health services include primary medical care for families, health screening and preventive health programs for schoolchildren, home nursing, day care, and rehabilitation for the elderly, and health education and promotion for all.

The public sector comprises sixteen government polyclinics located throughout the country. Each clinic provides curative outpatient medical treatment, immunization, health screening and education, investigative facilities, and

pharmacy services. About 770 private clinics are run by 1,060 medical practitioners. The average outpatient consultation fee (including medication) is about S\$ 10–15, well within the means of every Singaporean. At the government polyclinics children and the elderly (above 60 years) are given up to a 50 percent concession in their payment.

Hospital services

There are about 10,500 hospital beds in twenty-four hospitals in Singapore, or about 3.5 beds per 1,000 people. About 80 percent of these beds are in the twelve public hospitals, which have between 200 and 2,500 beds. The twelve private hospitals tend to be smaller, with 60 to 500 beds. The public hospitals set the standard of medical care and benchmark for hospital charges.

Of the twelve public hospitals, six are acute general hospitals. The others specialize in areas such as obstetrics and gynecology, psychiatry, and infectious disease. The public general hospitals provide multidisciplinary inpatient and specialist outpatient services and twenty-four-hour accident and emergency service. In addition, there are specialty institutes for cancer, heart, eye, and skin diseases. Tertiary specialist care for cardiology, renal medicine, hematology, neurology, oncology, radiotherapy, plastic and reconstructive surgery, pediatric surgery, neurosurgery, cardiothoracic surgery, and transplant surgery are centralized in two of the larger general hospitals, Singapore General Hospital and National University Hospital. The private hospitals have similar specialists and comparable facilities. The government has also introduced low-cost community hospitals for intermediate health care for the convalescent sick and aged who do not require the more expensive care of the acute general hospitals.

In public hospitals, Singaporeans can choose from different types of wards and accommodations upon admission. Patients pay more for a higher level of physical amenities, although the provision of medical care is similar for all accommodations. In most cases serious medical conditions are treated in the public hospitals by senior consultants or specialists, regardless of the type of ward chosen by the patient. The average length of stay in the general hospitals is about five days. Hospital beds are well utilized, with an average occupancy rate of about 80 percent.

Since 1985 the government has restructured (or corporatized) five of its acute hospitals and two specialty institutes to be run as private companies wholly owned by the government. This was done to give the corporatized hospitals the managerial autonomy and flexibility to promptly respond to the needs of the patients. In the process commercial accounting systems have been introduced, providing a more accurate picture of operating costs as well as instilling greater financial discipline and accountability. Corporatized hospitals are different from other private hospitals in that they receive an annual government subsidy to provide medical services. Moreover, they are expected to be managed like a nonprofit organization. The corporatized hospitals are subject to broad policy guidance by the Ministry of Health.

Dental health services

Under its dental health program the government provides free dental care for all schoolchildren. Both general and specialized dental care are provided in five hospital dental clinics, two community dental clinics, and the central Government Dental Clinic. Dental services are also available in the private sector, where 320 dental clinics run by 500 dental surgeons provide specialized as well as basic dental treatment.

As part of the government program for preventive dental care, the national drinking water supply has been fluoridated since 1956. Dental health education is provided to all patients presenting for dental treatment and to special groups such as schoolchildren. The government regularly organizes dental health campaigns to raise awareness of dental conditions and their prevention. The dental health education program is credited with lowering caries among children to one of the lowest rates in the world.

Major Concerns and Future Challenges

Although Singapore has come a long way in improving its health indicators and standards of medical service, many concerns and challenges remain. These include:

- Increasing costs of providing health care as a result of advances in medical knowledge and technology, leading to increased specialization and subspecialization and greater use of medical technology.

- Rising expectations and demand for better and more sophisticated health services by an increasingly well-informed and more affluent public.
- Rapid aging of the population, with the portion of people 60 years and above estimated to increase from 9 percent at present to 25 percent by 2030.
- Shortage of staff such as nurses and health therapists, as young people become more attracted to less demanding jobs than those in the health care services.

Singapore has sought to control supply factors in the health sector through deliberate staffing and facilities planning. On the demand side, efforts have been made to mobilize compulsory savings through the Central Provident Fund (CPF), thus rationing demand implicitly through consumer purchasing power. The government uses social planning to avoid the problems faced by most countries in maintaining a balance between demand pressures and supply capacity. The situation could potentially be more acute for a small nation like Singapore, where resources are limited and expectations are rising for more and better services.

Health expenditure

In the early 1960s total health expenditures were more than 4.5 percent of GDP. In the mid-1960s the level of public spending was similar to private spending. Since then government health spending has dropped from 2.5 percent to 1.0 percent of GDP, while private spending has ranged from 1.5 to 2.5 percent. Thus total health expenditure did not increase as fast as GDP during 1960–80.

In the early 1980s health spending as a share of GDP was just 2.5 percent (table 1). This low level was related to rapid growth in GDP. There was also steady expansion in private health spending during this period, as reflected in increasing numbers of doctors in private practice as well as private hospital admissions (table 2). Today, there are more private doctors than government doctors.

As redevelopment and rationalization of the government hospitals progressed, government spending remained high through subsidies to the Ministry of Health, although there were periodic increases in user charges to reflect rising costs. Until 1985 and before substantial cost recovery efforts were introduced, Ministry of Health subsidies were equal to about half of private health consumption.

TABLE 1

Health care expenditures in Singapore, 1975–95

(millions of Singapore dollars)

Year	Private		Public		Total		GDP
	Amount	Share of GDP (%)	Amount	Share of GDP (%)	Amount	Share of GDP (%)	
1975	249	1.86	138	1.03	387	2.89	13,373
1980	396	1.58	223	0.89	635	2.53	25,091
1985	702	1.80	419	1.08	1,198	3.08	38,924
1990	1,526	2.25	457	0.67	2,032	2.99	67,879
1995	2,368	1.96	685	0.57	3,380	2.80	120,629

Source: Ministry of Health, Singapore.

Total health spending now accounts for about 3 percent of Singapore's GDP. During the 1980s public spending was less than 1.0 percent of GDP, while private spending increased from 1.5 percent to more than 2.0 percent. Thus there has been a discernible shift toward private spending, reflecting price increases and cost recovery efforts in the public sector as well as the consumption preferences of a affluent population for a perceived higher quality of service. The government currently subsidizes about one-quarter of total health care costs.

The National Health Plan

Until recently most medical costs were incurred by government hospitals, as well as the growing private hospital sector, and financed by personal payments, limited insurance coverage, and employment benefits that include company plans for workers and their families (Fong and Phua 1985). The Ministry of Health's goal is to provide quality health care that is not only available and accessible, but that is also affordable and must be paid for.

These considerations form the basis for the National Health Plan formulated by the ministry in 1983. The plan's key proposal, the Medisave scheme, imposes compulsory savings and restructures the system of health care financing. The main objectives of the plan are to secure a healthy and productive population through active promotion of healthy lifestyles, and to improve cost efficiency in the use of health services. In addition to promoting individual responsibility for maintaining good health, the plan aims to build up financial resources in order to create the means to pay for medical care during illness (Ministry of Health 1983).

Restructuring of government hospitals

Moves to restructure health care financing were made to avoid the problems of a welfare state system financed by taxes (such as the United Kingdom's National Health Service) and to shift the burden of financing health care to individuals, families, and employers (including the private and voluntary sectors). The strategy used was to increase cost sharing by users and to progressively move the provi-

TABLE 2

Supply of health facilities and doctors in Singapore, 1960–95

Year	Number of hospitals	Government hospital beds	Private hospital beds	Admissions to government hospitals	Admissions to private hospitals	Government doctors	Private doctors
1960	14	6,537	650	na	na	282	358
1965	16	6,817	859	120,274	na	450	469
1970	16	6,891	869	135,952	na	496	867
1975	22	8,005	1,100	164,205	na	855	847
1980	26	8,078	1,507	234,502	31,326	914	1,121
1985	22	8,329	1,671	229,988	47,164	1,214	1,307
1990	21	7,922	1,837	259,541	77,562	1,831	1,593
1995	24	8,326	2,211	266,142	91,413	2,124	2,191

Source: Singapore Department of Statistics, *Yearbook of Statistics*, various years.

sion of health care to the private sector. This approach was initially carried under the banner of the privatization movement, but during its implementation the term restructuring was preferred in view of the sensitivities involved. Although the extent of privatization was never explicitly defined in the health sector, one goal was to transfer the management and control of major public hospitals away from the government (Phua 1991).

The hospital restructuring program first proceeded with the formation of a government-owned subsidiary, incorporated under the umbrella of Temasek Holdings, to manage the newly completed National University Hospital from June 1985 onward. This arrangement was later changed when the hospital was placed under the control of a new government-owned structure, the Health Corporation of Singapore. This corporation was created in April 1987 to acquire and manage all restructured government hospitals, beginning with the National Skin Centre by December 1988, Singapore General Hospital by April 1989, Kandang Kerbau Hospital and Toa Payoh Hospital by April 1990, Singapore National Eye Centre by October 1990, and Tan Tock Seng Hospital by April 1991. The National University Hospital, Singapore's main teaching hospital, was eventually put under the governance of the National University of Singapore.

Under the restructuring program public hospitals and specialty institutes have been incorporated as private companies wholly owned by the government. The current aim of the restructuring program is to give greater managerial autonomy to government hospitals so that they can provide more efficient and higher-quality service, improve productivity, control costs, and have greater flexibility to rapidly respond to changing needs.

A restructured hospital is fully autonomous and can recruit its own staff, set its own terms of remuneration, and decide on the deployment of resources. Compared with a government hospital, a restructured hospital has significantly greater autonomy over its operations. Managers of restructured hospitals are accountable to the board of directors for the hospital's performance.

Restructuring is no longer regarded as a privatization exercise. The hospitals are still 100 percent owned by the government and continue to pursue the social objectives of the Ministry of Health (WHO 1994). Restructured hospitals continue to subsidize their patients and receive an

annual subsidy from the government to offset their operating deficits. Since the restructuring program began in 1985, the government has restructured five (of seven) acute hospitals and two specialty institutions.

Medisave

In 1981 the Ministry of Health held discussions with medical professionals in the public and private sectors and in the National University of Singapore to gather ideas on how to further develop Singapore's health care system. Additional research and data collection were then conducted, including a review of health care systems elsewhere. Members of Parliament were also consulted. In 1982 the minister of health proposed the Medisave scheme and its underlying philosophy, which was followed by extensive publicity. For the next year discussions were held with community leaders from citizens' consultative committees, representative employers' federations, trade unions, and health-related associations.

A paper on the National Health Plan was released in 1983 and was widely publicized. Feedback from the public was actively solicited, and there was follow-up by the media on issues related to health care financing and delivery. Parliament then debated the National Health Plan before approving the Medisave scheme, which compels Singaporeans to set aside their own savings to meet future hospitalization expenses, and recommending that there be periodic reviews of the scheme's implementation to ensure that appropriate adjustments were made.

The Medisave scheme was given wide media coverage to explain how it would work. Printed materials were widely distributed and public talks were held in community centers, hospitals, and companies. The scheme was implemented in government hospitals on 1 April 1984.

Before the scheme was expanded to include approved private hospitals in 1986, it was introduced as a pilot project involving the new National University Hospital (run by an autonomous quasi-government company) in 1985. The scale of charges and Medisave withdrawals here were equivalent to those in government hospitals. Withdrawal rates, however, were subjected to a daily maximum for hospital charges and a maximum rate for each surgical procedure. The same limits now apply to the private hospitals.

The scheme has been modified several times based on the experience acquired. Initially, account holders were only allowed to use their Medisave accounts to pay for the full cost of hospital stays in lower-priced wards, and for part of the costs in more expensive rooms. This ceiling was later extended to cover almost all hospital charges, subject to maximum daily limits. In addition, Medisave accounts that are used to pay for higher-priced accommodations are not allowed to be overdrawn.

Implementation of the Medisave scheme, though formulated and coordinated by the Ministry of Health, required the active participation of many groups, including medical and related professionals, academics, politicians, community and grassroots leaders, employers and employees, and the media. It took more than two years to thoroughly debate the issues involved, to disseminate vital information, and to gather feedback from all levels. This approach points to the importance of bottom-up planning and community participation in the wide acceptance and successful administration of any innovative public program.

Advantages. In essence, Medisave serves as an additional source of personal financing for medical expenditures incurred by families. This shift in public cost sharing frees government tax revenue for more urgent priorities and contributes to better public health services. It is hoped that Medisave, acting as a personal health financing and payment scheme, will control effective demand through the price mechanism.

Under Medisave most payments for health care are made at the point of consumption. This close link between payment and use better reflects the real costs of health care and helps prevent excess use. Medisave also caters to different consumer preferences for a range of accommodations in public and private hospitals. Thus, within certain limits, it can be used to provide complete coverage in less comfortable wards and to subsidize more expensive charges.

Thus the Medisave scheme represents a major departure from the social security schemes of other countries in several areas. First, Medisave is not a common pool of funds to be used indiscriminately by a government facing pressures from interest groups to respond to short-term problems; instead, it is a scheme that covers only dependent family members. This fits in with the concept that the family is the basic social and economic unit of any society, with caring for the

welfare of its members (including the sick and the elderly) a collective but essentially personal responsibility. The aim is to preserve and enhance the stability of an essential social structure amid rapid environmental changes. Only if a family is unable to share in the medical expenses of its sick members does the state use public taxes to subsidize health care. The idea is to promote self-reliance, although a safety net is still available for those in need (Phua 1986).

Another feature of Medisave is that, unlike tax-based financing, it does not place an unduly heavy burden on the employed and the young, and does not subject public expenditure to the vagaries of economic cycles. The current generation of workers is obliged to save for the future, instead of relying on the uncertain taxes of the next generation for support. This is in line with official policy to promote financial independence among the elderly, whose medical needs are expected to increase (Phua 1987).

Disadvantages. Although Medisave is designed as compulsory savings for predictable hospitalization needs, especially among the elderly, it seems to have encouraged immediate spending among younger groups for expensive hospital services that are perceived to be of higher quality. There has been a dramatic shift in demand from the government hospitals to the restructured and private hospitals, and a discernible upgrading from the lower- to higher-priced beds. Since Medisave does not cover ambulatory care (except for certain procedures like hepatitis B vaccination and kidney dialysis), people may have an incentive to shift more care and spending to the hospital sector.

Moreover, there is considerable ignorance on the part of the public with regard to the limits of Medisave coverage (for example, that only S\$ 300 a day is allowed for private hospital bills), creating the illusion of more money being available than in reality. Many people also view (wrongly) Medisave funds as frozen assets that, if unspent, are retained by the government. Thus many patients opt for more luxurious services than they would otherwise consume. In practice, Medisave has acted more like a supplementary financing scheme to enable the consumption of upgraded hospital services, as well as a mechanism for recovering costs in the public hospital system.

A critical assumption of the Medisave scheme is that patients are the best judge of how their savings should be

spent on health care. However, effective health care decisionmaking requires considerable knowledge about prices and the quality and probable outcome of medical treatments, as well as a high standard of ethics on the part of practitioners. Since many of these preconditions are not in place, there are grounds to intervene for the public good and to protect consumers' interests.

Most of the scheme's current disadvantages can be corrected by better educating the public and introducing checks and balances, including cost control limits and incentives aimed at both the supply and demand sides. Revenue caps have been imposed on the public hospitals, which also have to maintain at least two-thirds of their hospital beds for subsidized patients. Besides encouraging the prudent use of Medisave, financial counseling of patients and family members prior to admission and other such measures (including medical audits) are being instituted to prevent abuse and to maintain standards. To discourage unnecessary hospitalization, Medisave has been extended to cover more ambulatory care (such as day surgery and certain expensive outpatient services). Although the Medisave account covers the acute hospitalization needs of the typical family, it is insufficient to cover major catastrophic illnesses. Such illnesses require greater risk sharing and financing that insurance could better provide for.

Medishield

Since the 1950s the issue of health insurance has cropped up in various discussions about its many shortcomings and lack of applicability for Singapore (Ministry of Culture 1982). In the deliberations that led to the formulation of the National Health Plan and the Medisave scheme, the health insurance option was dismissed because of the negative experiences of other countries' health insurance systems. Among the main weaknesses were:

- The illusion of a free service at the point of consumption, encouraging overuse and escalating costs.
- Lack of incentives for the consumer to stay well and for the provider to economize since they are reimbursed for any utilization.

Thus the Medisave scheme was conceived to avoid the pitfalls of third-party reimbursement systems financed from insurance premiums or taxes (Ng 1988).

After Medisave was implemented, however, it became apparent that there was still a need for coverage of major illnesses requiring expensive and prolonged treatment. To cater to such needs, a low-cost national catastrophic illness insurance scheme, known as the Medishield scheme, was introduced on 1 July 1990. To avoid the problems associated with prepaid insurance, there is a system of deductibles and coinsurance. All members of the Central Provident Fund (CPF) who are citizens or permanent residents are automatically covered unless they opt out of the scheme. Participation of CPF members' immediate dependents is voluntary. Non-CPF members may opt into the scheme by contributing toward Medisave. CPF members and their dependents are insured up to the age of 70. To encourage people to participate in the scheme, premiums are low and affordable, and vary by age group to minimize cross-subsidy. Annual premiums range from S\$ 12 for people below 30 to S\$ 96 for people between 60 and 65, to S\$ 132 for people in the 65–70 age group. Premiums can be paid from Medisave funds.

Reimbursement is on actual expenses incurred under the plan (up to a limit) less the initial deductible of S\$ 500–1,000, which is borne by the insured. The copayment is 20 percent, and there are annual and lifetime claim limits. Medisave can be used to pay the deductibles and copayments. Deductibles are intentionally kept high to avoid excessive demand for medical services. (Deductibles were pegged at the level where only 10 percent of hospitalizations would be eligible for Medishield claims.)

Medifund

Despite the widespread coverage of Medisave and Medishield, a small number of Singaporeans lack adequate savings or family support to pay for health care. This group includes older cohorts of low-income individuals without families who have insufficient or no provident fund accounts. The idea of setting up a large endowment fund to help fill this financial gap was broached in 1991, and parliamentary approval was granted in January 1992. According to the Medical Endowment Act, the government will deposit grants in special accounts for public hospitals to defray part or all of the bills incurred by eligible patients.

Medifund was given start-up capital of S\$ 200 million and is supplemented by S\$ 100 million a year from bud-

getary surplus. A Medifund Advisory Council was formed to advise on the use of income derived from the endowment. Each hospital has appointed a Medifund committee to approve payments based on the guidelines established by the council.

Since April 1993 needy patients have been able to apply for partial or full waivers of their medical fees through medical social workers. Prior to this, waivers and subsidies had to be absorbed by individual hospitals through government subventions from general tax revenues. Thus Medifund further relieves the dependency on taxation as a means of health care financing.

Recent health policies

Demographic, epidemiological, social, and economic trends indicate that the tax-based health care financing system will be strained even further in the years to come. The main objectives of health care financing policies are to strengthen the safety net to protect people against rising health costs as well as to control costs. Medisave forms the first layer of this safety net, based on compulsory savings and a family support system. Medishield provides the next layer of the safety net, covering major chronic conditions requiring long-term and high-cost health care. Medifund is an additional layer, financed through an endowment fund created from surplus revenue. This multilayered financing system should be able to withstand the increasing burden of health care costs as well as provide a greater degree of social security in the years ahead. Through a multipronged approach using a public-private mix of health services, a varying level of subsidy and cost sharing, and Medisave, Medishield, and Medifund, it is hoped that a more controlled increase in health expenditure will be achieved in line with the rate of inflation and economic growth (Kwa 1989).

A Review Committee on National Health Policies was appointed in 1991 to review future policy directions for the country. The first part of its report, presented in October 1991, emphasized health promotion and disease prevention as the basic philosophy guiding Singapore's health care policies (Ministry of Health 1991). Its main report, presented in February 1992, recommended priority areas for action and measures for improving health care while con-

trolling costs. Suggestions were made on staffing needs, medical specialization and training, and professional standards and quality of care. The recommendations focused on health care financing, defining the government's role in financing health care and managing health care costs (Ministry of Health 1992).

The government accepted the recommendations of the review committee, and a Ministerial Committee on Health Policies has finalized the course of action to be implemented. A parliamentary paper on health care, presented in October 1993, set out the government's approach to controlling health care costs, in order to keep basic health care affordable to all Singaporeans. Among the cost-containment measures:

- Defining a good basic medical package
- Regulating the supply of doctors and hospitals
- Regulating subvented hospitals through revenue caps and subsidies
- Encouraging greater cost sharing in medical insurance and employment benefits
- Controlling prices in the private sector
- Coordinating medical research and development
- Coordinating medical education and training (Singapore 1993).

Although many of these policies are being implemented, it is too early to evaluate their full impact.

Conclusion and Recommendations

Can Singapore continue to ensure that its health financing system will develop along a balanced path to achieve equity, efficiency, and cost-effectiveness in delivering health care? Given past experience with the traditional tax-funded system, as well as with the Medisave and the Medishield schemes, what other modifications are necessary? Current interest seems to focus not on whether alternative methods of health care financing can play a greater role, but whether new forms of financing could be successfully implemented to contain costs.

Any viable financing instrument must be able to balance supply and demand on a sustainable basis, minimize moral hazard and abuse, avoid labor market distortions, and resolve distributional effects across social groups (such as intergenerational income transfers). Against these criteria the checks

and balances built into Singapore's health care financing system seem to provide adequate security. Given continued robust economic growth, health care spending as a share of GDP may appear deceptively low at present. As the economy matures, pressures can be expected from employers to lower health care consumption given rising wage costs.

Among the key issues that will continue to be addressed in the health sector is the need to meet the ever-rising expectations of an aging, affluent population for the latest medical technology. Can the push toward achieving excellence in health care and developing Singapore as a regional hi-tech medical center be balanced with more socially acceptable means of cost sharing, while dampening the inflationary effects of rapid growth? In the future cost-containment policies aimed at both supply and demand will have to be implemented judiciously throughout the health care system.

Although elements of Singapore's health financing system may not be entirely transferable to other countries, the system points to general lessons for health care financing strategies. The concept of compulsory savings has many advantages over traditional financing methods, but it requires several prerequisites to work. Among them:

- A high level of labor force participation in formal employment at sustainable growth rates.
- An effective system of payroll collection and contribution, as well as efficient fund management and payment.
- A well-developed computerized information system linking personal medical savings accounts with hospitals and health care providers, in addition to security features and accounting controls.

These requirements may not be possible in large countries where there are wide disparities in labor force participation rates and where there would be difficulties in enforcing mandatory contributions from employers on a regular basis. But savings schemes are more politically acceptable, especially if they are personalized accounts with appreciating interest and are portable despite employment changes.

When resources are pooled among family members or combined with insurance mechanisms for catastrophic coverage, compulsory savings are a potentially powerful way to finance health care and old age security on a sustainable basis (allowing for lifetime risk-adjusted contributions) without distorting economic growth.

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