

MOBILIZATION OF  
DOMESTIC RESOURCES  
FOR HEALTH

This is a report of the Working Group and so no specific authorship for the various parts of the text is given. However, the text is based on a series of background papers, which are listed with their authors in Annex 2.

MOBILIZATION OF  
DOMESTIC RESOURCES  
FOR HEALTH

THE REPORT OF WORKING GROUP 3 OF THE COMMISSION ON  
MACROECONOMICS AND HEALTH

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AUGUST 2002



WORLD HEALTH ORGANIZATION  
GENEVA

WHO Library Cataloguing-in-Publication Data

Mobilization of domestic resources for health: the report of Working Group 3 of the Commission on Macroeconomics and Health.

1. Financing, Health 2. Financing, Government – utilization 3. State medicine – economics 4. Taxes 5. Delivery of health care – economics 6. Efficiency, Organizational 7. Financial management 8. Health resources – utilization 9. Developing countries

ISBN 92 4 159011 4 (NLM Classification: WA 30)

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World Health Organization  
Marketing and Dissemination  
1211 Geneva 27, Switzerland  
tel: (41-22) 791 2476  
fax: (41-22) 791 4857  
email: [bookorders@who.int](mailto:bookorders@who.int)

Printed in Canada

*Editor:* Hope Steele

*Design and production:* Digital Design Group, Newton, MA USA

# CONTENTS

FOREWORD .....	.VII
PREFACE .....	.XI
EXECUTIVE SUMMARY .....	.I
1. OBJECTIVES, METHODS, AND SEQUENCING OF HEALTH FINANCING .....	.7
1.1 Introduction .....	.7
1.2 Financing and health system outcomes .....	.8
1.3 Financing methods .....	.9
1.4 The context of health financing .....	.13
1.5 Efficiency gains: Allocation of resource and production of services .....	.16
1.6 A coherent financing strategy and conclusions .....	.18
2. DATA AND COMMENTARY ON HEALTH FINANCING .....	.23
2.1 Scope of analysis and sources of information .....	.23
2.2 How much do countries spend on health? .....	.37
2.3 Paying beforehand or at time of need .....	.43
2.4 How is prepayment financed? .....	.46
2.5 How much of public spending goes on health? .....	.49
2.6 Summing up .....	.50
2.7 Some speculation: needs versus actual spending, total and public .....	.54
3. SCOPE TO MOBILIZE ADDITIONAL DOMESTIC RESOURCES .....	.57
3.1 How much do countries raise by taxation and could they raise more to spend on health? .....	.57
3.2 Macroeconomic considerations .....	.59
3.3 Taxation .....	.60
3.4 Earmarking .....	.65
3.5 Other possible sources of revenue .....	.66
3.6 Conclusions .....	.73
4. ALTERNATIVE WAYS OF FINANCING HEALTH IN THE INFORMAL SECTOR .....	.75
4.1 Origins of social exclusion in health care financing .....	.75
4.2 Rich-poor differences in financial protection against cost of illness .....	.76
4.3 Role of communities .....	.78
4.4 Assessment of impact, strengths, and weaknesses .....	.82
4.5 Discussion .....	.84
4.6 Conclusions and recommendations .....	.99
5. FINANCE AND PROVISION OF HEALTH SERVICES IN MIDDLE-INCOME COUNTRIES .....	.101
5.1 Introduction .....	.101
5.2 Resource mobilization and provider compensation .....	.102
5.3 In conclusion .....	.110
6. FINANCING HEALTH FROM THE HIPC INITIATIVE .....	.113
6.1 Description .....	.113
6.2 Decrease in debt service .....	.113
6.3 Poverty reduction measures .....	.115
6.4 Monitoring use of HIPC debt relief .....	.120
7. FINANCING HEALTH SYSTEMS THROUGH EFFICIENCY GAINS .....	.123
7.1 Introduction .....	.123
7.2 Defining efficiency and efficiency concepts .....	.123
7.3 The causes of technical and economic inefficiency .....	.127

7.4	<i>Interactions between allocative and technical/economic efficiency</i>	127
7.5	<i>Measuring efficiency and the potential for improvement</i>	130
7.6	<i>The scale of inefficiency in health care production: international evidence</i>	131
7.7	<i>A proposed framework for addressing technical and economic inefficiency</i>	135
8.	<b>DOMESTIC MACROECONOMIC ISSUES ASSOCIATED WITH THE USE OF EXTERNAL FUNDS</b>	139
8.1	<i>Introduction</i>	139
8.2	<i>Direct macroeconomic impact</i>	139
8.3	<i>Indirect policy reactions</i>	140
8.4	<i>Budget uncertainty and fiscal sustainability</i>	141
8.5	<i>Absorptive capacity</i>	142
8.6	<i>Appropriate policy responses</i>	143
	<b>REFERENCES</b>	145
	<b>ANNEX 1 LIST OF ACRONYMS</b>	157
	<b>ANNEX 2 BACKGROUND PAPERS PREPARED FOR WORKING GROUP 3</b>	159
	<b>ANNEX 3 LIST OF TABLES, FIGURES, AND BOXES</b>	161
	<b>COMMISSIONERS</b>	163
	<b>REPORT TEAM</b>	167
	<i>Co-Chairs</i>	167
	<i>Members</i>	167

## FOREWORD

The Commission on Macroeconomics and Health (CMH) was launched in January 2000 by Dr Gro Harlem Brundtland, Director-General of the World Health Organization. Its mission was to analyse the impact of health on development and to examine ways in which health-related investments could spur economic development. The Commission worked to develop specific recommendations that would save lives, reduce poverty, and spur economic growth through a scaling up of investments in the health sector of developing countries. The final report of the Commission, *Macroeconomics and Health: Investing in Health for Economic Development*, was released in December 2001.

The Commission focused its work on the world's poorest people, in the world's poorest countries. Millions of impoverished people die every year of conditions that are readily prevented or treated. Technologies exist to avert millions of deaths due to malaria, TB, HIV/AIDS, diarrhoeal disease, respiratory infection, and other killers. These tragic deaths—and the enormous economic and social costs associated with them—reflect the basic fact that essential life-saving health services are out of reach of hundreds of millions of the world's poor. And yet, without extending these life-saving interventions, poverty is likely to be exacerbated and to be passed to the next generation. The economic costs of ill health, the Commission documented, are enormous and pervasive.

The findings of the Commission are both stark and also encouraging. It will take a lot of money and much more political and organizational effort than has been seen in the past generation to accomplish the tasks at hand. Curbing the HIV/AIDS pandemic, or the resurgence of tuberculosis and malaria, or major killers of children such as diarrhoeal disease and vaccine-preventable diseases, will not happen by itself. Yet the task is feasible, with breathtaking achievements possible. The Commission calculates that if the donor countries contribute around 0.1% of their GNP—one penny for every \$10 of income—and if that effort is matched by a suitable increase in effort within the low-income countries themselves, it should prove possible to avert 8 million deaths per year by the end of this decade. As of 2007, the donor contribution would be around US\$ 27 billion per year, or roughly four times the current US\$ 6 billion in official development assistance for health. The reduction in human suffer-

ing would be enormous. The economic gains would also be striking, around the order of US\$ 360 billion per year during the period 2015–2020, several times the costs of scaling up the health interventions themselves, counting both the donor and recipient country efforts.

To arrive at its conclusions, the Commission organized its research and intensive analysis mainly within six working groups, which in turn engaged the energies of a worldwide network of experts in public health, finance, and economics. Each working group held several meetings around the world, commissioned papers, debated alternative approaches, circulated drafts to the policy and scholarly community, and made detailed recommendations to the full Commission in the form of a Working Group Report. Working group members included CMH members, staff of various international agencies, and experts from governments, academic institutions, NGOs, and the private sector. The Working Group Reports, prepared by the working group co-chairs in consultation with the entire working group membership, are a synthesis of the commissioned background papers and the culmination of each working group's detailed review of the literature and intensive deliberations.

The Commission's findings are therefore based heavily on the crucial work of the six working groups, each of which was responsible for taking stock of the existing knowledge base on a particular topic in order to identify implications for policy and for extending that knowledge base as appropriate. The working groups, with their titles, topics, and chairs, are:

- Working Group 1, Health, Economic Growth, and Poverty Reduction, addressed the impact of health investments on poverty reduction and economic growth. Co-Chairs are Sir George Alleyne (Pan American Health Organization, USA) and Professor Daniel Cohen (Ecole normale supérieure, Paris, France).
- Working Group 2, Global Public Goods for Health, studied multi-country policies, programmes, and initiatives having a positive impact on health that extends beyond the borders of any specific country. Co-Chairs are Professor Richard Feachem (Global Fund to Fight AIDS, Tuberculosis, and Malaria, Geneva, Switzerland) and Professor Jeffrey D. Sachs (The Earth Institute at Columbia University, New York, USA).
- Working Group 3, Mobilization of Domestic Resources for Health, assessed the economic consequences of alternative approaches to resource mobilizations for health systems and interventions from domestic resources. Co-Chairs are Dr Alan Tait (former senior IMF

official) and Professor Kwesi Botchwey (The Earth Institute at Columbia University, New York, USA).

- Working Group 4, Health and the International Economy, examined trade in health services, health commodities, and health insurance; patents for medicines and trade-related intellectual property rights; international movements of risk factors; international migration of health workers; health conditions and health finance policies as rationales for protection; and other ways that trade may be affecting the health sector. The Chair of this working group is Dr Isher Judge Ahluwalia (School of Public Affairs, University of Maryland, College Park, USA).
- Working Group 5, Improving Health Outcomes of the Poor, examined the technical options, constraints, and costs for mounting a major global effort to improve the health of the poor dramatically by 2015. Co-Chairs for this working group are Dr Prabhat Jha (University of Toronto, Canada) and Professor Anne Mills (London School of Hygiene and Tropical Medicine, UK).
- Working Group 6, International Development Assistance and Health, reviewed health implications of development assistance policies including modalities relating to economic crisis and debt relief. It focused on the policies and approaches of international developmental agencies. One emphasis was on the appropriate balance between country-specific work and support for activities that address international externalities or provision of international public goods. The Co-Chairs are Mr Zephirin Diabre (United Nations Development Programme, USA), Mr Christopher Lovelace (World Bank, USA), and Ms Carin Norberg (Transparency International, Germany).

It is my great pleasure and honour to introduce *Mobilization of Domestic Resources for Health: The Report of Working Group 3 of the Commission on Macroeconomics and Health*. This crucial report analyses the mobilization of domestic resources for health through taxation, insurance, and other payment mechanisms. The Working Group had several goals. First, it analysed the levels and types of resources that are now being mobilized domestically within the low-income countries, and examined how these patterns are influenced by the stage of development of the economy among other factors. The basic conclusion in this regard is that poor countries have very limited means to pay for their own health. Low-income countries often mobilize around 4% of GNP for health, but since average incomes are in the range of a few hundred dollars per person per year, the

resulting levels of health spending are inadequate to cover essential health interventions. A country at US\$ 300 per capita that raises 4% of GNP for health achieves only US\$ 12 per person per year, much less than the basic needs of around US\$ 35 to 40 per year demonstrated by the calculations of Working Group 5. Second, the Working Group assessed the limited prospects for increased resource mobilization from within the countries. It concluded that we should call for greater policy efforts in the low-income countries, and might expect that with the needed political leadership, budgetary resources for public health might rise by perhaps 1% to 2% of GNP during the period to 2015. For a poor country at US\$ 300 per capita, that would add a significant US\$ 6 per person per year, important but far from enough to ensure widespread access to essential health services. This suggests that donor funding will indeed be needed to close the gap. Third, and crucially, the Working Group assessed ways in which current and increased domestic spending could be made more effective and equitable. The Working Group stressed that, even in very low-income countries, community financing schemes could improve the quality and responsiveness of health services while also reducing the burdens of out-of-pocket expenditures. In middle-income countries, the Working Group stresses the risks of a rapid escalation of health-care costs, and underscores that such risks can best be handled if the government is committed to broad-based financing schemes and appropriate regulatory policies.

The Commission, together with the working groups' co-chairs and members, gratefully acknowledges the financial and technical support provided by the donor community. A particular thank you is due to the Bill and Melinda Gates Foundation, the Government of Ireland, the Government of Norway, the Government of Sweden, the Grand Duchy of Luxembourg, the Rockefeller Foundation, the United Kingdom Department for International Development, and the United Nations Foundation.

Jeffrey D. Sachs

Chair of the Commission on Macroeconomics and Health

August 2002

## PREFACE

The Commission on Macroeconomics and Health assumes that international assistance for health will be more readily forthcoming if donors know that countries are already doing their best to raise domestic resources to finance health care and that these resources are being raised and spent efficiently. The first chapter was conceived as a review of what countries are doing to finance health care and how it might be done better. Given the time and resources available, the review had to be selective. Working Group 3 (WG3) decided to select those topics that its members thought most important, where it might add something to the debate, where a review of the current state of affairs might be most useful to the Commission, and where it might point the way forward.

The Group thought it useful to start by providing an empirically supported framework within which to think about health financing. The Report tries to present up-to-date figures using, principally, World Health Organization (WHO), World Bank, and International Monetary Fund (IMF) data.

The Group decided to concentrate (but not exclusively) on mobilizing resources to improve access to health services for the poor. Although the poor are by no means confined to developing countries, that is where the majority are found. Furthermore, within developing countries, the largest numbers and those in greatest poverty and need of health care are found in the rural areas. Finally, although the health needs of Africa command attention, Working Group 3 recognizes that the really daunting numbers of the rural poor are found in India and China; the problems of raising domestic finance to care for the health of these billions are truly of Himalayan proportions and complexity, requiring support at both national and international levels.

The Group agrees with the importance of several conventional areas for improving health resource and use. For example, overall government budget reviews should soberly weigh the returns to better health care from using resources at present committed to agricultural and industrial subsidies, excessive military expenditures, and dubious public investments. Similarly, innovations in conventional and micro-insurance products might help health care reach the poor. However, the Group decided that its most useful and original contribution might arise from an in-depth

review of community-based health financing. Although this may not have the glamour of huge urban medical investments, it may provide the seed that could grow to ensure health care for low-income populations, including the poorest of the poor. The Working Group considers that its research and findings should be used to push forward community-financed health care schemes, particularly in Africa and Asia.

The Group did not have the time or finance to conduct research into financing health care in richer countries. However, our review of the issues suggests ways to reform health financing, including improvements in technical efficiency that are important in both rich and poor countries.

In every country, the health sector has to fight for its corner against all the other claimants for resources. We consider it has an unassailable case, but it must show that the resources are used efficiently and distributed fairly so that they get to the people who really need them. We hope this Report will help to achieve this crucial social, economic, and political objective.

Kwesi Botchwey and Alan Tait

New York, USA, and Canterbury, Kent, UK

August 2002

## EXECUTIVE SUMMARY

Chapter 1 examines how nations have used various combinations of health financing to mobilize domestic resources. We found that no country relies on only one method of financing, and the best mix will depend on a country's income level, taxation capacity, and culture. The combination of sources used affects the amount of resources that can be mobilized, patterns of equity, efficiency, and cost of health care. Because not every financing method can be used for every population group, countries do better when they consider all of their people when they develop their financing strategy for health care. For example, social insurance is possible only for workers in the formal sector, private insurance is affordable only by affluent households, and community financing is most feasible for closely knit rural communities. For a nation to achieve its health goals, it has to match methods of financing to its population groups, using general budgetary revenue to fill in gaps or compensate for the limits of different methods.

*We recommend that policy-makers of every low- and middle-income country review critically how health care is financed in their country. They should then prepare a coherent and realistic financing strategy, based on this review, for themselves, donors, and nongovernmental organizations (NGOs). The strategy should value horizontal and vertical equity and be realistic about government's capacity to collect taxes. We suggest a strategy in which the general budgetary revenue, the most equitable and flexible source of financing, would be used to correct the shortcomings left by other financing methods, would fund public goods and essential health care, and would subsidize the poor. A coherent strategy to integrate health care for the various population groups can increase spending on health, facilitate the pooling of risks, improve equity, and achieve gains in efficiency and quality—as well as provide the framework for discussion with civil society, the medical professions, NGOs, and donors.*

Chapter 2 summarizes and assesses health financing worldwide. We note that total expenditure, public spending, and out-of-pocket spending all rise rapidly as countries become richer, with elasticities in each of these areas that are close to constant, each slightly above 1.0 and not very different from one another. In consequence, there is a strong correlation between public spending and total spending on health. When percentage

shares rather than absolute expenditures are examined, some of them converge towards a common pattern as income rises. As the variation in health spending between countries narrows, the public share increases, and the share of out-of-pocket spending shrinks. There is no such convergence for the share of GDP spent on health in total, the share of spending that is tax-funded or financed from general budgetary revenues rather than social security, or the share of health spending as a proportion of total government spending. In many low-income countries, health spending is so low it cannot even meet the cost of a package of highly justified interventions to improve health. In these countries, out-of-pocket spending is already high enough to be catastrophic for many households, and private payment is limited to the wealthy and some of those in formal employment. Moreover, in richer countries, public spending as a share of total health expenditure increases with a country's income, whereas the need for public financing runs the other way—it is greater in poor countries, where the possibilities for private finance are more limited and public goods in health are relatively more important.

*We recommend that countries promote increased prepayment and limit out-of-pocket spending to what households might readily be expected to afford. This will increase financial protection, reduce the risks of impoverishment, and allow for greater and more equitable access to health care. Because it is difficult for the poor to increase private prepayment, any increase in prepayment will have to come from public sources.*

Examination of the statistics in Chapter 3 shows large variations in countries' ability to raise tax revenue within the sample groups of countries by income per capita. This suggests that most countries might be able to raise, say, 1 to 2% of GDP more revenue in general, or for health in particular. The reasons why they do not do so are deeply embedded in the political, social, industrial, and economic structures of each country. A brief review of taxes suggests that excises (on alcohol, tobacco, petroleum products, and vehicles) usually have the potential to generate extra revenue; that a truly general sales tax (usually a value-added tax) represents the greatest potential for secure and sustained revenue; and that corporate and personal income taxes are probably better considered as significant sources of revenue in the longer run. Earmarking a percentage of a relatively stable revenue tax (from tobacco, for example) especially for health spending is reviewed; we argue that earmarking might have a role where it is difficult to get a sustained commitment to health spending or to protect the health budget from cutbacks. To mobilize additional resources (as in some Indian states), any user fees must be designed to exempt the poor

and the revenues must be retained by the facilities levying the fees, which should also have autonomy over their use. Public budgets should not be allowed to offset the extra revenue raised.

*We recommend that strategies for revenue collection should rely on those taxes that can raise substantial amounts of revenue at a relatively low administrative cost. Essentially, the taxes are excises and a truly broad-based general sales tax (such as a value-added tax). Although equity is clearly a critical consideration in any revenue-raising system, equity in many countries is better served through well-targeted expenditures, including public health care for the poor. Additional revenue for health should be sought by eliminating badly targeted and wasteful tax incentives and subsidies. We recommend that public funding for health be increased, in part, by reducing the level of public expenditure on items best left to the private sector and by better-targeted subsidies and transfers.*

For many years, low- and middle-income countries have tried to leapfrog the development process needed to expand universal health coverage using traditional public financing. Few succeed, and the poor often continue to make significant out-of-pocket payments for health. Chapter 4 examines the role that community financing can play in addressing this problem, based on evidence from micro- and macro-level analysis, and from Asian and African country examples. The chapter demonstrates that community financing can provide an incremental, albeit first, step to improve financial protection and access to health services for the poor. In the case of the more successful community-financing schemes, “ownership” of the programmes could hardly be higher. But important constraints must be overcome for such schemes to serve the poor in an effective manner. Left to themselves, community-financing schemes tend to mobilize insufficient resources to cover the cost of priority health services for the poor, cover only small population groups, lack insurance and re-insurance mechanisms to spread risks across large populations, fail to encourage prevention or use of effective therapies, rely on management staff with limited professional training, and exist in isolation from the formal financing and provider networks. The background research for this chapter indicated ways to overcome these constraints. Donors and NGOs can have a direct impact on improving financial protection and access to health services for the poor by supporting community-financing schemes. This may be done either in collaboration with governments or directly, in cases where government involvement is lacking. Governments can match and even substantially increase the funds raised locally by subsidizing the premiums of the poor and providing direct grants to the schemes them-

selves. They can help establish insurance and re-insurance mechanisms to spread risks across larger population groups. They can train and support local healers, nurses, and clinics in health facilities that are within reach of poor communities in order to provide more effective and higher-quality care. They can train local bookkeepers and managers. They can also ensure that existing health networks reach out to such community schemes for referrals and provide higher levels of care for serious conditions that cannot be competently treated at the local level. Such actions can help ensure that payments already made by poor and excluded populations contribute more effectively to financial protection against the cost of illness; they also improve access to health care.

*We recommend that policy-makers in low- and middle-income countries encourage and provide support to expand community-financing schemes to cover rural and other excluded population groups in parallel with national mechanisms of health care financing. In collaboration with governments or independently, donors and NGOs should try to seek out local communities willing to cooperate and expand coverage under community-financing schemes. This would be a fruitful way for them to engage local communities, to provide financial protection against the cost of illness, to decentralize health responsibilities, and to foster community commitment to establish and maintain local health care networks. Effective support for community-financing schemes should include increased and well-targeted subsidies to pay for the premiums of low-income populations; use of insurance to protect against expenditure fluctuations and use of re-insurance to enlarge the effective size of small risk pools; use of effective prevention and case management techniques to limit expenditure fluctuations; technical support to strengthen the management of local schemes; and establishment and strengthening links with the formal financing and provider networks. We recognize that there is the potential for disagreement between central and local policy-makers in this area of health financing, but it is because of the potential for success of community-based initiatives in helping rural and excluded groups that we have examined ways to overcome known past limitations of such schemes.*

Chapter 5 explores the question: “Why do market economies choose public-sector finance for much of the provision of personal clinical services?” If governments fail to play a major role, efficiency losses may be substantial and equity suffers. A consequence of a substantial public-sector role in finance of health services appears to be a levelling off in the growth rate of public health spending.

*We recommend that policy-makers, particularly in middle-income and emerging-market economies, should learn from the Organisation for Economic Co-operation and Development (OECD) experience to avoid excessive reliance on direct user charges for health care. However, policy-makers should also expand the use of incentive-based approaches to enhance efficiency in the supply of services. Public reimbursements should be available to private suppliers so that there is a “level playing field” for provision of essential packages of services. Even if service provision remains in the public sector, competitive tendering for inputs can reduce costs and enhance quality.*

Chapter 6 shows that debt relief provided by the Heavily Indebted Poor Countries (HIPC) Initiative should free up budgetary resources of around 2% of GDP annually from 2001 to 2005. These resources should be used to reduce poverty, including an increase in spending on health care. The extra resources available to help the poor in the 32 countries covered in the survey will be delineated in a Poverty Reduction Strategy Paper (PRSP), and it is crucial that the case for increased health spending is made in this context. This will require improving the efficiency of spending and monitoring the delivery of pro-poor health spending more rigorously. The PRSPs should also help identify programmes, improve public-sector expenditure management, and improve social indicators.

*We recommend that policy-makers in all low-income countries should monitor and learn from the experiences of the PRSPs as they become available. They should ensure that significant external resources gained from the HIPC or other sources are used to promote health care that is accessible to the poor.*

It is not simply the amount spent on health that is important, but also the way it is spent. Chapter 7 considers and illustrates various forms of “efficiency” in health care. Data deficiency is a problem, and most health systems need to improve their reporting systems. International estimates of inefficiency in health spending indicate the scope for significant real savings. For example, hospital inefficiencies could easily tie up 10% or more of total health spending. We suggest a framework to address technical and economic inefficiency in health care and discuss the factors likely to constrain or enable improvements in efficiency. Complex and unpalatable choices must be made in order to realize significant efficiency gains.

*We recommend that policy-makers scrutinize health expenditures and practices to learn from best practices both within their own systems and from systems outside their own countries. Substantial savings are almost*

*certainly available through improvements in technical as well as allocative efficiency.*

Large new external transfers of resources for health carry implications for macroeconomic management of the economy. We raise this issue in Chapter 8 and look briefly at the short-run demand impact and the possible indirect policy responses.

*We recommend that governments consider establishing funds to act as counterpart financing to health care aid, phasing in programmes for aid, and, in the longer term, mobilizing domestic revenue to replace aid.*

# I. OBJECTIVES, METHODS, AND SEQUENCING OF HEALTH FINANCING

## I.1 INTRODUCTION

It seems likely that many low- and middle-income countries are not spending enough money on the health care of their citizens. Can these nations mobilize more funds from their own resources for health care? It depends. The amount that can be mobilized is related to a nation's financing strategy for health.

*Financing* refers to the way in which money is raised to fund health activities as well as how it is used (that is, the allocation of funds). There are five methods of financing health activities: general and earmarked taxes, social insurance, private insurance, community financing, and out-of-pocket payments. A financing strategy, which determines how these different methods are combined, is based on the amount of funds available for health care, who controls the resources, and who bears the financial burden. The strategy chosen has implications for the health status and financial risk protection of various income and age groups. This Working Group developed a framework that suggests ways to think about equity and health care and provides an approach to thinking strategically about health finance for different population groups.

This framework involves four steps. First, bearing in mind that a health system is a means to an end, funds are mobilized to finance programmes that will, it is hoped, produce the results desired by a society. Thus the first step of financing strategy involves deciding the nation's goals for its health system. Second, countries also have different needs in terms of health care and different economic capacities to raise funds. Analysing and incorporating the country's own situation in the design of a financing strategy is the second step. Third, when nations search for financing strategies to improve the performance of their health systems, they need to know the relative strengths and weaknesses of the five financing methods. The fourth and final part of the framework involves thinking about the alternative combinations available to achieve a society's goals by breaking the population down into income and employment groups. We examine the possible financing methods that are feasible for each group. The strategy is to hold the general revenue fund, the most

**Table 1.1** MULTIPLE OBJECTIVES OF A HEALTH SYSTEM

	Health status	Financial risk protection	Public satisfaction
Level			
Equitable distribution			

flexible and most equitable source of finance, as the resource to fill the gaps and to complement other financing methods. This general revenue fund should be used for three major purposes: to provide public goods, promote equity, and offer incentives for peasants and workers in the informal sector to prepay for health care.

## 1.2 FINANCING AND HEALTH SYSTEM OUTCOMES

This section briefly discusses the goals of health systems and then shows how financing, as a policy instrument, relates to these goals.

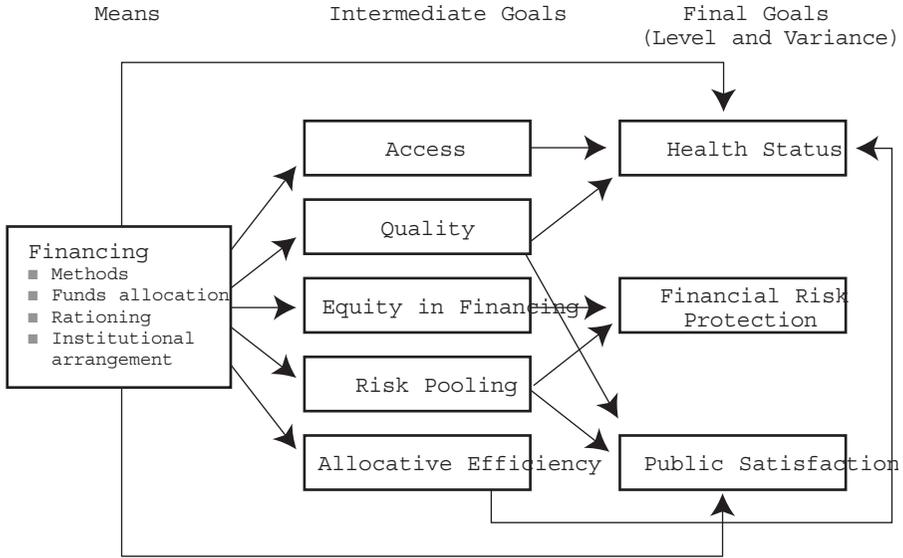
### 1.2.1. *Health system objectives*

Most nations seem to share the same objectives for their health systems: good health for all, financial risk protection for all, and the satisfaction of the people—all while maintaining an affordable health system (in other words, the system itself is subject to a given resource constraint). There are two dimensions to each of these three goals: level and distribution. Table 1.1 illustrates these goals (Roberts et al., forthcoming).<sup>1</sup> Note that these objectives go beyond the usual concerns of economic analyses, which tend to focus exclusively on efficiency but remain silent on equity (Okun, 1975).

Every nation has to make tradeoffs between health status, financial risk protection, and public satisfaction (for example, choice of physicians and no queues). Table 1.1 shows the painful tradeoffs. Nations seldom, however, make these inherent tradeoffs explicit.

Many policy measures aim at improving the intermediate outcomes—such as equal access to health care, efficiency of production, and quality of health services—rather than the final goals. However, these intermediate outcomes do not have a one-to-one relationship with the final goals. For example, in the United States, most medical professionals argue that additional resources must be spent to maintain the “quality” of health care. Whether the “quality” produces better health outcomes or greater public satisfaction is not examined, nor is there concern that higher expenditure to achieve quality may result in fewer people being insured.

**Figure 1.1** RELATIONSHIPS BETWEEN FINANCING INSTRUMENTS AND GOALS



1.2.2. *Financing and health system objectives*

Perhaps financing is the most important instrument that can affect intermediate and final health system outcomes. How a health system is financed determines how much money is available, who bears the financial burden and controls the funds, and whether health expenditure inflation can be managed. In turn, these intermediate outcomes determine the final outcomes, such as the health status of the population, who has access to health care, and who is protected against catastrophic medical expenses. Figure 1.1 illustrates how the instruments of financing may influence intermediate and final results.

1.3 FINANCING METHODS

In this section, we discuss five methods in financing health care programmes. Several factors have to be considered when nations select financing methods to raise funds, including their fiscal capacity, equity, efficiency in raising funds, and the economic effects of the fundraising. Capacity depends on context—the fiscal capacity of any method will depend on the economic structure of the society (for example, the proportion of workers in the formal sector), and on the government’s administrative capacity to collect taxes or social insurance contributions.

### 1.3.1 *Taxes*

These options are discussed in some detail in Chapter 3.

### 1.3.2 *Social insurance*

Social insurance has three distinct characteristics. First, social insurance is compulsory—this is also the major feature that distinguishes social from private insurance. Under social insurance, everyone in the eligible group must enrol and pay the specified premium (contribution). The second distinguishing characteristic of social insurance is that not every citizen is eligible for coverage and benefits. Unlike national health insurance, which is financed from general revenue, an eligible person is entitled only to the specified benefits once he or she has paid the minimum number of payments. The third distinguishing characteristic is that social insurance premiums and benefits are described in social contracts (laws or difficult-to-change regulations) established through legislation. The contribution rate and benefits are not easily adjustable by mere administrative action. All this creates an implicit bargain, or social contract, between the system and those covered by the insurance. Participants agree to pay a certain amount, with some confidence that it will be used fairly and effectively to fund health care for everyone who is part of the system.

The capacity of social insurance to raise funds depends largely on the scheme's ability to collect the contributions from the employers and workers who are covered by it. Worldwide experience tends to show that for low- and middle-income countries, social insurance can be effectively implemented only for workers employed by larger companies (more than 10 workers, for example) in the formal sector.

Both social and private insurance are discussed again in Chapters 4 and 5.

### 1.3.3 *Private insurance*

The distinguishing feature of private insurance is that the buyer voluntarily purchases insurance from independent, competitive sellers (either for-profit or nonprofit organizations) who charge premiums that reflect the buyer's risk rather than his or her ability to pay. Voluntary purchase of insurance can be made on an individual or group basis.

In recent years, many countries have shown increased interest in various forms of private insurance to finance the health sector. This interest appears to be driven by several arguments. The first is that private insurance will raise additional resources. Since non-payers are not covered, the problem of tax evasion is avoided. Advocates of private insurance also

argue that when people can choose a plan and an insurer they will feel more empowered and so will become more willing to pay for health care.

Undoubtedly, private insurance has some capacity to raise funds from those who have the capacity to pay, wish to be insured, and are unreachable by other financing methods. People in the upper-income bracket, for example, may be much more willing to pay for private insurance that covers expanded or higher-quality services for themselves than for general taxes that benefit others. The data on the Philippines show that around 5% of households can afford to buy private insurance. But by the same token, funds raised in this way cannot easily be used to help the poor. Those who do not have private insurance—not because they do not want it but because they cannot afford it—can end up in desperate straits.

The most worrying failure of the competitive private insurance market is the question of “risk selection”. In a world where an ever-increasing proportion of disease is chronic, health care costs are increasingly predictable on a year-to-year basis. Those who are sick this year are far more likely than average to be sick next year. The 10% of people in any insurance pool who are the sickest often account for 60 to 70% of the total cost. Together, these facts create enormous incentives for competitive insurance companies to sell health insurance only to healthy people and leave the elderly and the less healthy people to become the government’s responsibility.

#### 1.3.4 *Out-of-pocket payments*

An out-of-pocket payment occurs when patients pay providers directly out of their own pockets for the goods and services they have received. These payments are not reimbursable by third parties—such as an insurance plan, for example. User-fees are a subcategory: these are out-of-pocket payments for services provided by public facilities. The government uses these fees to finance a portion of their operating expenses.

Out-of-pocket payments by patients are a common feature of the health sector in most low- and middle-income countries. Recent National Health Accounts (NHA) studies (Berman, 1998) suggest that there may be substantial willingness and ability to spend on outpatient care, even among relatively poor people in low-income countries—especially when we include “informal” payments. The NHA studies show that even in countries with extensive tax-funded public health services, independent private practitioners provide quite a high proportion of outpatient care that is paid for directly by patients. In higher-income countries, certain services or items (such as drugs or dentistry) may not be covered by insur-

ance mechanisms. In other situations, patients may pay something (such as user fees or co-payments) even for publicly provided or insured services. There may also be gaps in what the patient's insurance covers in the form of deductibles (at the front end) or limits (at the back end).

Reliable international studies usually find that among non-socialist low-income countries, 40 to 50% of the national health expenditure comes from out-of-pocket payments. Poor and low-income households bear a large share of these payments (Berman, 1998). For example, close to 60% of the Indian national health expenditure is funded by out-of-pocket payments, mostly from lower-income households (Berman, 1993). Hsiao found a similar situation in China (Hsiao, 1993).

There is another big drawback to out-of-pocket payments. Given the possibility of strong supplier-induced demand, there is no guarantee that all health care services are of value to those buying them. If doctors influence patients so that they pay for inappropriate services, allocative inefficiency will persist. In practice, whether allocative efficiency increases or decreases when fees are imposed will depend on two offsetting effects. One is the impact that fees may discourage patients from purchasing services of low value. The other is any incentive such fees give to providers to encourage inappropriate use of services.

### 1.3.5 *Community financing*

Most of the world's low-income countries with substantial rural populations have despaired of finding ways to finance and deliver health services reliably at the village and township levels. It is often difficult to get physicians to staff clinics operated directly by a Ministry of Health in such areas. The physicians often simply evade or refuse, do not attend regularly, and/or provide poor customer service that is culturally insensitive. They also often lack basic drugs and supplies. At the same time, village residents often have little confidence in such services. As a result, they make extensive use of traditional healers, private practitioners, and pharmacists for outpatient care. When acutely ill, they flood into and overcrowd regional and tertiary hospitals.

*Community financing* has been used loosely as a label for any financing scheme that has community members paying into the scheme and/or participating in its management. A clearer but narrower concept of community financing involves tapping into the social cohesion and spirit of mutual assistance that can exist in a small community. These social forces may make it possible to organize prepayment schemes to fund and spend money locally, at the village and township level. Then the local communi-

ty fund can organize primary care and perhaps also fund a proportion of secondary services. Under most community-financing schemes, the financing and delivery of primary care are integrated.

In effect, the result is a community-based, mini health maintenance organization, with salaried practitioners, organized referral arrangements, and organized purchases of drugs and supplies. Secondary care is contracted with district hospitals. This kind of locally organized and managed delivery of primary care may yield large efficiency gains from bulk purchasing and distribution of drugs and supplies, rather than relying on local pharmacists who might charge high prices. The referral arrangement may improve the quality of medical services, particularly if the upper-level facilities have some responsibility for supervising and training village-level practitioners. Where community financing is both prepaid and compulsory, it does offer some pooling of risk and a certain amount of risk protection.

We have to acknowledge that the rural poor and low-income households in developing nations have meagre incomes. Their ability to prepay for health care is severely limited. These households have to be subsidized and incentives must be given for them to prepay. Moreover, these households must be assured that the funds will be used for their benefit and used efficiently. That means those managing the funds are accountable to the interested households rather than the government.

In an ideal community-financing scheme, there is a combination of local political accountability, community-managed primary care, and nearly universal prepayment. Besides the government, a variety of organizations could initiate a community-financing scheme, including agriculture cooperatives, local funeral funds, or large NGOs. This complex variety of real-world sponsoring organizations has to be judged in the light of each particular economic, social, political, and administrative circumstance.

Given the importance of these issues, Working Group 3 concentrated a significant part of its work and discussion on evaluating past uses of community financing and on the potential of this financing method to mobilize domestic resources for health more efficiently (see Chapter 4).

#### 1.4 THE CONTEXT OF HEALTH FINANCING

Any health financing strategy has to be considered in context. A nation's ability to raise tax revenues for health care depends on its aggregate economic capacity, on the number of rich and poor households, and on the government's ability to collect taxes. The effectiveness of each financing

strategy depends on whether households are rich or poor, on how many workers are engaged in farming, and on how many work in the formal or informal sectors. For example, in developing countries, social insurance can be used to raise funds from higher-income workers employed by large firms. This is not an effective method for raising funds from peasants, however. Consequently, we have to examine a country's distribution of households by income and employment status in some detail to find out how much money that country can raise for health.

Although we are concerned with the amount of money that can be raised for health care, this amount has to be judged according to what that country may "need" and what it "should" spend on health. A country's need for health care depends on its disease incidence and prevalence, which in turn are greatly influenced by race, age distribution, climate, and socioeconomic conditions. Also, it is necessary to acknowledge that needs can never be met completely because all nations face limits to their resources. Once we've established the health care needs of a country, we have to ask how much a country should spend on health care. The answer cannot be given solely by marginal benefit calculations, but also depends on how equitable a nation wants its health care and health status to be. The equity weights vary with the social values and beliefs embraced by a nation. Together, these factors explain why no universal standard can be set to determine the percentage of a nation's GDP that should be spent on health.

To state the obvious, the capacity and ability to raise funds for health differ from nation to nation. The same financing and organizational arrangement cannot be applied to all countries. Health care systems differ enormously across countries, particularly according to a nation's socio-economic development. What works in the United Kingdom, say, may not work in Kenya. On the other hand, do we have to treat every nation differently? Can we group nations into somewhat homogenous categories and derive general conclusions for the members of each group?

A nation's fiscal capacity and its ability to use different financing arrangements to mobilize funds effectively are highly correlated with that nation's per capita income. For these reasons, we use per capita GDP as a first approximate criterion to group nations into roughly homogenous categories.

Table 1.2 presents nations grouped by income. We labelled each group as a stage and demarcated the stages according to income. *Stage* is not a discontinuous variable, nor does it imply that a country jumps from one discrete stage to another—countries are on a continuum. The notion

**Table 1.2** EVOLUTION OF HEALTH CARE FINANCING AND PROVISION SYSTEMS AT VARIOUS STAGES OF ECONOMIC DEVELOPMENT

Service Provision				
	Stage I (three-tiered system)		Stage II (compartmentalized financing and provision)	Stage III (universal coverage**)
Financing modality	Poor ( <i>&lt; US\$ 1800</i> )*	Low ( <i>US\$ 1800 – US\$ 4800</i> )*	( <i>US\$ 5000 – US\$ 12 000</i> )*	( <i>&gt; US\$ 12 000</i> )*
<i>General revenue financed + donor</i>	Public health, prevention Public health services (clinics, hospitals)  (50–60%)	(40–50%)	Public health service  (20–40%)	NHS (UK, NZ)  Medisave + Cat. (Singapore)
<i>Social insurance</i>	For civil servants only	(10–20%)	Social insurance (direct/indirect provision)  (30–60%)	National HI (Australia, Canada)  Bismarckian social insurance (Germany, Japan)
<i>Private insurance</i>	negligible	(5–10%)	Private insurance (15–40%)	Managed care + Medicare (USA)
<i>Self-pay</i>	Private hospitals & clinics Pharmacists Indigenous providers (35–45%)	(20–40%)	Self-pay  (15–25%)	Self-pay  (15–25%)
<i>Examples</i>	Bangladesh, India, Kenya, Mali, Nigeria, Tanzania, Yemen	China, Ecuador, Egypt, Indonesia Peru, Philippines	Argentina, Brazil, Chile, Lebanon, Malaysia, Mexico, Thailand, Turkey, Venezuela	

\* *GDP per capita, 1997 PPP \$*\*\* *Except USA & Hong Kong*

of stages is used to give an idea of the financing options available at each stage and the amount of funds that may be raised from the various sources. This grouping gives a broad summary of the financing and organization of health care in each stage, but it does not imply that all nations in a stage follow exactly the same pattern.

Table 1.2 shows that in low-income countries, tax usually funds 40 to 50% of total health expenditure, while social insurance (usually covering civil servants) finances 10 to 20% and direct out-of-pocket payments from patients finance 20 to 40%. Private insurance is less than 10%

because few households can afford to buy it and the country may lack the administrative safeguards needed to prevent fraudulent claims. As a country industrializes and its per capita income grows, social insurance usually expands because the number of workers in the formal sector grows. Private insurance begins to emerge but plays a very small role. The major portion of total national health expenditure is still financed by tax funds or patients' direct payments.

As a nation's economy grows and it moves from being a low-income country to a middle-income one, the health system also changes. The major difference lies in the relative share of total health expenditures financed from the various methods. In middle-income countries, a larger portion of the funds usually comes from social and private insurance. The provision of health services also changes. The quality of health services funded by private and social insurance becomes noticeably higher. These distinctions in quality compartmentalize the health service market. At the high-income level of development, all nations (except the United States) have established a system of financing that uses either general revenues or social insurance to ensure universal equal access to reasonable health care. The health service market becomes less compartmentalized and the distinctions in terms of quality are reduced.

#### 1.5 EFFICIENCY GAINS: ALLOCATION OF RESOURCE AND PRODUCTION OF SERVICES

There is another obvious factor that needs to be taken into account when calculating how much "should" be spent on health care: the efficiency of the health system. The amount needed for a given scope and level of health care hinges not only on what services will be provided but also on how efficiently those services can be delivered. Resource allocation matters greatly in determining who has access to health care and its quality and quantity. This in turn influences health outcomes and financial risk protection as well as, of course, the allocative efficiency of a health system and a nation's total health care costs.

Chapter 7 examines some of the issues surrounding the more efficient use of existing finance for health care. However, formulating financing policy, like other policy decisions, is a profoundly political process. Political scientists such as Alvares et al. (1991); Marmor, Bridges, and Hoffman (1983); and Reich (1994) have long argued that the interplay between politics and economics (that is, political economy) principally decides who has to pay and who receives the benefits.

**Table 1.3** THE INCIDENCE OF PUBLIC HEALTH SPENDING IN SELECTED COUNTRIES  
(IN ORDER OF THE POOREST RECEIVED THE HIGHEST SHARE OF SUBSIDY)

	Year	Share of subsidy (%)	
		Poorest quintile	Richest quintile
Sri Lanka	1979	30	9
Jamaica	1989	30	9
Malaysia	1989	29	11
Brazil	1985	17	42
Egypt	1995	16	24
Kenya	1993	14	24
Vietnam	1992	12	29
Indonesia	1989	12	29
Ghana	1992	12	33

Sources: Alailima and Mohideen, 1984; Castro-Leal et al., 2000; Grosh, 1994.

There are several strong stakeholders in the health sector. Each possesses political resources and roles in the political structure that determine their relative power in shaping finance policy. A country's economic and political élite wants to ensure that there are at least a few "world class" institutions in which they can get care. These services tend to be provided by the tertiary hospitals or medical centres. Priority is often given to tertiary hospitals using costly equipment (frequently imported) and serving the economic and political élite of the country. It is common for those national and regional centres (which are often also teaching hospitals) to absorb a very large share of the nation's overall health budget. Also, the most prestigious institutions often have substantial political connections and influence that allows them to defend their interests effectively.

Allocation of tax funds among programmes often reduces rather than enhances the equity of health care delivery. General revenues are often used to fund free public health care, intended to ensure equal access for the poor and low-income households. The reality, however, is different. The benefits often do not go to those at whom the public funds are aimed. As Bates (1981) found in his study of agricultural policy in Africa, health services financed by general revenue tend to be "captured" by the urban upper and middle class rather than going to the rural and urban poor. Foltz and Foltz (1990) have documented how health reform in Chad was skewed in favour of certain groups due to their political power and influence. Incidence analyses indicate that public expenditure tends to benefit the rich disproportionately in a majority of nations (see Table 1.3, which

shows representative years taken from data available for several countries).

Besides allocative inefficiency, does a nation have the capacity to transform money into effective services for its population? In other words, what is the production efficiency in a country? For example, detailed country studies consistently found a disturbing fact. In most low-income countries, governments are funding the public provision of primary care at the village and township (subdistrict) levels.<sup>2</sup> But, in general, the government cannot manage and monitor these funded public services at the grassroots level. Whatever funds are spent do not produce the services that people demand and value. Clinics may be built but their staffing becomes uncertain and unreliable. Drugs are often unavailable. As a result, when people become ill, they pay to see private practitioners and buy drugs from their own meagre resources.

In low- and middle-income countries, inefficiency in the private-sector provision of outpatient services and drugs has been rampant. Studies have consistently found that the amounts spent out-of-pocket by households have not purchased the most cost-effective services (Liu et al., 1998). Patients have to pay whatever private practitioners and drug peddlers charge. At the village level, the prices can be high since a small population size is unlikely to have more than one qualified provider. At the subdistrict (township) level, the competition is also limited because of population size. Also, the health service market suffers from well-documented market failures that can result in price gouging, poor medical quality, and induced demand for drugs sold at a high profit.<sup>3</sup> It is self-evident that if the households are willing to prepay the amount that they are paying out-of-pocket now into an organized financing scheme, collective gains can be made. The organized fund could pool risks and improve the quality and quantity of health care that the same amount of money bought previously.

## 1.6 A COHERENT FINANCING STRATEGY AND CONCLUSIONS

The framework we propose for deciding financing strategy consists of four parts. We have argued that financing is a policy instrument to be used to achieve a society's goals. Therefore the goals have to be clear to establish a rational financing strategy, especially in deciding how much should be spend on health. The goals also provide the parameters for judging the tradeoffs, such as between level of health status and its equitable distribution. Next, we point out that the decision on how to finance the health sector must consider the context, including the nation's socioeconomic

development and how its resources are allocated now. Then we use a set of parameters to assess the strengths and weaknesses of the five methods of financing health activities discussed earlier. This evaluative information can be useful in deciding the financing strategy. The final part consists of a process where the findings from the first three parts are used to develop strategic options. Of course, the political feasibility and ability to implement any particular strategy must be taken into account.

Following this approach, what might a coherent financing strategy look like for a low-income country? Let's make three assumptions based on the facts we've gathered. First, the typical low-income country has a small tax base and limited ability to collect general taxes—the demand for general revenue from various government programmes is in equilibrium politically. Therefore the potential to increase general revenue financing for health is very limited. Second, we assume the urban high- and middle-income households have captured a large and disproportionate share of the health services financed from general revenue. Third, people are not using the full capacity of under-funded government health posts, clinics, and subdistrict health centres because of physician “no-shows”, low quality of services, and lack of drugs and supplies, and/or because they are user-unfriendly. Instead, many people, rich and poor, make out-of-pocket payments for outpatient services, drugs and supplies from the indigenous medicine sector, private-sector practitioners, pharmacists, and laboratories. Under these circumstances, how does a nation raise more money for health if it wishes to improve the equity and level of the three outcomes?

In thinking about financing options, general revenue and out-of-pocket payments are feasible ways to fund all groups. However, social insurance is possible only for the workers employed by the larger employers in the formal sector. Private insurance is affordable only by affluent households, and community financing is most likely to be feasible only for closely knit rural communities.

Therefore, an obvious approach to improve equity and allocative efficiency is to shift general revenues to subsidize the poor and those on a low income. This would finance their primary care and insure them against large medical expenses. General revenue is the major source of financing for health for all nations. Ideally, this fund should finance public goods and subsidize the poor and disabled. However, as we have acknowledged, the urban affluent and middle-income populations, with their greater political power, often “capture” the general revenue for their own benefit. The poor and rural peasants are left with less. Unless a country has a coherent overall financing strategy for all of its people, equity, efficiency,

and good health may not be enhanced by raising larger amounts for health care. Argentina and India are examples of lower-income countries where, because of the lack of a coherent overall financing strategy, high spending has not produced more favourable outcomes.

A feasible strategy, therefore, might involve a three-pronged approach: a process of substitution, the reallocation of general revenue to create incentives for people to prepay their health care, and the use of prepayment to reorganize primary care at the community level to improve efficiency and quality. Perhaps social insurance could be introduced to insure the workers and families who are employed by the large firms. The social insurance funds would substitute the general revenue funds. The general revenue funds released by this process could then be used to subsidize the rural households so they can organize community funds. The subsidy could provide the incentive for rural households to contribute by obtaining a commitment from the government to match any household's contribution with funds from general revenue. The subsidy for the poor could be larger. The households would use a proportion of what they would have paid out of pocket for outpatient services and drugs to prepay a proportion of the cost of services and drugs. The prepaid benefit package would be a "mix-and-match" plan that combines insurance and direct out-of-pocket payments by patients. Some services would be excluded from coverage, so their risk would be pooled. The degree of risk-pooling depends, of course, on what services can be covered by the contributions from households and the government. It is hoped that the community fund can improve the efficiency and quality of these services by having a management role in primary care. The efficiency gains would reduce the cost of services and drugs. The better quality would improve people's health status and public satisfaction.

Private insurance can be used to raise additional funds from the affluent households. This change has to be coupled with a change in the class of services provided by the public facilities. The private insurance can pay for the full average cost (or even more than the full cost) of first-class services. Then the public facilities can earn a profit that can be used to subsidize the services for the poor.

The rest of this Report is informed by, and incorporates much of, the four-part framework just described. In later chapters we discuss financing methods and evaluate their contributions to intermediate and final goals. We review context and mix of financing health care, and recognize that they are specific to each country.

Our review of financing strategy and the choice among the five financing methods does lead us to a few painful conclusions. Indeed, the first is that there is no single perfect financing strategy for all nations. There can be no “one-size-fits-all” approach. However, some financing strategies are better than others in terms of equity, risk-pooling, and efficiency in raising funds. The second conclusion is that the best choice for a country may well depend on exactly how that country is placed in terms of certain facts and values. For instance, how important is vertical equity—and therefore redistributive financing? How much administrative capacity is there in the Ministry of Finance and in the tax collection agencies? How cynical and evasion-inclined are citizens when it comes to meeting their tax obligations? Nations that want to mobilize a significant percentage of GDP for health care will have to find a combination of methods to use broad-based revenue sources (insurance or taxes). But the capacity of those methods depends on the particular context of that nation.

*We recommend that each country seeking international assistance for health financing demonstrate that it has a coherent financing strategy. This strategy should consider all population groups and use appropriate methods for each group; it should combine and integrate financing methods to optimize the amount that can be raised and to use the funds efficiently. To accomplish that, we suggest breaking the population down into income and employment groups. Then the potential financing methods for each group need to be examined. The strategy is to hold the general revenue fund, the most flexible and most equitable source of funding, as the reserve. It would be used for three major purposes: to provide public goods, promote equity, and offer incentives for peasants and workers in the informal sector to prepay for health care. A coherent integration of financing for various groups could increase resources, pool risks, improve equity, and obtain efficiency and quality gains. All these issues are examined more thoroughly in the following chapters.*



## 2. DATA AND COMMENTARY ON HEALTH FINANCING

### 2.1 SCOPE OF ANALYSIS AND SOURCES OF INFORMATION

This chapter provides a descriptive analysis of the amount that WHO Member States are currently spending on health and how they finance this amount. The objective of the chapter is to see what patterns, if any, emerge from simple comparisons and to comment on what the presence of such patterns implies for the adequacy of spending and the distribution of the financial burden between sources of finance and among households. This analysis can be developed with more causal or explanatory analysis, or when additional information becomes available.

Our principal source of data is the set of National Health Accounts estimates prepared by WHO. The *World health report 2000* included estimates of total absolute health spending per capita in both exchange rate dollars and international dollars. In the latter case, the expenditure was broken down into the public and out-of-pocket components. The methods and assumptions behind these calculations have been detailed elsewhere (Poullier and Hernández, 2000) and continue to be revised as more sources of information are incorporated. The counterpart of out-of-pocket spending is prepayment of all kinds, including both voluntary and employment-related purchases of insurance and involuntary contributions, both via tax-funded and other public expenditure, and social insurance contributions (often but not always operated through social security). Since social security contributions are often perceived as simply another kind of tax, we use the term *general revenue* for all other sources of finance for public spending on health, even though some of this money comes from dedicated taxes. We feel that distinguishing the differences between these forms of prepayment—including the differences between actuarial premiums and taxes that are not determined in relation to risk—is less important than distinguishing between payments that are not related to individuals' use of services and out-of-pocket payments—which are always related to service use. Seven variables—total expenditure on health as a per cent of GDP; public expenditure as a per cent of total expenditure on health; private expenditure as a per cent of total health expenditure; out-of-pocket expenditure as a per cent of total expenditure on health;

tax-funded and other public expenditure as a per cent of public expenditure on health; social security expenditure as a per cent of public expenditure on health; and public expenditure on health as a per cent of total public expenditures—and shares of GDP, of total health spending, or of total public expenditure of all types were also published in the *World health report 2000* (WHO, 2000a, Annex Table 8); and some of them are analysed here.

The published estimates refer to the year 1997, although they may be based on data from earlier years as well. The estimates for nearly all countries for that same year have been revised and these revised estimates are used here and presented in Table 2.1 (further revisions are in prospect). WHO has prepared a round of preliminary estimates for 1998, but these numbers are not yet available for analysis. The quality of the information varies considerably between countries, so the initial estimates for 1997 were classified as “complete data with high reliability”, “incomplete data with high to medium reliability”, or “incomplete data with low reliability”. As more and better data have been obtained for the revisions to the 1997 numbers, the quality of the estimates have improved and become more complete. When the classification is repeated, fewer countries’ data will be categorized as incomplete or of low or medium reliability. Pending that reclassification, we have identified the first-round categories in the graphs we present here. This understates the quality of the data, but allows us to see whether what were initially the least reliable data suggest a slightly different pattern than the more reliable numbers. In any case, the data that were less reliable do not show systematically higher variance around whatever pattern is found: in other words, they do not simply always contribute more noise.

The *World health report 2000* also included analyses of 21 countries based on estimates of families’ spending on health derived from household surveys (WHO, 2000a, Annex Table 7). These numbers include not only what the household recalled spending directly or through insurance premiums and social security contributions, but also estimates of the taxes paid that end up financing health. These estimates allow us to identify households that suffered “catastrophic” expenses—a large share of their nonsubsistence income or consumption (50% in the results reported here). The total amount of such expenditure can then be worked out and compared with total spending and out-of-pocket payments—which are the source of catastrophic outlays, since the various forms of prepayment never take a very large share of household income. WHO has continued to analyse household surveys for a larger number of countries, but the new

**Table 2.1** NATIONAL HEALTH ACCOUNTS ESTIMATES FOR 19 I WHO MEMBER STATES FOR 1997, REVISED DATA AS OF 31 MAY 2001

Country	Percentage shares										Per capita expenditures in PPP dollars			
	THE/GDP (%)	PHE/THE (%)	PotHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PPHE (%)	PvtIns/PotHE (%)	OOPS/PotHE (%)	THE	PHE	OOPS		
Afghanistan	1.4	52.6	47.4	3.6	0.0	92.5	7.5	0.0	100.0	7	4	4		
Albania	3.8	71.5	28.5	9.5	17.5	81.6	0.9	46.0	54.1	107	76	16		
Algeria	4.0	79.8	20.2	11.3	66.7	33.3	0.0	0.0	100.0	195	155	39		
Andorra	9.3	86.6	13.4	22.1	84.8	15.3	0.0	0.0	100.0	1 557	1 348	209		
Angola	4.1	47.9	52.1	6.1	0.0	89.1	10.9	0.0	100.0	62	30	32		
Antigua and Barbuda	5.5	62.9	37.1	15.0	0.0	100.0	0.0	0.0	100.0	508	320	188		
Argentina	8.0	55.2	44.8	20.1	60.2	39.7	0.2	24.8	75.3	953	526	322		
Armenia	7.8	41.5	58.5	12.2	0.0	92.1	7.9	0.0	100.0	160	67	94		
Australia	8.4	68.3	31.8	16.2	0.0	100.0	0.0	29.6	50.7	1 917	1 309	309		
Austria	8.0	71.4	28.6	11.2	59.5	40.5	0.0	27.0	58.8	1 819	1 299	306		
Azerbaijan	2.9	79.3	20.7	10.6	0.0	94.4	5.6	0.0	100.0	58	46	12		
Bahamas	6.5	53.7	46.3	13.7	0.0	100.0	0.0	0.0	92.6	785	421	337		
Bahrain	5.0	58.5	41.5	8.7	0.0	100.0	0.0	0.0	90.9	706	413	267		
Bangladesh	4.5	45.4	54.6	9.1	0.0	92.0	8.0	0.0	95.0	50	23	26		
Barbados	7.0	71.0	29.0	15.1	0.0	100.0	0.0	0.0	100.0	901	640	262		
Belarus	5.9	82.6	17.4	10.5	0.0	99.9	0.1	0.0	100.0	344	285	60		
Belgium	8.6	71.0	29.0	12.2	88.0	12.0	0.0	6.8	46.7	1 995	1 416	271		
Belize	4.7	51.0	49.0	8.2	0.0	95.5	4.5	0.0	100.0	226	115	111		

Table 2.1 *continued*

Country	Percentage shares										Per capita expenditures in PPP dollars		
	THE/GDP (%)	PHE/THE (%)	PotHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PPHE (%)	PotIns/PotHE (%)	OOPS/PotHE (%)	THE	PHE	OOPS	
Benin	3.1	48.5	51.5	6.0	0.0	85.8	14.2	0.0	100.0	27	13	14	
Bhutan	4.7	72.2	27.8	10.1	0.0	70.3	29.7	0.0	100.0	27	19	7	
Bolivia	4.7	63.9	36.1	9.1	65.3	24.9	9.8	7.8	85.7	104	66	32	
Bosnia and Herzegovina	4.0	55.4	44.6	6.2	0.0	69.1	30.9	0.0	100.0	20	11	9	
Botswana	3.4	70.5	29.5	5.9	0.0	98.5	1.6	52.9	37.1	220	155	24	
Brazil	6.5	40.4	59.7	9.7	0.0	100.0	0.0	48.1	52.0	438	177	136	
Brunei Darussalam	5.4	40.6	59.4	4.5	0.0	100.0	0.0	0.0	100.0	939	381	557	
Bulgaria	4.4	80.0	20.0	8.9	10.5	89.5	0.0	0.0	93.5	209	167	39	
Burkina Faso	4.0	67.6	32.4	11.3	0.0	76.4	23.6	0.0	100.0	32	22	10	
Burundi	2.1	42.2	57.8	4.0	0.0	69.4	30.6	0.0	100.0	12	5	7	
Cambodia	7.2	9.4	90.6	7.0	0.0	49.0	51.0	0.0	100.0	87	8	79	
Cameroon	3.0	34.2	65.8	7.2	0.0	71.0	29.0	0.0	81.6	44	15	23	
Canada	9.0	69.9	30.1	15.4	1.6	98.4	0.0	36.1	56.9	2 181	1 524	374	
Cape Verde	2.6	71.8	28.2	4.7	0.0	75.8	24.2	0.0	100.0	87	62	24	
Central African Republic	2.4	51.4	48.6	4.0	0.0	75.7	24.3	0.0	77.3	25	13	9	
Chad	3.1	79.3	20.7	13.2	0.0	78.0	22.0	0.0	100.0	25	20	5	
Chile	7.0	36.3	63.7	10.8	89.3	10.3	0.4	33.7	66.3	609	221	257	
China	4.2	39.4	60.6	13.6	87.0	12.6	0.4	0.0	78.9	125	49	60	

Table 2.1 continued

Country	Percentage shares										Per capita expenditures in PPP dollars			
	THE/GDP (%)	PHE/THE (%)	PotHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PPHE (%)	PvtIns/PotHE (%)	OOPS/PotHE (%)	THE	PHE	OOPS		
Colombia	9.3	57.6	42.4	18.2	40.3	59.5	0.2	38.9	61.1	569	328	147		
Comoros	4.5	68.2	31.8	8.7	0.0	75.8	24.2	0.0	100.0	53	36	17		
Congo, Rep of (Brazz)	2.8	64.6	35.4	4.8	0.0	84.5	15.5	0.0	100.0	28	18	10		
Cook Islands	5.3	67.1	32.9	10.3	0.0	99.8	0.2	0.0	100.0	319	214	105		
Costa Rica	7.0	78.3	21.7	21.6	84.9	14.5	0.6	3.0	97.0	498	390	105		
Côte d'Ivoire	3.0	46.0	54.0	5.7	0.0	81.6	18.4	14.9	85.1	46	21	21		
Croatia	8.2	80.5	19.5	13.2	92.6	7.4	0.0	0.0	100.0	530	427	103		
Cuba	6.3	87.5	12.5	10.0	20.9	79.0	0.1	0.0	100.0	87	76	11		
Cyprus	6.4	36.3	63.7	6.3	80.9	19.1	0.0	0.0	97.9	1 085	394	677		
Czech Republic	7.1	91.7	8.3	14.7	89.5	10.5	0.0	0.0	100.0	910	835	76		
Democratic People's Republic of Korea	3.0	83.5	16.5	5.6	0.0	99.0	1.0	0.0	100.0	31	25	5		
Democratic Rep of Congo (Kin)	1.6	74.1	25.9	12.3	0.0	90.5	9.5	0.0	100.0	15	11	4		
Denmark	8.2	82.3	17.7	12.9	0.0	100.0	0.0	7.9	92.1	1 969	1 620	322		
Djibouti	4.6	44.4	55.6	5.7	0.0	96.7	3.3	0.0	29.8	62	27	10		
Dominica	5.9	69.6	30.4	11.0	0.0	97.5	2.5	17.7	82.4	309	215	77		
Dominican Republic	6.4	29.1	70.9	10.5	22.3	75.4	2.3	13.2	77.0	291	85	159		
Ecuador	3.7	50.8	49.2	7.0	48.8	49.1	2.1	10.6	65.4	120	61	39		

Table 2.1 *continued*

Country	Percentage shares										Per capita expenditures in PPP dollars		
	THE/GDP (%)	PHE/THE (%)	PotHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PHE (%)	PotIns/PotHE (%)	OOPS/PotHE (%)	THE	PHE	OOPS	
Egypt	4.3	31.8	68.2	4.5	39.6	56.1	4.3	0.4	93.2	12.3	39	78	
El Salvador	8.1	38.7	61.3	22.6	43.3	53.6	3.1	2.7	97.1	32.8	127	195	
Equatorial Guinea	3.6	56.0	44.0	7.9	0.0	85.9	14.1	0.0	100.0	59	33	26	
Eritrea	4.4	65.8	34.2	5.3	0.0	83.1	16.9	0.0	100.0	42	28	14	
Estonia	6.4	78.9	21.2	13.6	0.0	99.9	0.1	0.0	46.1	481	379	47	
Ethiopia	4.7	41.4	58.6	8.1	0.0	85.9	14.1	0.0	87.6	29	12	15	
Fiji	4.0	66.7	33.3	7.4	0.0	99.2	0.8	0.0	100.0	179	119	60	
Finland	7.3	76.1	23.9	10.7	19.6	80.4	0.0	10.4	83.0	1 517	1 154	301	
France	9.4	77.7	22.3	13.3	100.0	3.2	0.0	55.4	47.1	1 994	1 550	209	
Gabon	3.1	66.5	33.5	6.2	0.0	92.6	7.4	0.0	100.0	197	131	66	
Gambia	3.0	78.7	21.3	11.5	0.0	86.2	13.8	0.0	100.0	45	36	10	
Georgia	4.4	8.6	91.4	2.6	0.0	91.6	8.4	0.0	100.0	222	19	203	
Germany	10.5	76.6	23.4	14.5	90.7	9.3	0.0	29.5	66.0	2 336	1 789	361	
Ghana	3.6	55.1	44.9	9.6	0.0	72.1	27.9	0.0	100.0	63	35	28	
Greece	8.5	57.7	42.3	11.9	37.2	62.8	0.0	5.3	89.4	1 177	679	445	
Grenada	4.6	65.7	34.3	10.4	0.0	98.2	1.8	0.0	100.0	265	174	91	
Guatemala	4.3	44.9	55.1	15.5	57.7	36.3	6.1	3.8	92.3	149	67	76	
Guinea	3.6	57.2	42.8	9.7	0.0	73.9	26.1	0.0	100.0	58	33	25	

Table 2.1 continued

Country	Percentage shares										Per capita expenditures in PPP dollars			
	THE /GDP (%)	PHE /THE (%)	PotHE /THE (%)	PHE /GGE (%)	SocSec /THE (%)	GenRev /PHE (%)	ExtRes /PHE (%)	PvtIns /PotHE (%)	OOPS /PotHE (%)	THE	PHE	OOPS		
Guinea-Bissau	3.9	64.0	36.0	2.2	0.0	79.2	20.8	0.0	100.0	34	2.2	12		
Guyana	4.6	81.5	18.5	8.6	0.0	99.4	0.6	0.0	93.9	180	147	31		
Haiti	3.6	33.5	66.5	10.2	0.0	63.4	36.6	0.0	43.2	45	15	13		
Honduras	6.4	55.4	44.6	17.0	9.7	84.9	5.3	0.1	91.4	158	88	64		
Hungary	6.8	75.3	24.7	10.4	35.5	64.5	0.0	0.0	46.9	677	510	78		
Iceland	8.0	83.7	16.3	18.9	31.5	68.5	0.0	0.0	100.0	1 951	1 633	318		
India	5.5	15.3	84.7	4.7	0.0	96.0	4.1	0.0	97.3	109	17	90		
Indonesia	2.7	22.9	77.1	3.0	69.5	23.0	7.5	16.0	84.0	82	19	53		
Iran, Islamic Republic of	5.9	46.4	53.6	10.4	25.7	74.3	0.0	0.0	100.0	275	128	148		
Iraq	4.2	58.9	41.1	12.5	0.0	100.0	0.0	0.0	100.0	136	80	56		
Ireland	7.0	75.6	24.4	16.3	8.3	91.7	0.0	32.9	54.7	1 453	1 099	193		
Israel	8.6	70.3	29.8	12.5	0.0	100.0	0.0	0.0	90.2	1 553	1 091	417		
Italy	8.3	67.5	32.5	11.2	0.4	99.6	0.0	3.9	72.5	1 742	1 176	410		
Jamaica	5.4	56.0	44.0	8.7	0.0	97.3	2.7	26.4	53.5	210	118	50		
Japan	7.4	79.5	20.5	16.7	89.0	11.0	0.0	0.0	78.9	1 810	1 439	293		
Jordan	7.1	70.3	29.7	13.4	0.0	97.8	2.2	0.0	73.7	285	200	62		
Kazakhstan	3.3	65.5	34.5	10.1	47.0	52.5	0.5	0.0	100.0	172	113	59		
Kenya	7.6	28.2	71.8	7.9	13.5	60.1	26.3	4.7	73.9	76	21	40		

Table 2.1 *continued*

Country	Percentage shares										Per capita expenditures in PPP dollars		
	THE/GDP (%)	PHE/THE (%)	PotHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PHE (%)	PotIns/PotHE (%)	OOPS/PotHE (%)	THE	PHE	OOPS	
Kiribati	8.9	99.2	0.9	12.9	0.0	98.5	1.5	0.0	100.0	175	174	1	
Kuwait	3.3	87.4	12.6	8.4	0.0	100.0	0.0	0.0	100.0	628	549	79	
Kyrgyzstan	4.0	69.4	30.6	10.4	0.8	94.0	5.2	0.0	100.0	90	62	27	
Lao People's Democratic Republic	4.3	36.8	63.2	6.0	0.6	86.3	13.1	0.0	100.0	74	27	47	
Latvia	6.0	60.6	39.4	9.6	52.5	47.4	0.1	0.0	100.0	338	205	133	
Lebanon	9.8	29.6	70.4	6.8	26.9	72.6	0.5	23.7	76.3	501	148	269	
Lesotho	5.3	76.0	24.0	12.4	0.0	79.5	20.5	0.0	100.0	96	73	23	
Liberia	2.5	66.7	33.3	6.7	0.0	88.8	11.2	0.0	100.0	94	62	31	
Libyan Arab Jamahiriya	3.7	47.6	52.4	2.6	0.0	100.0	0.0	0.0	90.9	260	124	124	
Lithuania	6.6	73.9	26.1	14.4	68.6	31.4	0.0	0.0	90.9	280	207	66	
Luxembourg	5.9	92.5	7.5	12.7	86.0	14.0	0.0	19.5	99.2	2 076	1 920	155	
Madagascar	2.3	57.2	42.8	7.6	0.0	87.1	12.9	0.0	100.0	17	10	7	
Malawi	7.3	50.6	49.4	14.6	0.0	61.3	38.7	1.6	35.4	41	21	7	
Malaysia	2.3	57.6	42.4	5.6	0.0	98.8	1.2	0.0	100.0	214	123	91	
Maldives	7.1	74.5	25.5	10.9	0.0	91.6	8.4	0.0	100.0	274	204	70	
Mali	4.2	45.8	54.2	7.9	0.0	74.9	25.1	0.0	89.9	28	13	14	
Malta	6.3	58.9	41.1	8.9	98.5	1.5	0.0	0.0	92.6	873	514	332	
Marshall Islands	9.2	61.9	38.1	14.1	0.0	61.5	38.5	0.0	100.0	141	87	54	

Table 2.1 continued

Country	Percentage shares										Per capita expenditures in PPP dollars			
	THE/GDP (%)	PHE/THE (%)	PotHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PHE (%)	PvtIns/PotHE (%)	OOPS/PotHE (%)	THE	PHE	OOPS		
Mauritania	2.9	69.7	30.3	7.8	0.0	84.8	15.2	0.0	100.0	44	31	13		
Mauritius	3.4	51.1	48.9	7.1	0.0	79.1	20.9	0.0	100.0	277	141	135		
Mexico	5.3	43.3	56.7	6.0	73.6	27.6	0.0	2.7	93.7	406	176	216		
Micronesia, Federated States of	7.6	79.7	20.3	11.3	0.0	100.0	0.0	0.0	100.0	164	131	33		
Monaco	7.0	50.0	50.0	17.8	93.8	6.3	0.0	0.0	100.0	1 549	775	775		
Mongolia	5.5	62.7	37.3	13.4	12.2	76.5	11.4	0.0	73.3	88	55	24		
Morocco	4.6	28.6	71.4	3.9	8.4	89.8	1.8	23.1	76.9	142	41	78		
Mozambique	3.9	56.2	43.8	11.2	0.0	39.8	60.2	0.0	41.2	28	16	5		
Myanmar	2.3	18.6	81.4	4.4	0.0	99.9	0.1	0.0	100.0	26	5	21		
Namibia	7.9	54.3	45.7	11.1	0.0	91.6	8.4	91.3	3.0	411	223	6		
Nauru	4.9	97.4	2.6	9.6	0.0	100.0	0.0	0.0	100.0	213	208	6		
Nepal	4.7	20.6	79.5	5.3	0.0	67.1	32.9	0.0	73.5	58	12	34		
Netherlands	8.7	68.9	31.1	12.6	93.8	6.2	0.0	57.5	23.2	1 960	1 350	142		
New Zealand	7.6	77.3	22.7	12.7	0.0	100.0	0.0	29.8	68.9	1 381	1 068	216		
Nicaragua	7.3	49.5	50.5	22.1	18.7	61.2	20.1	0.0	100.0	318	157	161		
Niger	3.0	51.1	48.9	6.0	0.0	61.0	39.1	0.0	81.4	19	10	8		
Nigeria	1.9	27.0	73.0	3.5	0.0	53.8	46.2	0.0	100.0	14	4	10		
Niue	7.6	97.3	2.7	13.0	0.0	100.0	0.0	0.0	100.0	774	753	21		

Table 2.1 *continued*

Country	Percentage shares										Per capita expenditures in PPP dollars		
	THE/GDP (%)	PHE/THE (%)	PotHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PHE (%)	PotIns/PotHE (%)	OOPS/PotHE (%)	THE	PHE	OOPS	
Norway	8.1	83.0	17.0	15.2	0.0	100.0	0.0	0.0	88.9	2 152	1 785	326	
Oman	3.2	82.1	17.9	6.9	0.0	100.0	0.0	0.0	49.9	319	262	28	
Pakistan	4.0	22.9	77.1	2.9	55.1	42.0	2.9	0.0	100.0	66	15	51	
Palau	6.1	87.5	12.5	8.9	0.0	100.0	0.0	0.0	100.0	520	455	65	
Panama	7.6	66.7	33.3	18.7	60.6	38.8	0.6	16.8	76.8	396	264	101	
Papua New Guinea	3.3	90.6	9.5	9.6	0.0	83.5	16.5	0.0	100.0	78	71	7	
Paraguay	7.5	33.1	66.9	13.6	47.8	48.8	3.5	20.8	69.2	338	112	156	
Peru	3.5	57.3	42.7	11.8	61.1	36.3	2.6	7.1	86.4	160	91	59	
Philippines	3.5	48.5	51.5	7.2	30.9	67.6	1.5	4.6	95.4	132	64	65	
Poland	6.1	72.0	28.0	10.1	0.0	100.0	0.0	0.0	100.0	456	328	128	
Portugal	10.7	55.6	44.4	14.2	6.3	93.7	0.0	2.7	90.6	1 619	900	652	
Qatar	5.3	57.5	42.5	7.6	0.0	100.0	0.0	0.0	100.0	1 433	824	609	
Republic of Korea	5.0	41.0	59.0	10.1	71.9	28.1	0.0	11.3	78.2	743	305	342	
Republic of Moldova	8.0	75.4	24.6	11.9	0.0	97.6	2.4	0.0	100.0	173	130	42	
Romania	4.1	62.9	37.1	7.5	18.7	80.3	1.0	0.0	100.0	253	159	94	
Russian Federation	5.2	76.8	23.2	10.6	83.8	15.7	0.5	0.0	100.0	376	289	87	
Rwanda	5.2	34.1	65.9	8.7	0.9	28.5	70.6	0.2	62.4	35	12	14	
Saint Kitts and Nevis	4.7	68.4	31.6	10.9	0.0	92.5	7.5	0.0	100.0	498	340	157	

Table 2.1 continued

Country	Percentage shares										Per capita expenditures in PPP dollars			
	THE/GDP (%)	PHE/THE (%)	PotHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PHE (%)	PvtIns/PotHE (%)	OOPS/PotHE (%)	THE	PHE	OOPS		
Saint Lucia	4.1	62.3	37.7	9.0	0.0	97.0	3.0	0.0	100.0	22.6	141	85		
Saint Vincent and the Grenadines	6.3	63.8	36.2	9.8	0.0	99.9	0.1	0.0	100.0	286	182	103		
Samoa	3.5	71.4	28.6	12.5	0.0	97.8	2.2	0.0	100.0	176	126	50		
San Marino	7.6	85.2	14.8	9.9	93.6	6.4	0.0	0.0	100.0	2 350	2 002	348		
Sao Tome and Principe	3.0	66.7	33.3	2.9	0.0	78.8	21.3	0.0	100.0	45	30	15		
Saudi Arabia	4.0	80.2	19.8	9.4	0.0	100.0	0.0	10.5	31.9	444	356	28		
Senegal	4.5	55.7	44.3	13.2	0.0	83.6	16.4	0.0	100.0	61	34	27		
Seychelles	6.4	77.1	22.9	8.8	0.0	78.0	22.0	0.0	100.0	736	568	169		
Sierra Leone	3.0	41.4	58.6	7.2	0.0	73.2	26.8	0.0	100.0	17	7	10		
Singapore	3.2	35.8	64.2	5.5	23.2	76.8	0.0	0.0	100.0	663	237	425		
Slovakia	7.8	79.8	20.2	12.4	92.8	7.2	0.0	0.0	100.0	736	587	149		
Slovenia	8.9	79.3	20.7	16.3	96.3	3.7	0.0	48.1	51.9	1 236	981	133		
Solomon Islands	3.5	95.3	4.7	11.4	0.0	85.3	14.8	0.0	6.7	102	98	0		
Somalia	2.4	62.5	37.5	5.6	0.0	92.6	7.4	0.0	100.0	11	7	4		
South Africa	10.3	47.3	52.7	12.7	0.0	99.8	0.2	77.8	20.2	770	364	82		
Spain	7.0	77.2	23.5	13.5	10.9	89.1	0.0	23.4	76.6	1 162	897	210		
Sri Lanka	3.2	49.5	50.5	6.0	0.0	95.8	4.2	1.0	99.0	94	47	47		
Sudan	4.4	20.9	79.1	3.4	0.0	100.0	0.0	0.0	100.0	46	10	36		

Table 2.1 *continued*

Country	Percentage shares										Per capita expenditures in PPP dollars			
	THE/GDP (%)	PHE/THE (%)	PotHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PHE (%)	PvtIns/PotHE (%)	OOPS/PotHE (%)	THE	PHE	OOPS		
Suriname	6.2	62.1	37.9	19.9	44.7	22.8	32.5	0.0	100.0	191	119	72		
Swaziland	3.4	72.3	27.7	8.2	0.0	79.3	20.7	0.0	100.0	148	107	41		
Sweden	8.1	84.3	15.8	11.5	0.0	100.0	0.0	0.0	100.0	1 743	1 469	275		
Switzerland	10.2	74.1	26.8	14.5	79.3	20.7	0.0	41.7	16.6	2 598	1 924	116		
Syrian Arab Republic	2.5	33.6	66.4	2.9	0.0	99.5	0.5	0.0	100.0	74	2.5	49		
Tajikistan	3.0	66.0	34.0	9.4	0.0	96.6	3.5	0.0	100.0	22	14	7		
Thailand	3.7	56.9	43.1	8.5	8.4	91.5	0.1	13.6	86.2	234	133	87		
The former Yugoslav Republic of Macedonia	6.5	84.8	15.2	15.6	89.6	9.9	0.5	0.0	100.0	276	234	42		
Togo	2.8	42.8	57.2	4.3	0.0	84.7	15.3	0.0	100.0	40	17	23		
Tonga	7.9	46.8	53.2	13.1	0.0	90.7	9.3	0.0	100.0	342	160	182		
Trinidad and Tobago	5.0	43.6	56.4	7.6	0.0	100.0	0.0	5.9	88.0	373	162	185		
Tunisia	5.3	40.4	59.6	6.7	42.7	57.2	0.1	0.0	90.9	281	114	152		
Turkey	4.2	71.6	28.4	10.1	33.2	66.8	0.0	0.2	99.6	265	190	75		
Turkmenistan	3.9	74.5	25.5	11.7	9.9	87.7	2.4	0.0	100.0	110	82	28		
Tuvalu	8.9	71.4	28.6	7.7	0.0	94.2	5.8	0.0	100.0	151	108	43		
Uganda	3.7	50.7	49.3	11.5	0.0	38.2	61.8	0.6	59.1	42	2.1	12		
Ukraine	5.4	75.0	25.0	9.3	0.0	99.2	0.8	0.0	100.0	177	133	44		

Table 2.1 continued

Country	Percentage shares										Per capita expenditures in PPP dollars			
	THE/GDP (%)	PHE/THE (%)	PvtHE/THE (%)	PHE/GGE (%)	SocSec/THE (%)	GenRev/PHE (%)	ExtRes/PHE (%)	PvtIns/PvtHE (%)	OOPS/PvtHE (%)	THE	PHE	OOPS		
United Arab Emirates	3.7	79.3	20.7	26.9	0.0	100.0	0.0	19.1	65.9	771	611	105		
United Kingdom	6.7	83.7	16.3	14.3	11.6	88.4	0.0	21.3	67.1	1 399	1 171	153		
United Republic of Tanzania	5.1	47.1	52.9	14.8	0.0	63.3	36.7	0.0	85.9	21	10	10		
United States of America	13.0	45.5	54.6	18.0	31.9	68.1	0.0	60.6	28.2	3 915	1 780	603		
Uruguay	10.0	45.9	54.1	13.7	51.7	47.7	0.6	63.3	36.7	922	424	183		
Uzbekistan	4.6	82.9	17.1	11.6	0.0	99.4	0.6	0.0	100.0	94	78	16		
Vanuatu	3.3	64.3	35.8	9.6	0.0	51.6	48.4	0.0	100.0	104	67	37		
Venezuela Bolivarian Republic of	4.1	64.1	35.9	10.5	33.4	66.6	0.0	4.7	86.6	247	159	77		
Viet Nam	4.5	20.3	79.7	4.0	0.0	93.3	6.7	0.0	100.0	71	14	56		
Yemen	2.9	37.9	62.1	3.3	0.0	90.1	9.9	0.0	100.0	22	8	14		
Yugoslavia	7.8	58.7	41.4	13.8	0.0	100.0	0.0	0.0	100.0	170	100	70		
Zambia	6.0	56.5	43.5	13.4	0.0	60.7	39.3	0.0	73.3	45	25	14		
Zimbabwe	9.5	59.1	40.9	15.4	0.0	61.9	38.1	21.0	67.0	242	143	66		

Note: HE = Health Expenditure, T = Total, P = Public, Pvt = Private, GGE = General Government Expenditure, SocSec = Social Security, GenRev = General Revenue (Tax Funded), ExtRes = External Resources, Ins = Insurance, OOPS = Out of Pocket Spending

estimates are not yet available except for preliminary and qualitative analysis.

The International Monetary Fund (IMF) publishes estimates of consolidated and budgetary central government revenues and expenditures for its member countries, which are most, but not all, of the WHO Member States (IMF, 2000a; 2000b). On the revenue side, taxes (general revenue) are distinguished from social security and other taxes on payroll or employment, as well as from taxes on trade and nontax revenues. When a country spends little public money on health, these estimates allow us to see whether that is the result of low tax intake, in dollars or as a share of GDP, or the result of a low share of revenue being used for health. There are no systematic estimates available of revenue-raising capacity, or of the extent to which a country's economic level and structure would permit, at reasonable cost, a higher public revenue relative to total income. On the expenditure side, the IMF numbers include estimates for central government health spending as well as for education, defence, and interest payments. The numbers for health do not match the National Health Accounts' estimates of total public spending on health because spending by states, provinces, and municipalities from their own revenues is excluded (earmarked transfer payments to subnational government are included), apart from differences in accounting for social security health spending. Estimates for 56 countries are available for 1997 and 1998.

Most of the analysis that follows considers all the WHO Member States together. This gives us both the largest possible number of observations and enables us to look for relationships over a wide range of incomes. Since there may be some significant regional differences in health spending or in how it is financed, some analyses are also carried out by region, using the six WHO regions. These do not match the classifications used by the World Bank or the IMF exactly, but the IMF revenue and expenditure data have been regrouped to follow the WHO regions, as shares of GDP and in PPP dollars per capita (Heller, 2001). The largest single discrepancy is that Canada and the United States are grouped with the rest of the Americas in one WHO region, and Japan and Australia grouped with the western Pacific countries. These four countries would usually be grouped with western Europe as high-income countries. Partly to remedy this, and to group countries more homogeneously with respect to health status, WHO further divides the six regions into 14 strata characterized by child mortality (under 5 years old) and by adult mortality (between 15 and 45 years old). These groupings divide adult mortality into under 2%, 2 through 6%, and more than 6%. Child mortality is

divided relative to a 20% threshold and to a regression relating child and adult mortality among countries (WHO, 2000b). The groupings are used to present health status data in the *World health report 2000* (WHO, 2000a, pp 204–205 and Annex Tables 3 and 4).

Combining geographic region and mortality statistics permits us to look more closely at possible relations between health spending and health status, but several of the strata are too small for meaningful analysis. In any case, the direction of causation, if any, between spending and health is complicated (Ruger, Jamison, and Bloom, 2001). The revisions to the published 1997 estimates most strongly affect the results for the low-mortality stratum in the European Region, which includes several central Asian countries. There are also substantial changes to the estimates for China and India. These estimate changes would affect estimates of total spending more than the patterns observed when all countries are treated equally rather than being weighted by population or income. Table 2.2 shows the composition of the six regions and 14 strata. These are also classified by three nearly equal ranges of per capita income. There is, not surprisingly, a substantial correlation between stratum and income, except where countries with high child mortality differ markedly in adult mortality, due principally to the AIDS epidemic.

The analysis begins by looking at total health spending relative to GDP, as a function of GDP per head. Assessing the level of total health spending in the face of any notion of need, however, requires consideration of dollar amounts, so we next compared the per capita levels of total health expenditure, out-of-pocket spending, and public spending to per capita income, all in purchasing power parity dollars. (No analysis is conducted with exchange rate dollars or in national currency, nor with international dollars as calculated previously.) The remainder of the analysis of this chapter looks at shares relative to total health spending, government revenues, or total public or central government expenditure. We have not included any econometric estimation, only a description of patterns (or their absence). Where there appears to be a clear pattern within a region or stratum, or a marked difference among regions or strata, the analysis is at that level; otherwise, all countries for which there are data are considered together.

## 2.2 HOW MUCH DO COUNTRIES SPEND ON HEALTH?

Countries differ so widely in income, with so many bunched at low incomes, that the most useful way to visualize relations between them is to take logarithms of all income amounts. This also gives a visual clue to

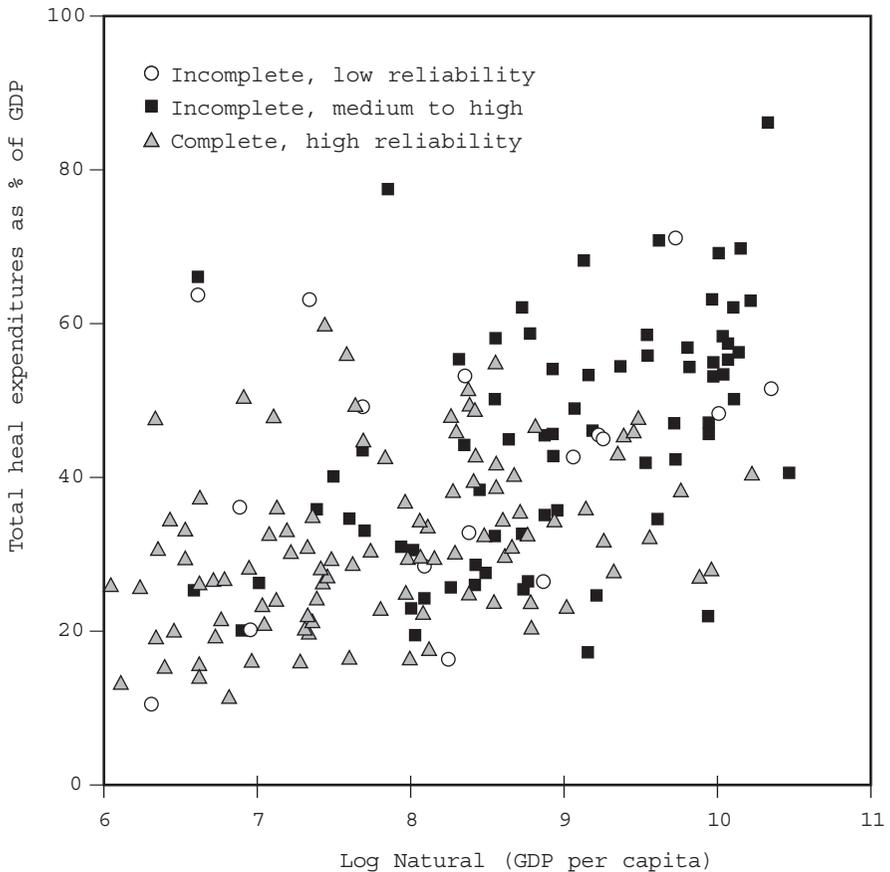
Table 2.2 COUNTRIES GROUPED BY WHO REGION, MORTALITY STRATUM, AND GDP PER CAPITA					
(PPP) Income Class		Very Low < US\$ 1000	Low US\$ 1000–2200	Middle US\$ 2200–7000	High > US\$ 7000
WHO Region	Mortality Stratum (Child/Adult)				
<i>African Region</i>	D Both high	Benin, Burkina Faso, Chad, Guinea-Bissau, Madagascar, Mali, Niger, Nigeria, Sierra Leone	Angola, Cameroon, Cape Verde, Comoros, Equatorial Guinea, Gambia, Ghana, Guinea, Mauritania, Sao Tome, Senegal, Togo	Algeria, Gabon, Liberia,	Mauritius, Seychelles
	E High/very high	Burundi, Congo (B), Congo (K), Eritrea, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Zambia	Central African Republic, Côte d'Ivoire, Lesotho, Uganda	Botswana, Namibia, Swaziland, Zimbabwe	South Africa
<i>Region of the Americas</i>	A Both very low		Cuba		Canada, United States
	B Both low			Belize, Brazil, Colombia, Dominican Republic, El Salvador, Grenada, Guyana, Honduras, Jamaica, Panama, Paraguay, St. Lucia, St. Vincent, Venezuela	Antigua & Barbuda, Argentina, Bahamas, Barbados, Chile, Costa Rica, Mexico, St. Kitts & Nevis, Suriname, Trinidad & Tobago, Uruguay

(PPP)	Income Class	Very Low < US\$ 1000	Low US\$ 1000–2200	Middle US\$ 2200–7000	High > US\$ 7000
WHO Region	Mortality Stratum (Child/Adult)				
<i>Region of the Americas (cont'd)</i>	D Both high	Haiti		Bolivia, Ecuador, Guatemala, Nicaragua, Peru	
<i>Eastern Mediterranean Region</i>	B Both low			Iran, Jordan, Lebanon, Syria, Tunisia	Bahrain, Cyprus, Kuwait, Libya, Oman, Qatar, Saudi Arabia, United Arab Emirates
	D Both high	Afghanistan, Somalia, Yemen	Djibouti, Pakistan, Sudan	Egypt, Iraq, Morocco	
<i>European Region</i>	A Both very low			Croatia	Andorra, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom

Table 2.2 continued

	(PPP) Income Class	Very Low < US\$ 1000	Low US\$ 1000–2200	Middle US\$ 2200–7000	High > US\$ 7000
WHO Region	Mortality Stratum (Child/Adult)				
<i>European Region (cont'd)</i>	B Both low	Bosnia	Armenia, Azerbaijan, Tajikistan, Uzbekistan	Albania, Bulgaria, Georgia, Kyrgyzstan, Macedonia, Romania, Turkey, Turkmenistan, Yugoslavia	
	C Low/high		Moldova	Belarus, Kazakhstan, Latvia, Lithuania, Ukraine	Estonia, Hungary, Russia
<i>South-East Asia Region</i>	B Both low			Indonesia, Sri Lanka, Thailand	
	D Both high	Bhutan, Myanmar	Bangladesh, India, Nepal, North Korea	Maldives	
<i>Western Pacific Region</i>	A Both very low				Australia, Brunei, Japan, New Zealand, Singapore
	B Both low		Cambodia, Kiribati, Laos, Marshall Islands, Micronesia, Mongolia, Tuvalu, Viet Nam	China, Cook Islands, Fiji, Nauru, Papua New Guinea, Philippines, Samoa, Solomon Islands, Tonga, Vanuatu	Malaysia, Niue, Palau, South Korea

**Figure 2.1** TOTAL EXPENDITURE ON HEALTH AS PER CENT OF GDP VERSUS GDP PER CAPITA (191 COUNTRIES)



Source: Author, using WHO and IMF statistics.

income elasticities. The graphs that follow show per capita income in natural logs, over the range from 6 (equivalent to US\$ 400) to 11 (equivalent to just under US\$ 60 000).

The NHA data confirm once again the finding that health is a luxury good, taking a generally rising share of GDP as income increases, from around 2 to 3% to a typical level of 8 to 9% (Figure 2.1). A better baseline against which to measure health costs would be income net of some measure of subsistence, but there is no common estimate of that concept. Many countries are so poor—28 have average per household incomes of under US\$ 1000 per year or about US\$ 3 per day—that those that spend even as much as 4% of their total income on health would show a quite high share of nonsubsistence income, comparable with that of much rich-

er countries. A striking finding is that the share varies greatly at all income levels. Even at low incomes, countries show almost as large a variation in how much of their GDP goes to health as countries with high incomes show. The health share of GDP ranges from below 3% to 6% among African countries with incomes of less than US\$ 2500. This is comparable with the 5 to 10% spread seen in most countries of the Americas at incomes between US\$ 10 000 and US\$ 20 000, or the 3 to 6% range in the Eastern Mediterranean Region in the same income group. This counterintuitive result—that countries that seem to have less scope for variation nonetheless vary as much as countries with more leeway for differences in spending—shows up repeatedly in what follows. The one clear exception is in the composition (not the level) of public spending, where rich countries show more variation in the importance of social security relative to general revenue expenditure.

Of course, these shares of GDP translate into a much wider range of dollar amounts per capita on health. All health expenditures are converted to dollars at the same PPP rates as incomes, because health-specific price indices are only gradually becoming available. When the data are displayed linearly, the strong relation to income that appears for all countries together is also evident in every WHO region and every mortality stratum that includes at least six countries. (The data for several countries in the small strata are incomplete or of only low or medium reliability.) This relation looks much weaker in relative (logarithmic) terms, and the apparent dispersion is reversed. Relative differences are largest in poor countries, sometimes as high as 5:1 at incomes under US\$ 5000 but no greater than about 2:1 among most countries at incomes of US\$10 000 to US\$ 20 000. There are no marked differences among regions in either the shape or the slope of the line marking the relationship between expenditure and income. There are more substantial differences in the way that health is financed, but these do not seem to affect the total systematically. In other words, the WHO regions do not correspond to distinct levels of health financing, given income. In most countries, estimated total health spending is quite low—less than US\$ 45 per person per year in 25 countries with incomes below US\$ 1000 and still below US\$ 110 in another 32 countries at incomes under US\$ 2200.

Some countries spend, in total, less than the cost of an essential package of cost-effective services. The World Bank estimated this cost in 1993 at about US\$ 12 per capita in very poor countries and US\$ 22 in middle-income countries (World Bank, 1993). Of course, these estimates, even if correct as far as they go, do not suggest what total health spending should

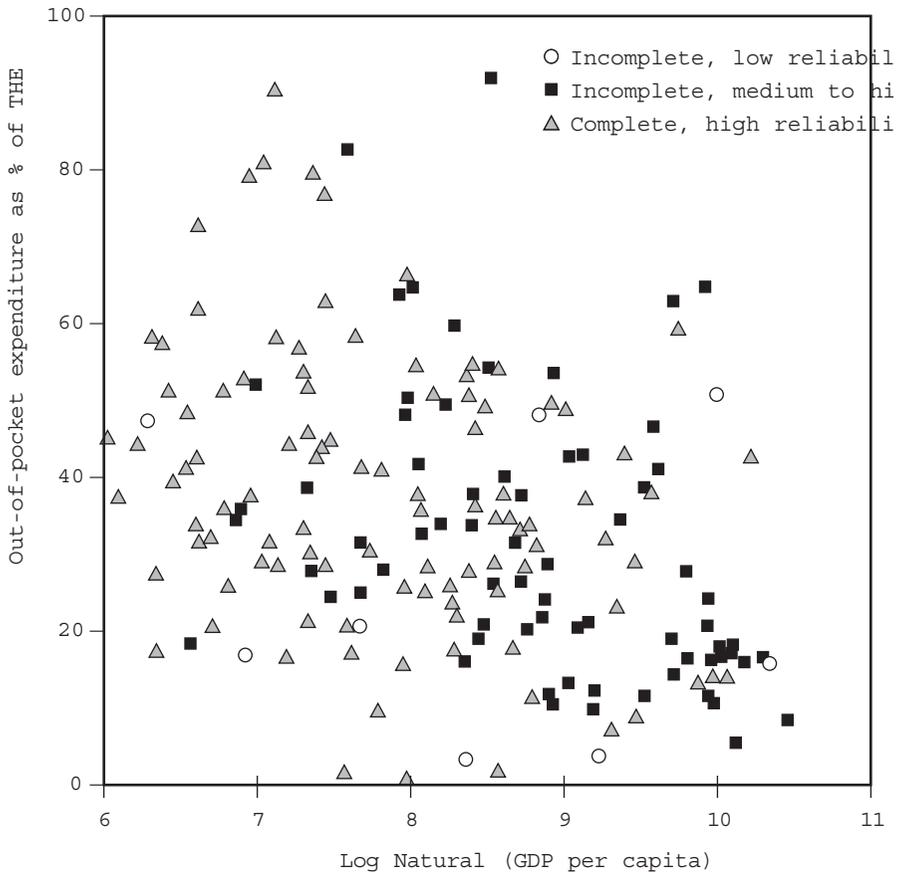
be once it passes those levels. What is clear is that some countries are not spending enough to ensure that even a few highly justified services are provided to everyone in the population—whether the justification is based on cost-effectiveness, protection from catastrophic expense, or another criterion. Inadequate spending in this sense is quite distinct from asking if such low health expenditure represents underinvestment and loss of potential economic growth (Ruger, Jamison, and Bloom, 2001).

WHO has tried to find a threshold of expenditure by looking for changes in the slope or shape of a relation between health expenditure and health outcomes, as measured by disability-adjusted life expectancy (Evans et al., 2000). Countries that spend less than US\$ 80 per person per year appear to achieve less of their potential for health than countries that spend more. However, it is not clear that this is due to low spending as such. It could be due to the effects of the AIDS epidemic, for example, or the general problems of war and poor government that afflict many of the poorest countries. In any case, what is possible is too ill defined to establish a threshold above which health expenditure becomes significantly more effective. Arguments about the need to spend more are more solidly grounded in comparisons between cost and health status than on any relation between expenditure and efficiency in the use of resources. These arguments also apply at very low levels of expenditure rather than generally.

There is no good answer to the question “What should a country spend on health?” Nonetheless, the findings on total health expenditure discussed above, plus those presented below on public spending and prepayment generally, do suggest an argument for more expenditure and especially more public expenditure in poor countries. We discuss this point in more detail later on.

### 2.3 PAYING BEFOREHAND OR AT TIME OF NEED

Because of its relation to financial risk, especially catastrophic risk, the most important distinction in how health is paid for is that between prepayment in all its forms and out-of-pocket payment when using the service. Paying out of pocket makes sense for small amounts for all but the very poorest users. Covering them by explicit insurance involves administrative costs that are large relative to the benefits, while implicit coverage by public finance means fewer resources are available for the costly interventions against which people are more in need of protection (Musgrove, 1996; see also Figure 2.1). The poorer a country, the lower the threshold that defines catastrophic expenses for most people. Therefore, the share of

**Figure 2.2** OUT-OF-POCKET EXPENDITURE AS PER CENT OF TOTAL HEALTH EXPENDITURE VERSUS GDP, PER CAPITA (191 COUNTRIES)

Source: Author, using WHO and IMF statistics.

out-of-pocket spending ought to increase as income rises. Exactly the opposite occurs (Figure 2.2). At low incomes, the out-of-pocket share is high on average, and extremely variable—ranging from about 20 to 80% of all health spending. With increasing income, not only does the average share fall sharply, but also the range narrows. Except for a very few countries (only four or five with highly reliable data), there is a sharply defined frontier of maximal out-of-pocket spending, or minimal share of prepayment in the total. Such a downward-sloping frontier shows up, somewhat less markedly, in sub-Saharan Africa, the Americas, and the Eastern Mediterranean and North Africa. It does not show up in Europe, where the out-of-pocket share is nearly always below 40% to start with. The declining share of out-of-pocket spending does not offset the rapid rise in

total spending on health, so that the dollar amount spent out of pocket still climbs rapidly as income and total spending increase.

A given overall share of out-of-pocket spending may represent relatively little financial risk to households if it is low and is distributed more or less proportionally to capacity to pay. Everyone is then buying those, and only those, health goods and services that are affordable. The WHO index of equality of household contribution to financing health (which also includes prepayment through taxes, social security contributions, and insurance) attempts to measure the extent to which this is the case. However, the index suffers from the limitation that each household's contribution is compared to an estimated average contribution across all households, so that equal index values in two countries can refer to quite different levels of catastrophic risk. This is apart from the fact that the index does not distinguish voluntary from involuntary contributions, nor progressive from regressive departures from equality (Wagstaff, 2001).

A simpler indicator of the risk of relying on out-of-pocket payments is the fraction of households whose estimated contribution to paying for health was more than 50% of their income net of food expenditures, which WHO has used as a measure of capacity to pay. In most of the 21 countries studied, these households make up 5% or less of all the households in the survey, but in a few cases the share is more than 10%. There is no relation between this share and income level. The sample is small—it includes no high-income countries, for example. Furthermore, there seems to be no connection between the overall level of out-of-pocket spending, which is what gives rise to catastrophic risks, and the fraction of households with very high levels of such spending.

Counting heads says nothing about the importance of catastrophically high health spending at the household level in terms of total health spending. This share might be expected to decrease with income, both because the threshold of “catastrophic” rises and because prepayment increasingly takes over from paying out of pocket. When *catastrophic spending* is measured by the total expenditure of all the households that suffered such spending, the share is often more than 10% of what all families together contributed to financing health, and is sometimes more than 20%. There is still no strong relation to income, for the reasons just mentioned, but now the highest value occurs at a much lower income than for the household head-count. If *catastrophic spending* is redefined as the total expenditure after deducting 50% of capacity to pay, the numbers are smaller but the pattern hardly changes. That is, in every country studied, a small fraction of households account for a rather large share of total

spending, and much of that spending represents a very high share of their potential for non-food spending out of their income—truly catastrophic.

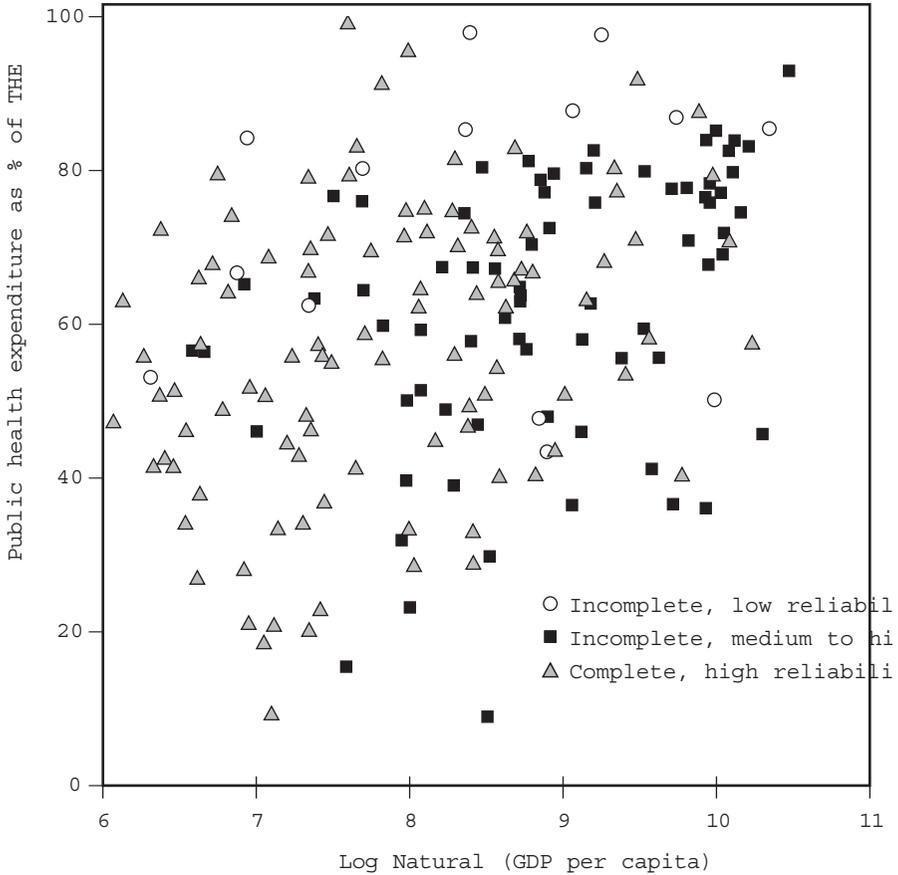
The household survey data for these countries do not include any information about how families actually financed these catastrophic expenditures. A recent survey in India shows that it is very common for health needs to push families into selling assets or borrowing cash, even in the upper income quintiles (Peters et al., 2001, Figures 3.5 and 3.6). Only about half of all families can afford a medical emergency out of their current income or savings, and the loss of savings can still leave them dangerously exposed to other risks. Reducing the risk of losing assets or impoverishment is the chief benefit from extending prepayment and confining out-of-pocket payment to affordable services as incomes rise.

Preliminary results from a larger sample of 44 countries, including some at incomes well above the incomes of the 21 countries reported here, seem to show the effect of losing assets and becoming impoverished. The relationship is not very marked, but the shares of households with catastrophic spending, and the proportion of catastrophic spending in the total expenditure, tend to fall with rising income. Richer countries do not simply spend more on health; they generally distribute the burden more equitably, with less risk of financial catastrophe for individuals and households.

#### 2.4 HOW IS PREPAYMENT FINANCED?

Some mechanisms are not widely used and make very little contribution to total health spending. These include “health cards” that are bought in advance of need and amount to small purchases of a fixed monetary amount of insurance. Aside from these, there are three basic ways to finance prepayment: private insurance (which may be either entirely voluntary or employment-related), social security contributions, and taxes (general revenue). All publicly financed health is prepaid; private spending is divided between insurance and out-of-pocket payments. When private insurance finances a negligible share of health expenses, as it does in most countries and virtually all poor countries, the distinction between prepayment and out-of-pocket spending coincides with that between public and private expenditure. (This is one of two reasons why public spending is generally important in poor countries; the other reason is that only public spending will pay for public goods and services with large externalities.) Public spending is then close to being the complement of the out-of-pocket share. As a share of total health spending, it shows the same sort of frontier, this time for the minimum rather than the maximum share

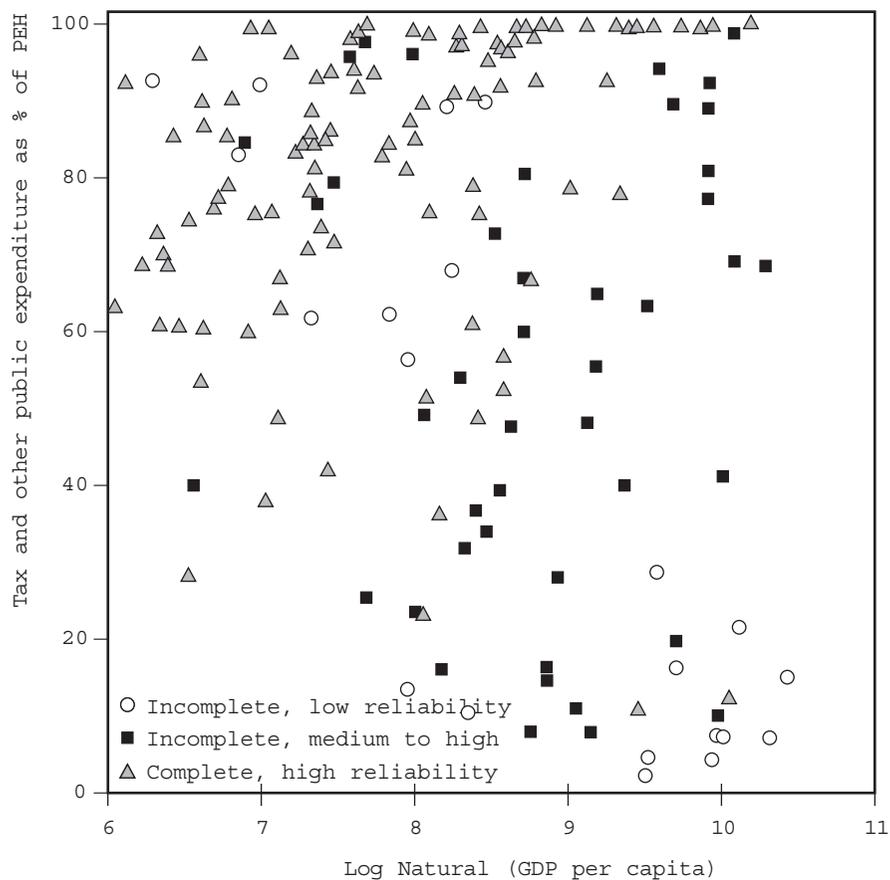
**Figure 2.3** PUBLIC EXPENDITURE AS PER CENT OF TOTAL HEALTH EXPENDITURE VERSUS GDP PER CAPITA (191 COUNTRIES)



Source: Author, using WHO and IMF statistics.

(Figure 2.3). Public spending rises with total spending, but this rise occurs more rapidly when all countries are considered together. The relative variation in public spending shrinks, another example of convergence at high incomes. However, there is less apparent convergence and a tighter relation between public and total expenditure when only the highly reliable data are examined. This is because the less reliable estimates systematically increase the scatter at low incomes. Europe is the only region where the public share is always above 40% —and nearly always above 60%—with little relation to income.

Within public spending, as classified in National Health Accounts, there is a further distinction between social security contributions and general revenue, or “tax-financed”, expenditure. The latter is the pre-

**Figure 2.4** TAX-FUNDED AND OTHER PUBLIC EXPENDITURE AS PER CENT OF PUBLIC EXPENDITURE ON HEALTH VERSUS GDP PER CAPITA (191 COUNTRIES)

Source: Author, using WHO and IMF statistics.

dominant, often the only, mode of public finance for health in most countries (Figure 2.4). Those countries where social security is the principal mode of public spending are heavily concentrated in Europe, where some countries are usually classified as following a “Bismarckian” model of social insurance and others follow a “Beveridge” model of general revenue taxation (OECD, 1994a). In these high-income countries, either model can achieve essentially full coverage of the population and account for a large share of total health expenditure. In low-income countries, in contrast, often neither model accounts for even half of total spending.

The most obvious feature of the social security/general revenue distinction is that there is no convergence between countries in relation to income. High-income countries tend to rely chiefly on one model or the

other. In lower-income countries, there are more mixed models, with part of the population covered by social security and another part protected by a Ministry of Health financed chiefly from general revenue. In practice, and particularly in Latin America, there is a great variety of institutional arrangements; the population nominally covered under one scheme often also uses services financed by a different model (Londoño and Frenk, 1997). The lack of convergence and the variety of financing combinations arose for historical reasons, largely unrelated to income. There is considerable debate as to which system—social insurance or general taxation—is better (Jönsson and Musgrove, 1997), but nothing can be concluded about that from financing data alone. This is particularly true when public expenditure of both kinds taken together is only a small share of total health expenditure.

The third main model of financing prepayment, private insurance, appears to be virtually nonexistent in the majority of countries. In the data we have used, there are only 47 countries where it accounts for as much as 5% of private health expenditure (only five of these are in Africa), and that may mean a share of total spending as low as 1 to 2%. Private insurance is even more of a luxury than public spending, and is generally more important at high incomes. Most of the countries where insurance is a large fraction of private spending are in the Americas or Europe. Insurance's share of total health spending varies considerably, because it may be a significant form of prepayment (as in South Africa and the United States) or may be purchased to complement publicly funded services (as in Canada and several European and Latin American countries). The relative importance of private insurance also depends on whether the well-off are required to purchase it and leave the public system (as in the Netherlands) or are encouraged to do so by being allowed to direct their social security contributions to private insurers (as in Chile). The current NHA data do not distinguish between insurance purchased voluntarily by individual consumers and that purchased on their behalf by employers, although that distinction can be made in the future. Purchase by employers accounts for a large share of insurance in Brazil and the United States and for much of the health financing for employees of the (much smaller) formal sector in a number of other countries.

## 2.5 HOW MUCH OF PUBLIC SPENDING GOES ON HEALTH?

If public expenditure on health is, by some criterion, too low, there are two possible explanations: low total public expenditure or a low share of the total being devoted to health. (Some countries can, of course, suffer

from both causes.) The NHA data relate public spending on health to total general government expenditure. This share almost never exceeds 20% and is below 10% for the majority of countries. Almost all countries in sub-Saharan Africa devote less than 10% of government expenditure to health, and the same is true in the Eastern Mediterranean and in North Africa. There is a tendency for the health share to increase as income rises, from around 5 or 6% to about 10%, but with great variation at all income levels. Instead of convergence as income increases, there is more absolute variation and about the same amount of relative variation.

The pattern of health spending relative to total government spending closely resembles the pattern for health spending relative to GDP. This is because the share of GDP that passes through government varies little on average as a function of income. The IMF estimates total central government expenditure relative to GDP, and the fractions devoted to health, education, defence, and interest payments, both domestic and foreign (Table 2.3). These estimates do not closely approximate the NHA numbers when subnational government is responsible for much of the spending, as in Brazil, China, and India. This means the share of GDP financing health expenditure is underestimated. On average, the share of GDP spent by central governments from all sources increases only slightly (from 24% to 29%) from very low to middle incomes, with a further increase to 32% among high-income countries. Within the lower-income groups, and often within each mortality stratum, there is considerable variation, sometimes by as much as 3 to 1. Failure to capture a large enough share of a country's output for public use does not seem to be a general explanation for low health spending in poor countries, but it helps explain the low shares of GDP that central government spends on health in some countries. (China, El Salvador, and the United Arab Emirates are examples: Chinese spending is much higher when general spending is included rather than central government spending alone.) At high incomes and low mortality, the shares converge somewhat for total spending, but much less so for health expenditure. In fact, the relation between the two fractions of GDP appears to fan out as central government accounts for a larger share of the economy. This is consistent with, but more marked than, the widening variation in the share of GDP spent on health as a function of income.

## 2.6 SUMMING UP

Since this chapter is intended to see only whether a selection of data, primarily from National Health Accounts, shows any patterns of interest, our analysis does not lead to any striking or unexpected conclusions.

**Table 2.3** CONSOLIDATED AND BUDGETARY CENTRAL GOVERNMENT EXPENDITURE BY FUNCTION, AS SHARES (PER CENT) OF GDP FOR 56 IMF MEMBER COUNTRIES GROUPED BY WHO REGION, MORTALITY STRATUM, AND GDP PER CAPITA, 1997–1998

Country	Total	Health	Education	Defence	Interest
<i>Very low income &lt; US\$ 1000, African Region, mortality stratum E (high/very high)</i>					
Burundi	24.00	0.61	3.44	6.07	1.76
Congo (Dem Rep)	11.32	0.02	0.03	1.73	0.19
Ethiopia	24.84	1.27	3.47	2.10	2.47
Kenya	28.78	1.62	5.85	1.53	7.58
Zambia	29.45	2.63	4.16	1.82	3.41
<i>Very low income &lt; US\$ 1000, African Region, mortality stratum D (high/high)</i>					
Madagascar	17.66	1.10	1.77	0.91	4.89
<b>Total, very low income</b>	<b>24.44</b>	<b>1.31</b>	<b>3.18</b>	<b>2.88</b>	<b>3.36</b>
<i>Low income US\$ 1000–2200, African Region, mortality stratum D (high/high)</i>					
Cameroon	12.46	0.56	2.11	1.35	2.83
Ghana	19.72	1.44	4.43	0.92	2.83
<b>Total, low income</b>	<b>24.21</b>	<b>1.26</b>	<b>3.72</b>	<b>1.85</b>	<b>3.04</b>
<i>Middle income, US\$ 2200–7000, Region of the Americas, mortality stratum B (low/low)</i>					
Belize	27.26	2.29	5.70	1.46	2.35
Brazil	31.82	1.83	1.09	0.98	3.42
Colombia	16.58	1.56	3.56	2.35	2.47
Dominican Republic	16.52	1.85	2.48	0.77	0.53
El Salvador	10.96	0.90	2.26	0.84	1.32
Grenada	30.18	2.90	4.70	—	2.08
Panama	34.65	6.79	6.53	1.63	5.09
Paraguay	13.29	0.84	2.53	1.49	0.85
St. Vincent	40.04	3.80	5.10	—	—
<i>Middle income, US\$ 2200–7000, European Region, mortality stratum B (low/low)</i>					
Albania	29.01	1.14	0.64	1.13	6.64
Bulgaria	31.63	1.75	1.69	2.69	6.43
Kyrgyzstan	21.59	3.00	4.93	1.50	—
Romania	19.87	2.23	3.06	2.09	2.62
Turkey	31.13	1.23	3.49	2.61	9.72
China (general govt.)	18.89	0.62	1.86	1.14	—
Fiji	29.31	2.50	5.32	1.73	2.97
Papua New Guinea	27.75	1.81	5.32	1.62	4.15
Philippines	19.26	0.56	3.96	1.36	3.47
Tonga	51.75	3.20	5.74	—	—
Vanuatu	32.35	2.59	5.02	—	0.58
<b>Total, middle income</b>	<b>28.83</b>	<b>2.25</b>	<b>4.05</b>	<b>2.31</b>	<b>3.31</b>

**Table 2.3** *continued*

Country	Total	Health	Education	Defence	Interest
<i>High income, &gt; US\$ 7000, Region of the Americas, mortality stratum B (low/low)</i>					
Argentina	15.17	0.35	0.88	0.68	2.09
Bahamas	21.03	2.98	3.80	0.63	2.37
Chile	21.98	2.64	4.00	1.84	0.57
Costa Rica	22.29	4.76	4.43	—	3.55
Mexico	15.13	0.56	3.60	0.58	2.19
Trinidad & Tobago	27.28	2.18	3.74	0.49	5.18
Uruguay	30.67	1.75	2.13	1.25	1.46
<i>High income, &gt; US\$ 7000, Eastern Mediterranean Region, mortality stratum B (low/low)</i>					
Bahrain	31.29	2.52	3.61	4.67	0.97
Cyprus	37.18	2.35	4.40	1.45	5.55
Kuwait	46.29	3.13	6.56	8.88	1.70
Oman	32.47	2.28	4.83	10.94	1.81
United Arab Emirates	10.80	0.81	1.93	3.43	—
<i>High income, &gt; US\$ 7000, European Region, mortality stratum A (very low/very low)</i>					
Czech Republic	34.34	6.21	3.55	1.63	1.06
Denmark	37.85	0.25	4.21	1.59	4.86
Finland	33.97	1.14	3.48	1.53	4.23
Greece	31.20	2.27	3.23	2.42	9.37
Iceland	28.65	7.25	2.97	—	2.56
Ireland	33.78	5.41	4.56	0.98	4.34
Israel	44.43	6.38	6.55	8.45	5.59
Malta	43.21	3.91	4.92	0.90	2.33
Netherlands	48.02	6.96	5.00	1.90	4.47
Norway	42.87	1.68	2.49	2.38	1.76
Poland	37.21	3.86	2.41	1.53	3.32
Slovak Republic	40.04	7.36	4.21	2.07	2.32
Spain	34.93	2.02	1.27	1.13	4.36
Sweden	41.55	0.46	2.60	2.26	5.71
Switzerland	27.66	5.55	0.65	1.43	0.91
United Kingdom	37.44	5.57	1.54	2.68	3.37
<b>Total, high income</b>	<b>32.49</b>	<b>3.08</b>	<b>3.46</b>	<b>2.38</b>	<b>3.38</b>

When we examined absolute expenditures, we found there is always a strong relation to income: out-of-pocket spending, total expenditure, and public spending all rise rapidly with income, with elasticities that are close to constant—slightly above 1.0 and not very different from one another—and that increase in the order indicated. In consequence, there is also a strong relation between public spending and total spending on health.

When we look at percentage shares rather than absolute amounts, the relations appear to fall into two groups: those that show some convergence towards a common pattern as income rises, especially at high incomes, and those that show no such convergence. In the latter category are the share of GDP spent on health in total, the share of public spending that is tax-funded or financed by general revenue rather than social security, and the share of health out of total government spending. In the former category, where convergence does occur, it is more marked for the variation in a share than for the average level of that share. Therefore, as income rises, the variation in health spending narrows; the public share becomes more uniformly high; and the share of out-of-pocket spending becomes much more uniformly low.

Several points emerge as part of this pattern:

- In many poor countries total health spending is very low, even compared with the cost of a package containing a short list of highly justified interventions.
- A large share of that spending is private, and out-of-pocket spending is already high enough to be catastrophic for a significant proportion of households. Therefore, even if consumers were willing to pay more out of pocket for better quality services, the poor still could not be expected to pay much more and would require preferential treatment (Newbrander, Collins, and Gilson, 2001).
- Private prepayment by way of insurance is quite limited—to the wealthy and those with formal employment. The poor probably could afford meaningful insurance coverage only with public subsidy.
- For these reasons, as well as to ensure that public goods and services with large externalities are adequately provided for, public expenditure on health is particularly important in poor countries. These countries, however, are generally the countries with the lowest relative public spending on health.

Increased prepayment, mostly via greater public spending, is what allows the out-of-pocket share to fall so markedly. This should reduce the risk of catastrophic financial risk for households. The evidence of this occurring is still preliminary: it does not show up for the first set of 21 countries for which analyses are complete, but it appears to emerge when we examine a larger set of 44 countries, some of them at higher incomes.

These findings, so far as they go, reinforce the notion that the challenge for poorer countries is not merely to spend more on health, but to spend more of it equitably by increasing prepayment, especially for potentially catastrophic expenses and particularly via public resources. Rich

countries have not converged on a single model of health financing nor a single institutional arrangement—but they have largely converged on a high degree of protection from financial risk and socialization of the burden of paying for health.

## 2.7 SOME SPECULATION: NEEDS VERSUS ACTUAL SPENDING, TOTAL AND PUBLIC

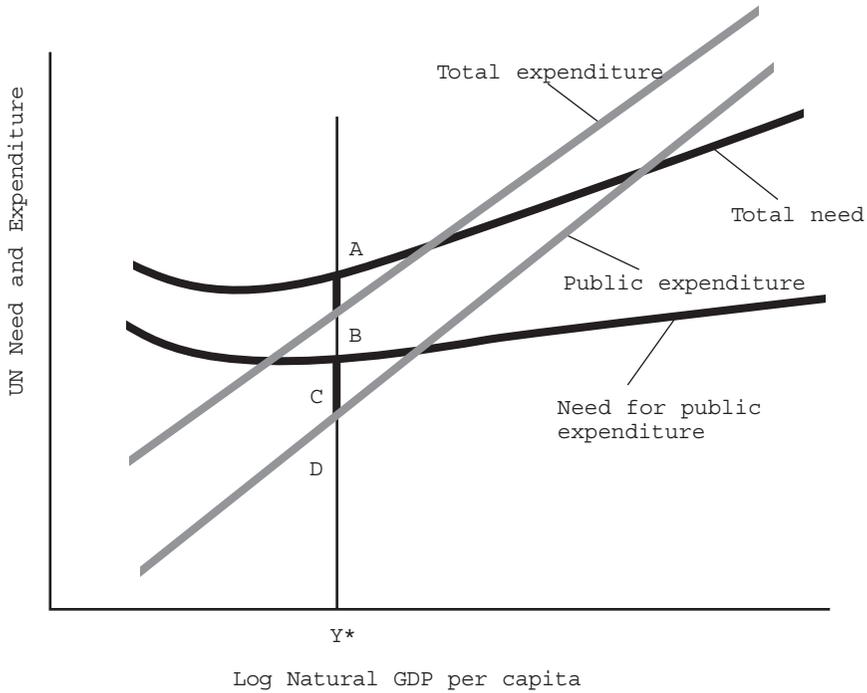
Nothing in our findings indicates how much a country ought to spend on health. That is partly because there is no consensus over what services a country ought to finance for its citizens, and different packages of services may have very different financial implications. However, a given package of services, chosen in whatever relation to a country's economic capacity and health status, and according to whatever combination of criteria (WHO, 2000a, Figure 3.2), corresponds to a relatively well defined minimum cost—if it is to be provided for the whole population. One can then say that if the country is to deliver that package, it should spend at least the corresponding minimum amount.

The prescribed cost for a particular package of services will depend on a number of characteristics of the country, including its level of income. The package might cost more to provide in high-income countries than in poorer environments because inputs are more expensive. But the reverse is also possible: a poorer country may find it costlier to reach everyone because more members of its population are widely dispersed. In addition, the low level of schooling and generally worse health status of a poor country may require more intensive intervention. Thus, on average, the need for total spending on the services in the package may be constant or may decline with per capita income, at least over a particular range. This problem of high cost for uniform, universal coverage may lead to a more limited package of services for the poor and those who are hard to reach.

Whatever the relation between income and total need defined relative to the package, the need for public expenditure on those services, as a share of the total need, almost certainly declines with income, either by declining absolutely or by rising more slowly as the country becomes richer. People can afford to pay more privately, either because out-of-pocket expenses are less onerous or because of wider private insurance coverage. More public spending would simply crowd out some of that private expenditure.

The relationship between actual total spending and actual public spending is just the opposite of that described with respect to needs. The difference between them narrows as income rises. The result is that any

**Figure 2.5** HYPOTHESIZED NEEDS AND ACTUAL SPENDING FOR AN ESSENTIAL PACKAGE OF HEALTH SERVICES VERSUS GDP PER CAPITA



*A-B* Gap on total need vs. expenditure at GDP of  $Y^*$

*C-D* Gap on public need vs. expenditure at GDP of  $Y^*$

Source: Author, using WHO and IMF statistics.

gap between needs and actual expenditure is greater for the public component than for the total (Figure 2.5). For a country with GDP per capita of  $Y^*$ , spending on health is not quite enough to provide the package to everyone—there is a gap indicated by the distance  $A - B$ . The public gap, indicated by  $C - D$ , is much larger. Even if the total gap were closed, there might still be a shortfall in public spending. Part of the population would still not benefit from the desired services, and the additional expenditure would go to other interventions and be distributed less equitably. If this line of reasoning is correct, the need in poor countries is not only to spend more on health, but also—as already occurs in most high-income countries—to reduce the dependence on out-of-pocket payments and to fund a substantial part of the increase in prepayment from public resources.



### 3. SCOPE TO MOBILIZE ADDITIONAL DOMESTIC RESOURCES

#### 3.1 HOW MUCH DO COUNTRIES RAISE BY TAXATION AND COULD THEY RAISE MORE TO SPEND ON HEALTH?

There is no simple answer to the question “What should countries raise by taxation?” Tax theory does not provide any clear advice on the subject, and it provides even less on how much should be spent on health. Theory can suggest the best tax structure to raise a given tax burden (Barro, 1990), but more elaborate attempts to integrate expenditure and taxation sides of the budget are too abstract to be useful for policy advice (Turnovsky, 1996).

In the absence of a strong theoretical base, commentators have fallen back on comparing tax revenue to GDP statistically. GDP is taken as the dependent variable, against independent variables that might influence the tax ratio—such as income per capita; the openness of the economy; and the shares of agricultural, industrial, and service sectors. The regression equation provides a hypothetical tax ratio for a country that, when compared with the actual tax ratio, indicates whether that country is raising as much, or more, than might be expected given its circumstances (Tait et al., 1979). The most recent examination of these figures for 1985 to 1995 indicates that in Latin America most countries have a tax effort ratio below 1.00 (when actual tax revenue equals the hypothetical revenue possibility). Only Belize, Costa Rica, Dominica, and Uruguay show ratios above 1.00 (Piancastelli, 2000). For Asia, half the sample shows ratios below 1.00, but the same is true for only three countries in Africa (the Republics of Cameroon, the Congo, and Sierra Leone). Indeed, this highlights a major problem with the tax effort approach: we know that most tax systems in Africa are far from perfect, so why should these unsatisfactory tax ratios be used as a standard? Just because more African countries, in the context of their peer group, have a ratio above 1.00 does not mean that their tax systems or their ratio of taxation to GDP are acceptable or that they could not do much more to improve their systems and increase revenue.

There are many problems with the tax effort approach. There is an identification problem in that income can be both a demand and a supply

**Table 3.1** TAXATION AS A PERCENTAGE OF GDP

Countries	Total Tax Revenue	Taxes on International Trade	Excises	General Sales Taxes	Social Security
<i>Low-income (31) Under US\$ 760 per capita</i>					
	14.0	4.5	1.6	2.7	1.1
<i>Lower-middle (36) US\$ 761–US\$ 3030 per capita</i>					
	19.4	4.2	2.3	4.8	4.0
<i>Upper-middle (27) US\$ 3031–US\$ 9360 per capita</i>					
	22.3	3.7	2.0	5.7	5.6
<i>High-income (23) Over US\$ 9360 per capita</i>					
	30.9	0.3	3.1	6.2	8.8

Note: Some taxes are omitted (e.g. corporate and personal income taxes); hence columns do not add to the total.

Source: IMF, Government finance statistics.

factor. Furthermore, the data (often bad data) are cross-sectional and, as has been pointed out, “few exercises are more questionable than drawing inferences about *changes* from data on *differences*” (Bird, 1991). At worst, it may be held that countries with low tax effort ratios in comparison with that of their peers might certainly be expected to raise more revenue, given their circumstances.

An alternative approach is simply to examine the raw data of tax revenues as a percentage of GDP. As countries grow richer, they tend to raise a larger share of GDP by taxation to finance public-sector spending, including spending on health. As Table 3.1 shows, low-income countries raise, on average, 14% of their GDP through taxation, lower-middle-income countries 19%, upper-middle 22%, and high-income countries 31%.

These averages conceal the large variances within each group (except for taxes on international trade). A low-income country can raise as little as 4% of GDP in taxation (Myanmar) or as much as 36% (Lesotho); in the lower-middle-income group this can be as little as 9% (Guatemala) or as high as 30% (Ecuador). An inspection of the data for each group shows no convincing pattern: all that can be said is that, broadly speaking, there appears to be the capacity—and in many cases this is a substantial capacity—to raise more money for the public sector through taxation. Countries can also gain substantial public revenue from non-tax sources

(oil or sales of state assets, for example). In some cases—Bahrain, Botswana, and Oman, for example—these can exceed tax revenue.

These large variations suggest that most nations with low public spending for health could raise perhaps 1 or 2% of GDP more revenue and allocate it to the budget for health. The reasons why countries choose not to do so are, of course, deeply rooted in the social, economic, industrial, and political structures unique to each country.

### 3.2 MACROECONOMIC CONSIDERATIONS

Consider briefly some of the macroeconomic considerations that affect decisions to increase taxation, whether for health or any other expenditure. (There is a large literature on this subject, including Bird, 1991; Schieber and Maeda, 1997; and Shome, 1995.)

#### 3.2.1 *The budget constraint*

All governments work within a budget constraint. It is the politicians' job to find the social consensus that allows them to raise enough tax revenue to finance the numerous demands on government spending. They must also allocate the budget between the different claims on public funding. Even if they can get the support to raise tax revenue by 1 to 2% of GDP, there is no guarantee that this amount would, or even should, be spent on health. Moreover, the decision on whether to raise and spend more public revenue is not likely to be decided with reference to only one sector, such as health. Macroeconomic budgetary considerations are also an important factor in deciding on the amount and timing of changes to taxation and expenditure. Governments must decide on the borrowing requirement appropriate to their country's economic situation. Tradeoffs must be decided between price stability, employment, and growth; between savings and investment; and between the demands of the public and private sectors. Whether it is appropriate to increase taxation, and whether it is correct to spend that extra revenue on health, is clearly more complicated than the straightforward emotional plea that spending more on health must necessarily be right. It is a matter for each country to decide in the light of their current circumstances.

#### 3.2.2 *Economic efficiency*

Nearly all taxes distort. Decisions that households make about purchasing goods and services or about saving and investing are skewed by taxation. Firms change their decisions about production, investment, location, and trade because of taxation. Taxes at low rates and on commodi-

ties with little price responsiveness distort decisions less (Rosen, 1995). Clearly, the more a government raises revenue by taxes, the more distortion it introduces into the system. Therefore, politicians might decide (although they are unlikely to think in these precise terms) that the economic cost of such distortions outweighs the advantages of the expenditure financed, including even spending on health.

### 3.2.3 *Equity and administration*

One argument against increasing taxation is that it is likely to be regressive until the majority of tax revenue is collected from taxes on income and wealth. As Table 3.1 shows, poorer countries collect more of their government revenue from taxes on goods and services than from income taxes. Also in poorer countries, even the incidence of personal and corporate taxes can be heavily distorted by bad administration (see below) and poor compliance.

Equity is about the net effect of government taxation and spending on households. Some taxes can be regressive, some proportional (for example, value added tax that exempts food), and some can become regressive (for example, social security payments that are capped). Often, more poor equity can be achieved by well-targeted expenditure programmes than by over-complicated tax systems. For example, cash and in-kind transfers targeted towards the poor are strongly progressive, as can be government spending on rural health care and primary education (Hemming and Hewitt, 1991). The more complicated the tax law, the more difficult it is to administer. Countries may have elegant and well-drafted corporate and personal income tax rules, but such taxes create opportunities for delay, procrastination, mistakes, and just plain incompetence, apart from the threat of corruption. Many of these finely calculated measures to achieve tax equity are rendered useless by corruption and poor tax administration. Measures designed to redistribute wealth also have an efficiency cost so there is a tradeoff between equity and efficiency (Hemming, 1991).

If, given these various constraints, a country decides to increase the amount of GDP it takes in taxation to finance increased spending on health care, how should it go about it? To illustrate, let us touch briefly on the major arguments for each potential source of extra revenue.

## 3.3 TAXATION

The main job of the tax system is to raise revenue in a secure and reliable fashion. If poorer countries are to increase their tax revenue, they are

probably best advised to do so through straightforward, simple, well-administered taxes (usually on goods and services). These are likely to be a better base for good governance than complicated “progressive” systems. As already explained, equity considerations may be dealt with, in part, through the expenditure side of the budget.

Table 3.1 and the detailed data and diagrams in the background papers (see Annex 2) show that, as countries grow richer, they rely less on taxes on international trade and switch to excises and general sales taxes instead.

### 3.3.1 *Import duties*

Countries with a weak tax administration and a lack of taxpayer sophistication often use these. The literature on optimal taxation favours a tariff rate structure that taxes final goods at a higher rate than intermediate goods, and reserves the lowest rates for tariffs on inputs and raw materials (Escolano, 1995). In practice, the information needed to construct the best tariff structure is usually unavailable and the common advice has been to lower average tariffs, curtail the dispersion of rates, and remove nontariff barriers. In general, import duties have a distorting effect, are often corroded through politically motivated exemptions, and should, through the World Trade Organization, be negotiated down to very low levels. As a general rule, import duties should not be the basis for raising new revenue for health or anything else.

### 3.3.2 *Excises*

Excises are typically levied on some five products: alcohol, tobacco, petroleum products, vehicles, and spare parts. Excises have the great advantage that they can raise huge amounts of revenue at a low administrative cost. Clearly, they should be an important part of the basic revenue for most countries, including most poorer countries. However, many poor countries raise under 2% of GDP from excises compared with 2 to 4% in high-income countries. Yet, given that poorer countries’ tax bases are altogether a lower percentage of GDP, one could expect that they should be raising more from this potentially buoyant tax base. This is especially so if the link is made between consumption of excisable products and poor health (smoking, drinking, and driving). See below for further discussion of “earmarking” tax revenue.

### 3.3.3 *General sales taxes*

Undoubtedly, the greatest potential to generate a substantial amount of revenue for governments is a truly general sales tax. The spread of the value added tax (VAT) is a testament to the revenue raising power of this tax. VAT is now used in more than a hundred countries worldwide at standard rates from 3% up to 23%. To try to achieve some equity, countries often use multiple rates of VAT (sometimes as many as five rates, as in Colombia). This complicates the administration of the tax, offers scope for evasion, and does not usually do much for equity. Certainly, any country running VAT at less than 10% is probably not getting value for money. The reasons are simple. It is the most complicated sales tax to set up and administer and its yield is maximized and evasion minimized when levied as a truly general tax on all goods and services. Countries need to ensure that its base is broad and its rate structure simple (a single rate is preferable) to reap its principal advantages (Tait, 1988). Many countries could do more to get higher and more secure revenue out of VAT. They should solve their equity problems in other ways.

### 3.3.4 *Corporate income tax*

Corporate income tax (CIT) is often seen as a convenient and politically less controversial source of revenue than sales taxes or personal income taxes. By its very nature, CIT legislation cannot be simple and depends on sophisticated, internationally acceptable accounting practices that are often difficult to implement and to monitor (OECD, 1991). Too often, in poorer countries the CIT can mean principally the taxation of large international concerns, with difficulties in applying it to indigenous firms. It can also involve complex issues of transfer pricing and is sometimes eroded by concessions designed to encourage exports, locations, employment, and investment. Finally, firms can always choose to locate where the CIT is lowest. Such tax competition is bringing down corporate tax rates worldwide (Tanzi and Zee, 2000). It is unlikely that the CIT will be the basis for large increases in the revenue base for most countries.

### 3.3.5 *Personal income tax*

The personal income tax (PIT) has the potential to be the best tax from which to obtain revenue in a progressive way. Exemptions at the bottom end of the income tax scale exempt the poorest from paying any PIT, and rates can rise to high levels (historically as high as 90%). However, most countries today adopt a top rate of 40% to 50%. Again, international mobility of the most talented people (including doctors and spe-

cialists) should put some upper limit on the top rates of PIT. Regrettably, widespread under-reporting of income, poor tax administration, and corruption often mean that this tax is paid mainly by those in well-documented employment areas (typically civil servants and employees of large corporations). Although the potential is there for greater revenue from PIT, the reality is that, in most countries, it is unlikely to be a major way to raise extra resources from the domestic sector in the short to medium term (Schieber and Maeda, 1997).

### 3.3.6 *Social security*

Social security is a tax where the revenue rises as countries become richer (see Table 3.1). Surprising amounts of revenue can be raised through social security—witness the Netherlands at 18.5% of GDP, France at 18%, and Sweden at 16.6%. The average for high-income countries is 8.8%, but the capacity for expanding revenue from this source is limited by its association with personal income tax. Social security is collected as a payroll tax and as such is often viewed by the electorate as part of the income tax. Where it is capped at a certain income level, it becomes a regressive income tax. In lower-income countries, it suffers from the same limitations as the income tax, levied principally on workers in the well-recorded formal sectors of the economy.

Social security payments were originally, and in many countries can still be, seen as an insurance payment that is linked directly to the benefits that can be drawn (unemployment pay, health benefits, and pensions). In this respect it is perceived as an earmarked tax to be spent specifically on those goods and services. To many people this, in a sense, validates or justifies these taxes. It also raises the issue of whether there is a wider role for earmarked taxes that can be linked directly to spending on health. The obvious candidates are taxes on activities likely to be injurious to health, such as using alcohol and tobacco, but others could be considered, such as taxes on vehicles and petroleum, or carbon taxes.

### 3.3.7 *Carbon taxes*

In a similar way to excises on alcohol and tobacco, it could be argued that carbon emissions harm health. Therefore, if taxed, at least a share of the revenue should be earmarked for health. The carbon tax is usually thought of as an excise on producers of fossil fuels, levied when the fuel is extracted or imported. It would be levied on the carbon content and would therefore penalize coal more than oil, and oil more than gas. As these relative values change and as their values alter relative to the costs

of labour and capital, major changes in production costs and output would take place (OECD, 1995a; 1995b). There would also be distributional and regional effects. If the revenue was retained in the country levying the tax, then studies show that it could be used to offset some of the distributional and regional effects. Combined with reductions in other taxes, it could improve overall efficiency (Böhringer and Rutherford, 1997; Mabay et al., 1997). But using the carbon tax revenue for these purposes will leave less for other areas, such as public spending on health. Given the controversial nature of the carbon tax, the claims on its revenue to compensate losers, whether from industries, regions, or employees, would probably make it difficult to use the revenue for other purposes. This is simply another aspect of the overall budget constraint mentioned above.

Carbon tax revenue could be allowed to accrue as international revenue to be used globally for spending on projects such as improving health in developing countries. But then countries would not be able to use the money to offset the domestic distributional and regional disturbances caused by the tax. This diminishes the likelihood of the carbon tax being adopted at all, never mind being used as an international tax to finance development goals.

The potential revenues from a carbon tax are undoubtedly large. At US\$ 100 per tonne, the United States might yield US\$ 165 billion a year and the European Union US\$ 110 billion (Congressional Budget Office, 1990). A hint of the political difficulties involved is indicated in that, for the tax to work, every country would have to levy it; even at US\$ 10 per tonne, China would have to pay three times more than Germany (Shah and Larsen, 1992). Even if the revenues were redistributed within the country, substantial adjustment costs would be incurred.

The obstacles in the way of getting a global carbon tax off the ground before deciding how the revenue should be used, and even before getting the claims of health financing recognized, suggest that the carbon tax should be thought of only as a medium- to long-term aid to health spending in developing countries.

### 3.3.8 *Taxes on international movements of capital* *(the “Tobin tax”)*

Put forward originally as a way to reduce the volatility of short-term international capital flows (Tobin, 1978), a tax on the international movements of capital has the potential to generate huge revenues. As such, it is

tempting to think of many worthy causes it could help finance, from the United Nations to health and education in developing countries.

Leaving aside discussions about whether the “Tobin tax” would achieve the objective of dampening short-term capital flows, there are some practical problems. In practice, it would have to be levied on all currency conversions because it is impossible to distinguish between, or fabricate watertight definitions of, international capital movements, income, and trade flows. It would be collected by each country at an identical rate but administered internationally. All countries would have to agree to levy it, because if some countries refused they could become a global bolt hole for international capital. It would distort the market, and if the objective is shifted from dampening short-term capital flows to raising revenue, we need to ask whether the inefficiencies and distortions are worth the revenue or if some other tax should be used. Its ability to provide supplementary finance for health looks like a fairly minor consideration compared with the hurdles to be surmounted to get the tax running at all. However, if it proves possible to enact, then the revenue generated could certainly provide a large source of finance, including finance for health care, for developing countries.

#### 3.4 EARMARKING

Earmarking a tax, or a proportion of a tax’s revenue, to be spent on health is attractive to many involved in the provision of health care. It appears to guarantee a flow of money to the health budget and circumvents the overall budget constraint and tedious tussles with other spending ministries. When linked to taxes on alcohol and tobacco, it appears to link the cost of an activity to the costs of providing the cure. In the eyes of some, it links sin and redemption.

However, national treasuries dislike earmarking as it limits the discretion of the government to allocate limited funds between unlimited demands. Taken to extremes, if each tax was tied to a particular expenditure, little flexibility would be left to the government. Worse, there is little that tightly connects the expansion or contraction of revenue from any tax to the changing needs for government spending on any publicly provided goods or service.

In poorer countries, the assumption that government revenues and expenditures are subject to periodic and rigorous review to establish equal preferences for marginal expenditures is even more subject to question than it is in well-off countries. It is even more unlikely that the political process leads to a well-defined social preference for public services.

“Substantial differences often exist both in preferences for public services between different groups of the population and in the extent to which those preferences are reflected in the political budgeting process” (Bird, 1991, p. 175)—this may be particularly true of health.

As countries grow richer, earmarking is probably less and less appropriate. In poorer countries and in those political systems that cannot allow for a full reflection and resolution of social priorities, earmarking may have a role to play in increasing the flow of funds to health. Furthermore, earmarking may be one way to protect the health budget when governments are looking for cutbacks. Excises on alcohol and tobacco would probably command popular support if they were clearly associated with public spending on health. Although the taxes that might be earmarked to help finance health are likely to be subject to fluctuations reflecting general macroeconomic conditions, they are unlikely to be as volatile as, say, taxes on personal income and profits. In lower-income countries, these policies should be considered as one way to gain access to a buoyant and sustainable source of funds for public spending on health (Box 3.1).

### 3.5 OTHER POSSIBLE SOURCES OF REVENUE

#### 3.5.1 *Lotteries*

Betting is often considered a sinful pursuit, ranking alongside burning fossil fuels, drinking, or smoking. The proceeds from national lotteries have sometimes been earmarked for health. However, this has many of the disadvantages of earmarking already discussed, along with some additional particular problems. Politicians can see lotteries as a way of avoiding the difficult spending allocation decisions needed for health; it is easy to suggest that the lottery will take care of any shortfalls. Moreover, lotteries can be notoriously fickle in generating revenue, and there is no reason why health spending should be tied to the uncertain patterns of people’s betting habits. Although substantial sums can be raised through gambling levies, these are probably not best tied to health expenditures.

#### 3.5.2 *User fees*

Extra money for publicly provided health care might be sought from increased use of user fees. Of course, user fees are the norm in the private sector and might be expected to play a role in the public sector (World Bank, 1997; McPake, 1993; Creese, 1991). The major argument against user fees in all countries is that, given the hugely unequal distribution of income and wealth, such fees are always going to be regressive and restrict the access of the poor to health care. This is particularly so in the case of

**Box 3.1** EARMARKING: FOR AND AGAINST*For*

Households associate the benefits of the government expenditure with the tax paid and are more prepared to pay.

Earmarking may provide a more consistent source of funds for expenditures that yield high benefits but may not be high on the political agenda, such as road maintenance.

Earmarking shields expenditures from the (messy) uncertainties of legislatures that may cut spending.

Earmarking may protect the health budget from general budgetary cutbacks.

*Against*

Earmarking means a loss of control over total expenditure.

Earmarking circumvents the budgetary process and review and may distort and misallocate funds.

Rights to earmarked revenues become entrenched with funding no longer based on agreed priorities.

Less transparency may lead to inefficiencies and misuse of funds.

Earmarking can facilitate attempts to create monopolies and abuse of monopoly power.

Earmarking could lead to cutbacks (or expansion) of services wholly unrelated to need.

Earmarking leads to less flexibility at the margin to reallocate funds when the budget is under stress.

Earmarking is incompatible with good cash management.

*Adapted from Potter and Diamond (1999, p. 26)*

catastrophic illnesses—households may be able to meet the occasional payments for everyday health problems, but when disaster strikes the payments cripple the family and professional health care becomes impossible to access. There are other considerations that make user fees more controversial. Fees must be collected and accounted for, as they may not always be used to buy the drugs and equipment intended. The seasonal character of incomes in rural areas may make it difficult to pay and collect fees. Quality of service may be difficult to monitor.

Even when private-sector fee-driven health care accounts for the majority of health care, as it does in most countries, the ability to pay for modern medicine may be significantly lower than for traditional medicine (Arhin-Tenkorang, 2000). Traditional treatments allow alternatives to cash payments, such as payments in kind, in work, or in credit, and often invoke more kinship support.

User fees can be an important way to mobilize additional resources and to discourage the affluent from using subsidized services that ought to be targeted at the poor. To be successful, as in some Indian states, ways must be found to exempt the poor from the charges, and the revenues should accrue to the facility administering the charges—which should also have authority over the spending of the revenue raised. Any fees charged should be done with minimum inconvenience to the patients. Finally, public budgets should not be allowed to offset the extra revenue raised and reduce public payments.

Given that out-of-pocket spending on health often represents the largest proportion of health spending, the opportunity for user fees to generate significant extra revenue for health must be limited (Scheiber and Maeda, 1997). In richer countries, however, it may be true that user fees could both raise extra finance and improve the allocation of health spending.

### 3.5.3 *Repealing tax incentives*

Tax incentives are often a major cost to the exchequer, and their abolition or curtailment could increase revenue substantially. Tax incentives are usually granted to promote investment. Studies show that many factors influence decisions about where to make investments. Although taxation and relief from taxation can affect an investment decision, political and economic stability, a skilled workforce, well functioning and impartial legal and regulatory systems, good banking and financial structures, and reliable communications can all be more important (OECD, 1994b; Tanzi and Zee, 2000).

Tax holidays are the most pernicious form of incentive. They are expensive, as the revenue is wholly forgone and the budgetary cost is not made explicit. They encourage avoidance and once established are difficult to get rid of. Many governments could abolish tax holidays and use the extra revenue for social spending; regrettably, such devices are often enmeshed in domestic political considerations and are difficult to change. Nevertheless, governments should try to abolish tax holidays—and the extra revenue might well be used to improve health care.

Investment allowances, tax credits, and accelerated depreciation allowances all reduce the flow of revenue. They are better than tax holidays for encouraging investment, but all conceal the true budgetary cost. The least costly is likely to be accelerated depreciation. If tax holidays were to be abolished, their replacement by accelerated depreciation allowances would probably improve the allocation of investment and

increase government revenue for other purposes, including spending on health.

All countries should review their tax systems to improve their efficiency and consider improving tax administration. Concentration on better tax administration, including stronger, more visible political and legal backing, may be less glamorous than many government activities, but in most developing countries it should be recognized that tax administration is tax policy. An efficient, respected, and uncorrupted tax system enables the government to carry out all its other responsibilities; without such a system, everything else is suspect.

### 3.5.4 *The scope for reallocating “unproductive expenditures” to the health sector*

Extra resources for health could also be secured by improving the productivity of existing public expenditure. Securing productivity gains is particularly important since empirical evidence on the relationship between spending on specific categories (such as on education or health care) and resulting outcomes in terms of social indicators (such as educational attainment and health status) is weak.<sup>4</sup> Overall budget allocations and the efficiency and targeting of actual spending both matter in achieving improvements in the outcomes and are measured by social indicators (Gupta and Verhoeven, 2001).

What are “unproductive” expenditures? The concept of expenditure productivity is relatively straightforward if you consider public-sector activities as production processes. Within this framework, the government, as a producer, aims to “maximize” certain societal goals and objectives by providing public goods, subject to an overall budget constraint. Therefore, two conditions are essential for public spending to be efficient. First, given outputs should be produced or provided at minimum cost. Second, the mix of outputs for a given level of aggregate expenditure should be optimal. In economic terms, the marginal social benefit derived from total expenditure should equal the marginal social cost. On the basis of this analysis, *unproductive public expenditure* can be defined as the difference between actual spending on a programme and the reduced spending that would yield the same social benefit with maximum cost-effectiveness.<sup>5</sup>

In practice it is difficult to measure the exact degree of unproductiveness of given expenditures. Much public-sector output cannot be assessed on an objective basis alone, but may require a value judgement. Moreover, what is productive in one country may not be so in another country,

because of differences in society's preferences. Nevertheless, the framework outlined in this Report may provide a useful way to assess current expenditure policies and discuss options for increasing expenditure productivity on a case-by-case basis.

### 3.5.5 *A practical approach for policy-makers*

A practical approach to assessing public expenditure productivity should focus on the two efficiency conditions mentioned above: cost-effectiveness and the best mix of outputs for the expenditure. When aiming to enhance the use of scarce public resources, policy-makers should first examine the cost-effectiveness of major programmes and projects. Apart from obvious inefficiencies, such as ghost employees in the government, lack of productivity may reflect ambiguous or multiple objectives. Governments need to identify clear objectives, or outputs. Then they need to adopt the lowest-cost strategy for attaining these goals. For example, a generalized subsidy could be made more cost-effective by targeting it at the poor.

Identifying efficient strategies is not an easy task. To assess cost-effectiveness in the health sector, health outcomes, as indicated by infant mortality rates or life expectancy, can be compared to expenditure on certain programmes, such as family-planning clinics, primary health care, or drug availability.

Similarly, cost-benefit analysis can help policy-makers determine the best expenditure levels for each sector. In theory, spending is efficiently allocated when total benefits can no longer be increased by reallocating money from one programme to another. For example, reallocating resources from curative to preventive programmes in health care may improve general health indicators while keeping expenditures constant. In practice, however, the benefits or outputs produced can often neither be quantified nor compared—and their “social” value may be hard to determine. Attainment of the “right” mix of outputs will therefore depend on the efficiency of existing institutions and good governance.

The broadly participatory Poverty Reduction Strategy Paper (PRSP) process, which forms the basis of IMF and World Bank assistance for the poorest countries, combines the setting of transparent and universally acceptable expenditure priorities with the possibility of finding cost-effective measures and strategies to achieve these goals.

**Table 3.2** CENTRAL GOVERNMENT EXPENDITURES FOR SELECTED COUNTRIES, 1990–1999 (WEIGHTED BY GDP AS PERCENTAGES)<sup>1</sup>

	Low-income countries			Middle-income countries		
	GDP	Total	Sample	GDP	Total	Sample
Total expenditure and net lending	19.3	100.0	21	25.1	100.0	52
Current expenditure	13.8	71.7	20	22.3	88.8	52
<i>Goods and services</i>	5.2	27.1	19	7.2	28.8	48
<i>Wages and salaries</i>	2.6	13.3	18	4.1	16.4	47
<i>Other goods and services</i>	2.2	11.4	18	3.0	12.1	47
<i>Subsidies and transfers</i>	5.1	26.3	19	10.4	41.5	49
<i>Interest</i>	3.6	18.5	19	4.7	18.6	48
Capital expenditure	3.5	18.4	20	2.5	10.0	52
Net lending	1.9	9.8	21	0.7	2.8	52

<sup>1</sup> Expenditure and GDP data were converted into US dollars and weighted by GDP.

Sources: IMF, Government Finance Statistics database.

### 3.5.6 Specific examples of unproductive expenditures

Different levels of expenditure may be justified under different circumstances, across individual countries, and at different times. It is therefore impossible to make any blanket prescriptions. Nonetheless, international experience suggests a few areas that have the potential to improve expenditure efficiency.

#### 3.5.6.1 Generalized subsidies and transfers

As Table 3.2 shows, between 1990 and 1999, spending on subsidies and transfers in low-income countries amounted to an average 5.1% of GDP, or roughly a quarter of total spending.<sup>6</sup> Subsidies and transfers may serve to offset market failures, redistribute income, or fight poverty. Nonetheless, they often lack transparency and are wasteful and expensive. For example, generalized food subsidies aimed at enhancing the nutritional status of the poor are highly inefficient. Usually the poor receive only a fraction of what is spent.

For example, for every rupee reaching the poor in a rice-subsidy programme in India's Andhra Pradesh state in 1996, Rs 3.6 were lost in "leakage" to the non-poor (see Radhakrishna et al., 1997). Similarly, subsidizing producers can create overproduction, lead to inefficient allocation of resources, and may provoke retaliation from abroad. Obviously, the

**Table 3.3** CENTRAL GOVERNMENT EXPENDITURES FOR SELECTED COUNTRIES, 1997–1998 (UNWEIGHTED AVERAGES AS PERCENTAGES)

	Low-income countries			Middle-income countries		
	GDP	Total	Sample	GDP	Total	Sample
Total expenditure and net lending	25.0	100.0	30	28.9	100.0	63
<i>Defence</i>	2.2	9.0	21	2.4	8.1	46
<i>Education</i>	3.6	14.4	23	3.8	13.2	52
<i>Health</i>	1.5	6.0	23	2.5	8.4	52
<i>Interest</i>	3.4	13.7	27	3.2	10.9	58

Sources: IMF, Government finance statistics, *International Financial Statistics*, and *World Economic Outlook*, various years.

reduction of generalized subsidies, especially those that have largely been benefiting the middle class, are likely to be met with strong political opposition. Nonetheless, better targeting can be crucial in freeing up valuable resources for more productive spending, such as efficient health care programmes.

### 3.5.6.2 Excessive military expenditure

Defence expenditure is also a highly sensitive and politicized issue. Conceptually, military expenditure is considered excessive when the marginal improvement in national security associated with this expenditure is less than its cost. Although an optimal level of national security is hard to gauge, and cannot be examined in isolation from the regional and international context, the sheer scale of global resources devoted to military spending (US\$ 740 billion<sup>7</sup> in 2000; see Gupta et al., 2001) highlights the potential gains in efficiency from a coordinated multilateral reduction in military spending. As can be seen in Table 3.3, low-income countries tend to spend a relatively high share of GDP on defence. Creating the right international environment could free some of these resources to improve health care provisions.

### 3.5.6.3 Public-sector employment and wages

The level of public-sector employment and wages is highly dependent on individual countries' particular circumstances. However, a few general points can be made. First, disproportionately large numbers of public-sector employees at low levels may be masking a hidden social protection scheme. Implementing an explicit social protection programme could offer

significant gains in efficiency. Also, employment costs can become excessive when they crowd out resources for other inputs. For example, from 1980 to 1995, 95 to 98% of spending on education in Bolivia went on salaries—rendering any spending on educational materials or operations and maintenance insignificant (see Abed et al., 1998). Similarly, true labour costs are often obscured by large in-kind entitlements such as travel or housing allowances or other supplements. As successful civil service reforms in many countries have shown, streamlining public-sector employment, enhancing transparency, and paying professional staff a competitive wage goes a long way towards using public resources productively.

#### 3.5.6.4 Public investment

Public investment is another area that may be riddled with inefficiencies. In many less-developed countries, capital expenditure accounts for a large part of the budget. As can be seen in Table 3.2, the sample of low-income countries allocated an average 18% of their total spending to this area between 1990 and 1999, compared with 10% in middle-income countries. Although infrastructure is often much needed, governments should avoid crowding out private investment, which may be more efficient. They should also refrain from prestigious projects with a low social rate of return—often called “white elephants”. Cost-benefit analysis and cost-effectiveness analysis (for social sectors) can be used to evaluate public investment activities, despite valuation and measurement problems. Also, inefficiencies can result from insufficient maintenance of public capital. For example, allocations for recurrent expenditures on roads in Ethiopia in 1993/94 were less than half of what would have been needed to maintain and rehabilitate the road network. As a result, 65% of the network had to be classified as poor, and only 10% as good (see World Bank, 1994).

### 3.6 CONCLUSIONS

In the absence of any clear way to determine how much a country should or could spend on health, a review of the actual amounts raised by taxation suggests that most countries could, if they wished, raise more, perhaps as much as 1 to 2% more. Political, social, and economic considerations of budgetary constraint, efficiency, and equity constrain revenue increases. However, reviewing ways to raise extra revenue suggests that excises could yield more, as could truly general, broad-based sales taxes. Reducing tax exemptions and spending on subsidies that are

frequently inefficient, inappropriate, and badly administered can usually generate more revenue. The scope to raise more revenue through taxes on carbon emissions or the movement of international capital is likely to be small in the immediate future, not because such taxes are impractical but because international political agreement seems distant. Earmarking taxes on smoking, drinking, and petrol consumption may be able to secure funding for health where the political and social systems continually under-fund the health budget and do not allow for a full discussion and resolution of social priorities.

Even without raising the level of aggregate public spending, there is considerable scope for improving health outcomes. Apart from the reallocation of resources from relatively unproductive uses to the health sector, the productivity of current health spending should be examined critically (see Chapter 7 for more on efficiency). In particular, the participatory and comprehensive nature of the PRSP process may offer an opportunity for boosting public expenditure efficiency, as it allows the establishment of clear expenditure priorities, of measures for poverty reduction, and of sustainable economic growth.

## 4. ALTERNATIVE WAYS OF FINANCING HEALTH IN THE INFORMAL SECTOR

### 4.1 ORIGINS OF SOCIAL EXCLUSION IN HEALTH CARE FINANCING

One of the world's most urgent and vexing problems is how to finance and provide health care for the 1.3 billion poor in low- and middle-income countries. Many of the world's poor still do not have access to effective and affordable drugs, surgery, or other interventions because of weaknesses in the financing and delivery of health care (ILO 2000a; WHO, 2000; World Bank 1993; 1997). Although most of the world's population are excluded from adequate protection against the cost of illness and access to health care are poor, they are not a homogenous group. Their occupations range from peasants, peddlers, casual workers, taxi drivers, and employees of the informal sector to shop owners and self-employed professionals, such as physicians and lawyers. Most are poor and live in rural communities, although recently there has been a shift to urban areas in many countries.

Earlier chapters of this Report have emphasized the importance of general tax revenues and payroll tax-based contributions to the financing of health care at higher income levels. For years, many low- and middle-income countries have tried to leapfrog the developmental process needed to expand protection against risk to universal coverage through such public financing instruments (Preker, 1998). Few countries have succeeded in this "big bang" approach.

The expenditure gap that needs to be filled to secure adequate financing and access to health services for the poor are enormous, with estimates ranging from US\$ 25 to 50 billion (Working Group 5) to over US\$ 100 billion (Preker, Langenbrunner, and Suzuki, 2001). This chapter focuses on how community financing can provide a first step towards improving financial protection and access to essential health services for the poor (Preker, Langenbrunner, and Jakab, 2002; Dror, Preker, and Jakab, 2002; Preker et al., 2001a; 2001b; 2002).

Most community-financing schemes have evolved in a context of severe economic constraints, political instability, and lack of good public-sector governance. Lack of government capacity to raise taxes often means there are no significant financial resources from general revenue. Large

rural populations and low formal labour market participation rates preclude social health insurance as a viable option to finance health care for the poor. Out-of-pocket user charges often have an impoverishing effect on the poor, especially when faced with admission to hospital and serious illness. Community financing—notwithstanding all its shortcomings—is often the only viable option for providing some financial protection and access to basic health services for the poor.

Consequently, during recent years, community financing has received increasing attention as a potentially critical policy option for mobilizing extra resources for the residents of poor communities. This group makes up more than 70% of the population in low-income countries and 50% of the population in middle-income countries. Community financing is not a silver bullet that can fully solve health care financing problems in low- and middle-income countries. It is, however, one of several options available to finance better health care for the excluded segments of rural and low-income communities.

This chapter explores pro-poor policies that address known management, organizational, and institutional weaknesses in community-financing schemes, rather than policies that try—as has often been attempted unsuccessfully—to replace them with more direct government. The background studies that were undertaken for this chapter indicated several ways to improve the coverage, sustainability, financial protection, and access to basic health services provided through community financing (Preker et al., 2001). These improvements include:

- increased and well-targeted subsidies to pay for the premiums of low-income populations,
- the use of insurance and re-insurance mechanisms to enlarge the effective size of the risk pool,
- strengthening of local management capacity,
- the increase of prevention and case management techniques to avoid unnecessary expenditure variance,
- assistance in strengthening the management capacity of the schemes, and
- stronger links to the benefits of existing formal financing and provider networks.

#### 4.2 RICH-POOR DIFFERENCES IN FINANCIAL PROTECTION AGAINST COST OF ILLNESS

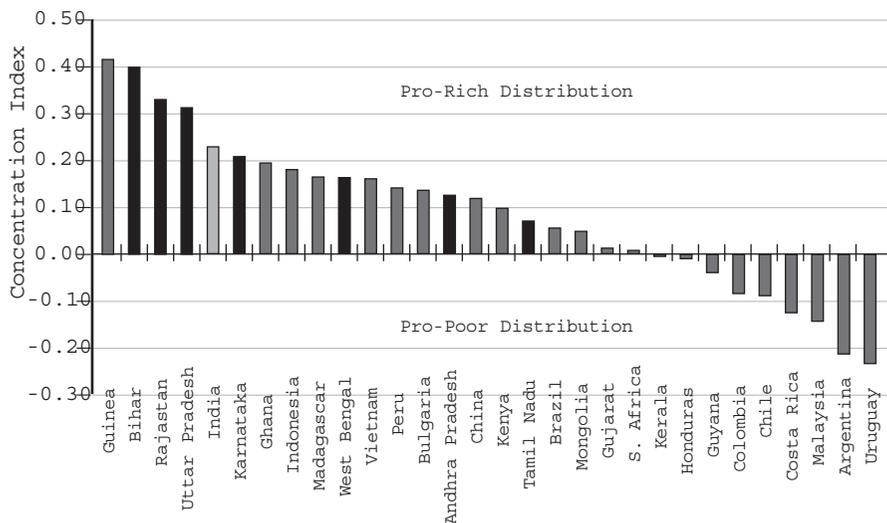
As described in earlier chapters, the flow of funds through the health care system and public/private mix is complex (Schieber and Maeda, 1997;

WHO, 2000). A combination of general taxation, social insurance, private health insurance, and limited out-of-pocket user charges has become the preferred health financing instrument for middle- and higher-income countries. Income is readily identifiable and taxes or premiums can be collected at source.

Different issues arise in the case of the public and private engagement in health care financing and service delivery. The need for collective arrangements and strong government action in health care financing is often confused with public production of services. The poor and other excluded populations often seek care from private providers because public services in rural and low-income urban areas are often scarce or plagued by understaffing, supply shortages, and low-quality care. Poor households and community-financing schemes therefore often turn to private providers for the care they need. Such engagement by private providers can still be pro-poor if there are mechanisms to exempt the poor or subsidize user fees (Preker, Harding, and Travis, 2000) and if purchasing arrangements include coverage for the poor (Preker et al., 2001).

Several factors make the policy options for financing health care at low-income levels different from those available at higher income levels. Low-income countries often have large rural and informal sector populations, which limits the taxation capacity of their governments. In middle- and upper-income countries, large segments of the population work in urban settings and the formal employment sectors. In this situation it is relatively easy to tax workers at source and design government or payroll tax-financed health care systems. In most low-income countries, the formal urban employment sector is small relative to populations in rural areas and informal employment. In these countries, rural populations and those working in the informal employment sectors often have no effective collective arrangements to pay for health care or to protect them from the cost of illness (Van Ginneken, 1999; Midgley and Tracey, 1996; World Bank, 1995; Guhan, 1994).

There is a related set of problems to be faced during the pooling of financial resources at low-income levels. Pooling requires some transfer of resources from rich to poor, healthy to sick, and gainfully employed to inactive. Without such pooling, people on low incomes are exposed to serious financial hardship when they fall ill. Where pooling does exist, it is often fragmented along income groups, preventing effective cross-subsidies between higher- and lower-income groups. Cross-subsidies may also be prevented when fragmentation is based on professional categories (for instance, separate pools for workers and farmers within the same region).

**Figure 4.1** THE PRO-RICH BIAS OF PUBLIC SUBSIDIES IN INDIA AND OTHER LOW-INCOME COUNTRIES

Source: Peters et al., 2001

Many households become destitute when faced with severe illness that leads to admission to hospital (Wagstaff et al., 2001).

Faced with overwhelming demand and very limited resources, many governments find it difficult to ration health care so that public expenditure is targeted for the poor. In many low-income countries, the rich often benefit more from public subsidies and public expenditure than the poor (Gwatkin, 2000). Public policies that, in theory, offer health care to the whole population may unwittingly shunt scarce health care resources away from the poor towards parts of the population that have more political influence over the health care system (Peters et al., 2001; see also Figure 4.1).

#### 4.3 ROLE OF COMMUNITIES

During recent years, many communities—discouraged by the inability of governments to reach rural and informal sector populations—have tried to bridge the large gap in social protection between people covered by formal schemes and those with no protection at all against the cost of illness (Arhin-Tenkorang, 1994; 1995; 2000; Atim, 1998; 1999; Bennett et al., 1998; Jakob and Krishnan, 2001; Musau, 1999; and Ziemek and Jutting, 2000).

There are three common features of community involvement in health care financing. The first is the predominant role of collective action in raising, pooling, allocating/purchasing, and/or supervising the management of health financing arrangements. Second is the nature of the beneficiaries of these schemes, who tend to be groups of people who have no other financial protection or access to collective financing arrangements to cover the cost of health care. The third is the voluntary nature of these schemes, and the tradition of self-help and social mobilization that is embraced by the poor in many low-income countries.

The growth in interest in community-based health financing arrangements rests on developments in three related areas (Dror, Preker, and Jakab, 2002; Preker et al., 2002):

- micro-finance (micro-savings, micro-credits, micro-insurance, financial intermediation);
- social capital (community, network, institutional, and societal links); and
- mainstream theories (welfare economics, public finance, health economics, and public health).

#### 4.3.1 *Links to existing micro-finance organizations*

The role of micro-finance in poverty alleviation for low-income groups has become a prominent theme in recent years (ADB, 2000; Brown and Churchill, 2000; Zeller and Sharma, 2000; Otero and Rhyne, 1994). Poor and rich households are equally exposed to a range of events beyond their immediate control that put them at financial risk. Such events range from predictable life-cycle events such as marriage, childbirth, education, and death, to less predictable events such as drought, fire, flood, and catastrophic illness.

The difference between poor and non-poor households is the availability of mechanisms to cope with the financial consequences of these events. Non-poor households take advantage of a wide range of risk-protection mechanisms that are available even in the lowest-income countries. This includes savings, access to credit, insurance, and other financial intermediation mechanisms.

Until recently, few risk-protection mechanisms were accessible to the poor. It was assumed that people living on less than a dollar a day were neither willing nor able to save or contribute to insurance against the risks they faced. In other words, the poor were thought to be “unbankable” and “uninsurable” (Zeller and Sharma, 2000). This led to the growth of informal risk-protection mechanisms through families, friends, and com-

munity networks. However, the past decade has seen a steady expansion of initiatives to provide the poor with savings, credit, and insurance services. Growing experience with these mechanisms suggests that the poor can be creditworthy, can save, and can buy insurance.

In particular, four micro-finance instruments have been developed to improve the financial stability and productivity of low-income households. They are:

- micro-credits that help improve immediate human, physical, and social capital (such as small short-term loans to help pay for training, a piece of farm equipment, or access to social networks);
- savings to be used to build up medium-term capital, such as education, the down payment on a piece of land, and dowry for marriage of a daughter into a good family;
- insurance to meet unpredictable expenses (such as theft, loss, and illness); and
- financial intermediation (payment systems to facilitate trade and investments).

The extension of techniques from other sectors to the health sector is now being seen in many micro-finance and development organizations in low-income countries, especially in the case of micro-insurance (Brown and Churchill, 2000; Dror and Jacquier, 2000; and ILO, 2000b; 2001).

#### *4.3.2 Links to community-level social capital*

Why have micro-finance organizations been able to reach low-income individuals and households while more formal national systems continue to fail to do so? Clues come from the social capital literature of the 1990s, which can be summed up as “it’s not what you know, but who you know that counts” (Platteau, 1994; Woolcock, 1998; Woolcock, 2000). When hard times strike, it is often family and friends that constitute the ultimate safety net for low-income groups. Evidence suggests that social capital has four dimensions. These have the potential for both positive and negative impacts on development. The four dimensions are:

- community links, such as extended families, local organizations, clubs, associations, and civic groups—people in small communities helping each other (Dordick, 1997);
- network links between similar communities (horizontal) and between different communities (vertical), such as ethnic groups, religious groups, class-based groups, gender-based groups, and so on (Granovetter, 1973);

- institutional links, such as communities' political, legal, and cultural institutions (North, 1990); and
- societal links between governments and their citizens through complementarity and embeddedness. These include public/private partnerships and the legal framework that protects the rights of association (such as chambers of commerce and business groups), and community participation in public organizations (community members on city councils and hospital boards, for example) (Evans 1992; 1995; 1996).

Members of low-income households are likely to have more trust in micro-health insurance programmes that are linked to the community credit, savings, and insurance organizations to which they already belong and feel they have some control over. They often regard national systems as impersonal and distant and feel they will never benefit from them. This view is reinforced when the national programmes ration care to focus on “global” public health priorities that—although they may have large externalities and benefits to society as a whole, such as vaccination—are often seen as ignoring people’s immediate, day-to-day health care needs.

But such social capital has both benefits and costs. The downside of social capital is seen when communities and networks become isolated or parochial or work at cross-purposes to the society’s collective interests (evidenced in ghettos, gangs, or cartels). Intercommunity ties or bridges are needed to overcome the tendency of communities and networks to pursue narrow sectarian interests (Narayan, 1999). Community-financing schemes are vulnerable to a number of these shortcomings:

- Community-financing schemes that share risk only among the poor will deprive their members of much needed cross-subsidies from higher-income groups.
- Community-financing schemes that remain isolated and small deprive their members of the benefits of spreading risks across a broader population.
- Community-financing schemes that are disconnected from the broader referral system and health networks deprive their members of the more comprehensive range of care available through the formal health care system.

#### 4.3.3 *Links to mainstream public economics*

Community-financing schemes—in addition to their links to micro-finance and social capital—benefit from their connections to the overall welfare of the society in which they exist, the system of public financing (no matter how weak it may be), and the broader social policy underpin-

ning the prevailing national health system. Schemes that build such connections at an early stage are better able to evolve. They can expand the number of members covered, the level of resources mobilized, the size of the risk pool, and the range of benefits they offer. Their members have more to gain through such connectivity than they would through isolation.

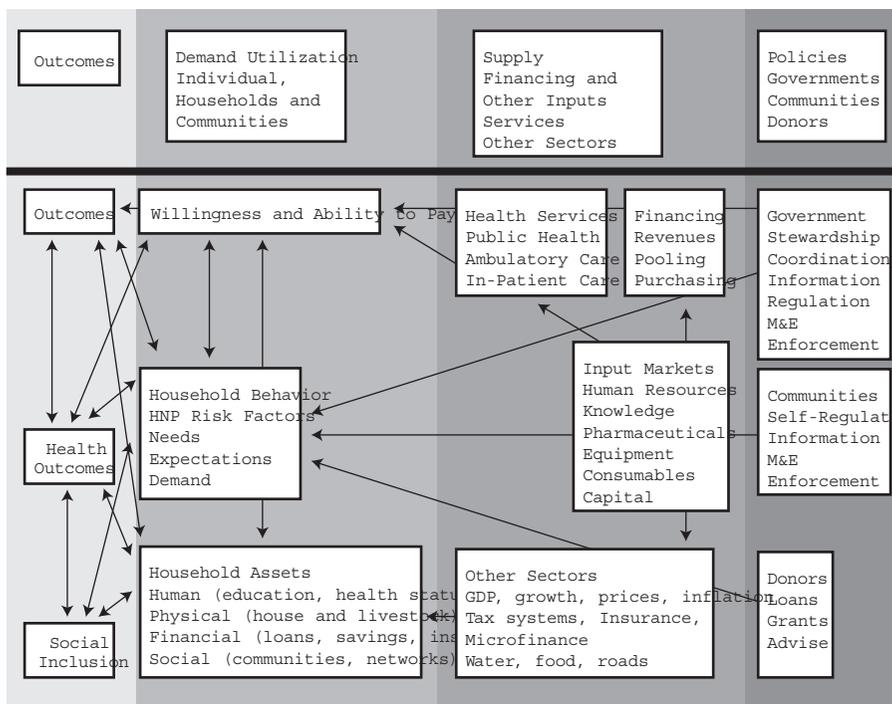
“Principal-agent” problems also explain why community-based initiatives should be more successful than purely market-based institutions at providing products that give financial protection. These problems can be overcome in two ways: (1) designing incentives that align the interest of the agent (insurer) with that of the principal (insured member), and (2) designing monitoring systems that allow the principal to observe the actions of the agent effectively. The proximity of community schemes (agents) to their insured members (principals) allows effective monitoring, which is much more difficult at the national level.

Proponents of links between community involvement and public finance argue their case on both philosophical and technical grounds. In most societies, care for the sick and disabled is considered an expression of humanitarian and philosophical aspirations. But one does not have to resort to moral principles or arguments about the welfare state to justify collective intervention in health. The past century is rich in examples of how private sector and market forces alone failed to secure efficiency objectives (Bator, 1958; Arrow, 1963; Atkinson and Stiglitz, 1980; Evans, 1984; Musgrave and Musgrave, 1984) and equity objectives (Barer et al., 1998; van Doorslaer et al., 1993).

#### 4.4 ASSESSMENT OF IMPACT, STRENGTHS, AND WEAKNESSES

Despite the recent growth in research on community-based health care financing, there is a lack of systematic evidence regarding the performance of these schemes in terms of their impact on broad outcomes such as health, protection against impoverishment, and combating social exclusion.

A comprehensive framework for assessing the impact, strengths, and weaknesses of various policy options on outcomes (health, financial protection, and patient participation) was developed by the World Bank’s PRSP framework (Claeson et al., 2001). The PRSP framework emphasizes outcome measures; demand and utilization patterns; supply in the health system and related sectors; and policy actions by governments, civil society, the private sector, and donors (see Figure 4.2). A more compact frame-

**Figure 4.2** PRSP FRAMEWORK TO ASSESS EFFECTS OF POLICIES ON OUTCOMES

Source: Adapted from Claeson, et al., 2001.

work that looks specifically at the performance of health systems has been developed by the *World health report 2000* (WHO 2000).

Picking up relevant elements from these different approaches, four levels of analysis were used to assess the impact, strengths, and weaknesses of community involvement in financial protection against the cost of illness and to improve health (see Preker et al., 2001, for a brief description of the methodology used by the various background studies). This included: (1) a survey of the existing literature of the impact, strengths, and weaknesses of different types of community involvement in health financing (Jakab and Krishnan, 2001);<sup>8</sup> (2) regional reviews of Asian and African experiences of community involvement in health care financing (Hsiao, 2001; Arhin-Tenkorang, 2001); (3) micro-level household data analysis of the specific impact of community-financing schemes on the overall welfare of the poor—financial protection and access to health services for the poor (Jakab et al., 2001); and (4) macro-level cross-country analysis of the impact of different health care financing on national health

systems performance indicators—health, financial fairness, and responsiveness (Carrin and Zeramdini, 2001).

#### 4.5 DISCUSSION

The term *community financing* has evolved into a generic expression that is used to cover a large variety of health financing arrangements (McPake et al., 1993; Dror and Jacquier, 1999; Hsiao, 2001). Different authors use the term in different ways. Micro-insurance, community health funds, mutual health organizations, rural health insurance, revolving drugs funds, and community involvement in user fee management have all been referred to as *community-based financing*. Our review of community involvement in securing financial protection against the cost of illness and access to priority health services covered all these kinds of arrangements.

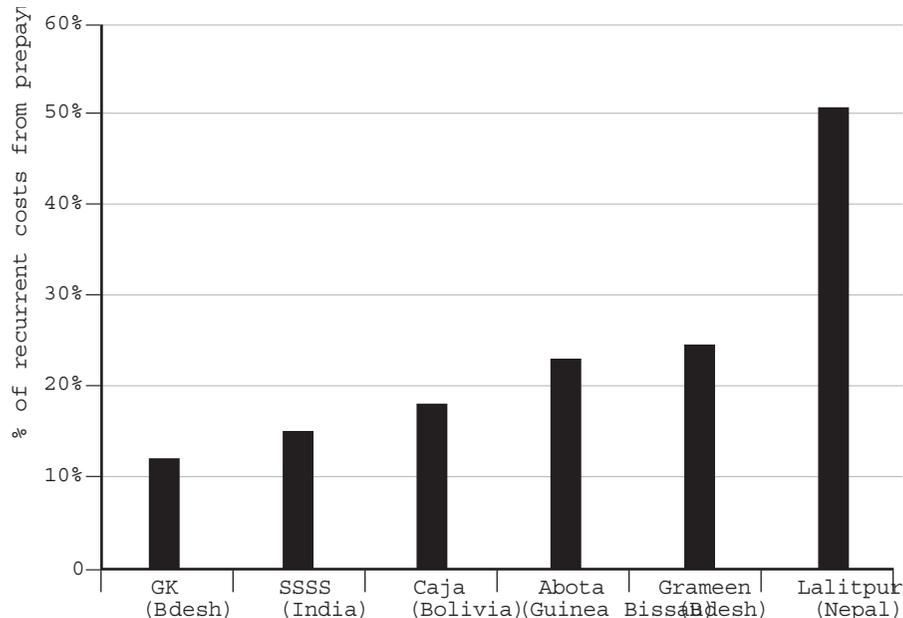
##### 4.5.1 *Discussion of survey of existing literature*

To assess the existing literature on community financing, Jakab and Krishnan (2001) grouped the schemes into four categories based on earlier classifications proposed by Bennett et al. (1998), Atim (1998), and Hsiao (2001). The first type of scheme is one in which resource mobilization relies mainly on out-of-pocket payments at the point of contact with providers. However, the community is actively involved in the design of these fees and in managing the collection, pooling, and allocation of the funds that are raised in this way (community cost-sharing). The second type of scheme is one in which the community collects payments in advance of treatment (prepayment) and then manages these resources to pay for providers (community prepayment or mutual health organization). The third is one in which the providers that serve a particular community collect the prepayments themselves (community provider-based health insurance). The fourth is one in which the community acts as “agents” in reaching rural and excluded populations on behalf of the formal government or social health insurance system (government or social insurance) via contracts or agreements.

##### 4.5.1.1 Assessment of impact

Jakab and Krishnan looked at three outcomes: the scheme’s effectiveness in raising resources and improving access to health care; its role in sharing risks across population groups; and the scheme’s impact on social exclusion.

##### ■ Resource mobilization

**Figure 4.3** RECURRENT COSTS FROM PREPAYMENT**Box 4.1** REVENUE MOBILIZATION

Based on data from Bennett et al. (1998), Figure 4.3 shows the cost recovery from prepayment of six schemes where the community collected payments. The range is from 12% to 51% of recurrent expenditure. This shows that for these schemes, the resources collected contribute significantly to but do not cover the full recurrent costs. Therefore, other sources of funding—such as out-of-pocket spending, government subsidies, and donor grants—are needed.

The literature provides good evidence that community-financing arrangements make a positive contribution to the financing of health care at low-income levels. These arrangements improve people's access to drugs, to primary care, and even to more advanced hospital care (Dave, 1991). This community involvement allows rural and low-income populations to raise more resources to pay for health care than they would have been able to otherwise (McPake, Hanson, and Mills, 1993; Diop, Yazbek, and Bitran, 1995; Soucat et al., 1997). But there are great variations in the amount of money that can be raised in this way, constrained largely by the low income of the contributing population (Hsiao, 2001; Jutting, 2000; Atim, 1998; Bennett et al., 1998; see also Figure 4.3 and Box 4.1). This is particularly true when most of the members of the community schemes are already below the poverty line. None of the studies reviewed reported the

share of aggregate national resources that were mobilized through community-financing arrangements.

■ Financial protection

Where household survey data have been analysed, researchers consistently found that community-based health financing has been effective in reaching more low-income populations who would otherwise have had no financial protection against the cost of illness (Litvack and Bodart, 1992). Improved financial protection is achieved through reducing scheme members' out-of-pocket spending while increasing their use of health care services (Jutting, 2000; Desmet, Chowdhury, and Islam, 1999; Supakankunti, 1997). At the same time, some of the research suggested that the poorest of the poor and socially excluded groups are often not included in community-based health financing initiatives (Jutting, 2000; Criel et al., 1999; Arhin-Tenkorang, 1994). Those studies that compared the level of financial protection of scheme members with that of non-members found that belonging to some form of prepayment scheme reduced the financial burden of seeking health care (Arhin-Tenkorang, 1994; Diop et al., 1995; DeRoeck et al., 1996). Two studies indicated that community financing does not eliminate the need for broader coverage for catastrophic health care expenditures (Pradhan and Prescott, 2000).

■ Combating social exclusion

Community-based health financing schemes appear to extend coverage to a large number of rural and low-income populations who would otherwise be excluded from collective arrangements to pay for health care. However, the poorest of the poor are often excluded, even from community-financing arrangements.

#### 4.5.1.2 Identification of determinants

The survey of the literature also looked at factors that would contribute to strengths (Box 4.2) and weaknesses (Box 4.3) of the schemes (Jakab et al., 2001) in the following four areas: technical design characteristics, management characteristics, organizational characteristics, and institutional characteristics.

#### 4.5.2 *Discussion of main findings from the Asia Regional Review*

The Asia review (Hsiao, 2001) ranked the community-financing schemes examined according to their potential impact on several intermediate outcome indicators (coverage, equity in financing, efficiency and cost containment in service delivery, access, improved quality; and degree of risk sharing). The results of this review are summarized in Table 4.1.

**Box 4.2** STRENGTHS OF COMMUNITY-FINANCING SCHEMES

The key advantage of community-based schemes is precisely their ability to fill the policy, management, organizational, and institutional void left by government failure to secure organized financing for the poor.

*Technical Design Characteristics*

## ■ Revenue Collection Mechanisms

Shifts away from point-of-service payment to increasing prepayment and risk-sharing.

Flat-rate premium facilitates revenue collection, reduces the scope for manipulation, and contributes to low transaction costs.

Contribution payment accommodates the income-generating patterns of households employed in agriculture and the informal sector (irregular, often noncash).

There is a modest degree of household level affiliation.

There is a pro-poor orientation even at low income levels through exemptions of premiums and subsidies, despite flat-rate contribution.

There is some buffering against external shocks though accumulation of reserves and links to formal financing schemes.

## ■ Arrangements for Pooling Revenues and Sharing Risks

There are some transfers from rich to poor, healthy to sick, and gainfully employed to inactive through some pooling of revenues and sharing of risk within community groups.

## ■ Purchasing and Resource Allocation

Most community schemes take a collective decision about who is covered through scheme based on affiliation and direct family kinship (for whom to buy).

Many community schemes define the benefit package to be covered in advance (what to buy, in what form, and what to exclude).

Some community schemes engage in collective negotiations about price and payment mechanisms.

*Management*

■ Most community schemes are established and managed by community leaders. Community involvement in management allows social controls over the behaviour of members and providers that mitigates moral hazard, adverse selection, and induced demand.

■ Many schemes seek external assistance in strengthening management capacity.

■ The management culture tends to be consensual (high degree of democratic participation).

■ Most schemes have good access to local utilization and behaviour patterns.

*Organizational Structure*

■ Most community schemes are distributed organizational configurations that reach deep into the rural and informal sectors.

**Box 4.2** *continued*

- Incentive regimes include: (a) extensive decision rights; (b) strong internal accountability arrangements to membership or parent community organization; (c) successful schemes are able to accumulate limited reserves but unsuccessful schemes often ask government for bail-outs; (d) mainly factor market exposure since few overlapping schemes compete with each other in the product market; and (e) some limited coverage of indigent populations through community or government subsidies.
- Vertical integration may lead to increased efficiency and quality services. Schemes that have a durable partnership arrangement or contractual arrangement with providers are able to negotiate preferential rates for their members. This in turn increases the attractiveness of the scheme to the population and contributes to sustainable membership levels.
- Better-organized schemes use horizontal referral networks and vertical links to formal sector.

*Institutional Environment*

- Stewardship function is almost always controlled by the local community rather than central government or a national health insurance system. This tends to make the schemes responsive to local contexts.
- Ownership and governance arrangements (management boards or committees) are almost always directly linked to parent community schemes, with fee-standing health insurance schemes being extremely rare.
- There is little competition in the product market.
- There is limited competition in factor markets and through consumer choice

**Box 4.3** WEAKNESSES OF COMMUNITY-FINANCING SCHEMES

The following weaknesses in community-financing schemes have been identified by several past authors (Carrin, Desmet, and Basaza, 2001; Bennett et al., 1998).

*Technical Design Characteristics*

## ■ Revenue Collection Mechanisms

Without subsidies, resource mobilization is limited when everyone in the pool is poor.

Many of the poorest do not join since they cannot afford premiums.

Pro-poor orientation is undermined by the regressive flat rate contributions and when a lack of subsidies or premium exemption creates a financial barrier for the poor.

Community-based voluntary prepayment schemes are also prone to adverse selection.

Few schemes have re-insurance or other mechanisms to buffer against large external shocks.

**Box 4.3** *continued*

## ■ Arrangements for Pooling Revenues and Sharing Risks

The scope for transfers within very small pools is limited (often less than 1000 members per scheme).

## ■ Purchasing and Resource Allocation

Without subsidies, the poorest are often left out (for whom to buy).

The benefit package is often very restricted (what to buy, in what form, and what to exclude).

Providers can often exert monopoly power during price and payment negotiations.

## Management

## ■ Community leaders are as vulnerable to adverse incentives and corruption as national bureaucrats.

## ■ Even with external assistance, absorptive capacity in management training is limited.

## ■ Extensive community consultation is time consuming and can lead to conflicting advice.

## ■ Most schemes do not use modern information management systems.

*Organizational Structure*

## ■ Even very distributed organizational configurations may have difficulty in reaching deep into the rural and informal sectors.

## ■ There are often conflicting incentives, especially among high level of decision rights, soft budget constraints at time of deficits (bail-outs by governments and external sources of funding such as NGOs), limited competitive pressures in the product markets, and lack of financing to cover the poorest population groups.

## ■ The less organized schemes are often cut off from formal sector networks.

*Institutional Environment*

## ■ Government stewardship and oversight function is often very weak, which leads to a poor regulatory environment and lack of remedies in cases of fraud and abuse.

## ■ Ownership and governance arrangements are often driven by non-health and financial protection objectives.

## ■ Choice in strategic purchasing is limited by the small number of providers in rural areas.

## ■ True consumer choice is often limited by lack of a full insurance and product market, leading to (a) adverse selection (signing on only people who are better-off, of working age, and healthy); (b) moral hazard (members making unnecessary claims because they have insurance cover); (c) free-rider effect (households waiting until they think they will be sick before joining); and (d) information asymmetry (such as concealing pre-existing conditions).

**Table 4.1** POTENTIAL VALUE ADDED BY TYPES OF COMMUNITY-FINANCING SCHEMES

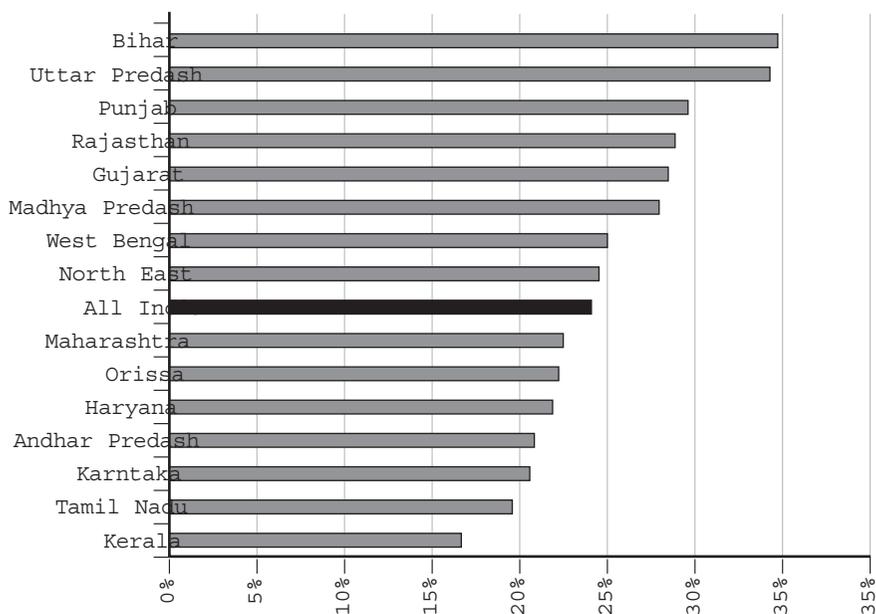
Type of Community-Financing Scheme	Who controls use of fund	Population to be covered & raise funds	Equity in financing	Increase efficiency and reduce cost	Improve access	Improve quality	Greater risk pooling
Prepay user fees	Government Individual households	Low Modest	Low Low	None None	Low Modest	Low Low	Low Low
Cooperative healthcare	Local community and special-purpose NGO	High	Low	High	High	High	Modest unless govt sub
Community-based third-party insurance	Community	Cover higher income families	Low	Low Low	High for those insured	Low	
Provider-sponsored insurance	Hospitals	Cover higher income families	Low	Low	High for insured	Low	High
Provider or consumer cooperative	Cooperatives	Cover member	Low	High	High	High	Medium

Source: Hsiao, 2001.

The Asia review emphasized that rural households and urban poor households are often willing to prepay a portion of their health services. The resources that can be raised in this manner depend on both economic and social factors. Since the membership of many community-financing schemes consists of poor households, their ability to raise significant resources to pay for health care is limited by overall income level of the community in question, the exposure to out-of-pocket payment when not enrolled, the availability and size of subsidies, and the satisfaction with the services provided.

The poor and near poor are more motivated to prepay if their contributions are supplemented by government or donor subsidies. This subsidy has to be a large share of the total payment where the poorest households are concerned. In many instances, government and NGOs involved were instrumental in catalysing the start-up, management, and sustainability of the community-financing schemes in question.

The social factors that influence membership rates include a sense of kinship, mutual community concern, and trust and confidence in the man-

**Figure 4.4** HOW ADMISSION TO HOSPITAL IMPOVERISHES IN SELECTED INDIAN STATES

Source: Peters et al., 2001.

agement of the scheme. Even under the most favourable circumstances, however, total membership among the poorest of the poor is quite low.

A major factor that adds value to community-financing schemes is their impact on access to services and the manner in which those services are managed. Well-performing funds appear to influence access to quality services, efficiency of service provision, and containment of costs.

Finally, the Asia review emphasized that members appear to prefer coverage for both primary care and more expensive hospital care. Since many schemes do not mobilize sufficient resources to pay for both, many communities opt for primary care coverage that they will use more regularly for their basic health care needs rather than insurance coverage for rarer and more expensive events that may happen only once or twice in a lifetime and whose concept is often poorly understood. This creates a tension or tradeoff between individual needs/demands for basic care and household/community needs for financial protection (see Figure 4.4).

### 4.5.3 *Discussion of main findings from the Africa Regional Review*

The review of selected Africa experiences (Arhin-Tenkorang, 2001) emphasized that a common feature of many of the reforms that have been introduced during the past couple of decades in this region have consisted of co-payments to influence utilization patterns and direct out-of-pocket user charges to mobilize much needed additional resources (Vogel, 1990). Most of the population does not benefit from formal insurance coverage, and government expenditure often fails to meet the basic health needs of the poor, let alone the whole population (Abel-Smith and Rawal, 1994). Any out-of-pocket user charges add significantly to the financial hardship of poor households, which are often fully exposed to the financial risks associated with illness. This is especially true during recent years due to the rising incidence and prevalence of HIV/AIDS, TB, and other communicable diseases.

A central premise of the Africa review is that individuals in the informal sector of poor countries are unable to access appropriate health care—particularly curative care—when they need it. This is partially due to the lack of adequate insurance coverage (Arhin-Tenkorang, 2001). Several African studies demonstrated that, in the absence of protection against risk, poor households often deferred visits to formal health facilities until their illness became quite severe, or used ineffective self-medication that sometimes even damaged their health. This then leads to both more severe health and financial consequences than if they had sought care earlier. Although preventive measures may have long-term payoffs in improving the overall welfare and productivity of the population, the income shock associated with seeking access to curative and palliative care has become such a great financial burden for the poor that some form of insurance coverage needs to be part of serious poverty alleviation strategies.

The performance of a scheme, in terms of risk protection and resource mobilization, is influenced by the interaction between the way the scheme is designed and institutional factors. Important design features include the methodology and the nature and quality of the data used to determine contribution levels, the benefit package, and the level of subsidies. Appropriate specifications require data, which are often not collected or available, on willingness-to-pay (WTP) and ability-to-pay of the target population; data on projected costs of the benefits; and ways of working that facilitate interaction between individuals acting in an informal environment and a range of formal organizations. Arhin-Tenkorang concludes that, in an informal environment, activities undertaken by com-

munity-financing schemes must be based on simple and direct tasks that have a low transaction cost.

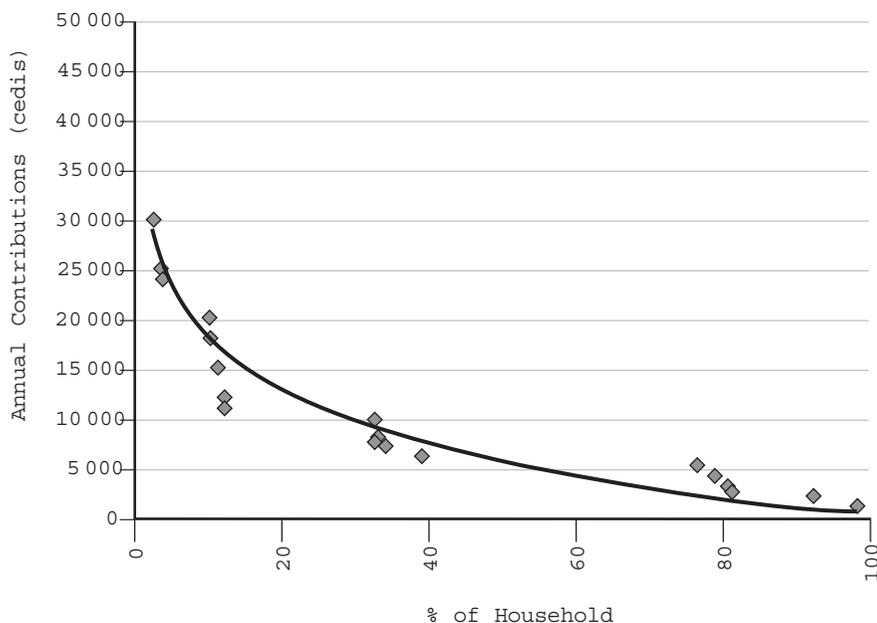
The key institutional determinants of good performance include the degree of congruence between the operating rules of the scheme and the normal behaviour patterns of the participating population. They also include the degree of past experience of participating health care providers with third-party payments and contractual arrangements. Arhin-Tenkorang argues that these institutional factors have a significant influence on the nature and extent of community participation in any given scheme, as well as in the quality of its management and in monitoring its performance. The review did not examine other institutional factors such as government regulations and laws governing insurance and health care provision.

The second part of Arhin-Tenkorang's review (2001) presents the design features that are needed to achieve a "high population" in the informal sector in the African context. It also assesses schemes' performances with respect to risk protection and resource mobilization. The key factors influencing enrolment appear to include a matching of the premium level to a willingness and ability to pay, availability of government subsidies for the poor who cannot afford the basic premium, and ready access to basic care for common health problems through facilities such as outpatient departments/and emergency care—both geographic proximity and availability of a range of basic services appear to have a significant impact on enrolment. As in the case of the Asia review, the Africa review indicates that the poorest of the poor are neither willing nor able to pay for community financing unless their premiums are subsidized by some external funding. Figure 4.5 indicates how enrolment rates increase with ability to pay in terms of income levels.

#### *4.5.4 Discussion of main findings from micro-level household survey analysis*

The aim of the micro-level household survey analysis (Jakab et al., 2001) was to shed light on two questions: what characteristics affect the decision of households to join community-based prepayment schemes, and do community health financing schemes provide financial protection against the cost of illness for their members?

Eleven household budget surveys, four Living Standard Measurement Surveys (LSMS), and nine Demographic and Health Surveys (DHS) were screened for community financing data. Most of these surveys did not allow households with access to community-based health financing to be

**Figure 4.5** ENROLMENT RATES ACCORDING TO ABILITY TO PAY

identified. Eleven smaller scale nonstandardized surveys that matched the requirements for the core list of variables were identified—five of these were available for further analysis and are included in this report.

#### 4.5.4.1 Determinants of social inclusion in community financing

The results from the micro-level household assessment were varied. Table 4.2 presents the determinants that were found statistically significant in the five household surveys (Gumber 2001; Jütting 2001; Ranson 2001; Schneider and Diop 2001; and Supakankunti 2001).

The key findings from this part of the study include the following (Jakab et al., 2001):

- Income and other socioeconomic determinants: in Senegal and Thailand, household income was a significant determinant of being a member of a prepayment scheme but in Rwanda and India income was not significant.
- Other individual and household characteristics: health status was included in the analysis of all except the Senegal survey. In all five surveys, the analysis confirmed the presence of adverse selection that characterizes voluntary prepayment schemes. Patients who have been

**Table 4.2** DETERMINANTS OF JOINING COMMUNITY-FINANCING SCHEMES

	Rwanda	Senegal	India (1)	India (2)	Thailand
Model	<i>Logit</i>	<i>Probit</i>	<i>Logit</i>	<i>Logit</i>	<i>Logit</i>
Dependent variable	<i>Proportion of population enrolled in 1 of 66 schemes</i>	<i>Proportion of population enrolled in 1 of 4 schemes</i>	<i>Proportion of population enrolled in SEWA-insurance</i>	<i>Proportion of population enrolled in SEWA-insurance</i>	<i>Proportion of population purchased new health card, continued, dropped out, never purchased</i>
<i>Independent variables: individual &amp; household characteristics</i>					
Income/assets	No	Yes	No	No	Yes
Age	No	No	Yes	Yes	No
Education	Yes	No	No	No	Yes
Gender	No	No	—	—	No
Health status	No	—	Yes	Yes	Yes
Household size	Yes	No	Yes	No	—
Marital status			Yes	No	No
Religion	—	Yes	—	No	—
Distance of household from scheme provider	Yes	—	—	—	—
<i>Independent variables: community characteristics</i>					
Community marker for unobservable ch.	Yes	Yes	—	—	—
Solidarity	N/A	Yes	N/A	N/A	N/A

*Yes: variable is significant at least at the 10% level.*

*No: variable is not significant.*

*(—): not included in the particular model.*

*N/A: not available.*

ill recently or have chronic illnesses are more likely to purchase a prepayment plan. The distance of the household from the provider of the scheme was included in the Rwanda analysis. Households less than 30 minutes from the health facility of the scheme were four times as likely to belong to the prepayment scheme than households living further away.

- Community characteristics: dummy variables for community characteristics were significant predictors of the probability of enrolling in the prepayment scheme (Senegal and Rwanda).

#### 4.5.4.2 Determinants of financial protection in community financing

The results in terms of the determinants of financial protection through community financing are varied. Table 4.3 presents the determinants that were found statistically significant in four of the household surveys. The household survey conducted in Thailand did not allow analysis of the determinants of out-of-pocket payments and so was excluded from the analysis. The key findings from this part of the study include the following:

- Insurance effect: in three of the four household surveys, membership of a community-financing scheme was a significant determinant of the probability of using health care and in reducing the level of out-of-pocket payments. This confirms our original hypothesis that even small-scale prepayment and risk pooling reduce financial barriers to health care (Rwanda, Senegal, and India).
- Socioeconomic determinants: the analysis indicated that even with insurance, low income remains a significant constraint to health care usage and ability to pay out-of-pocket payments (Rwanda, Senegal, and India).
- Other determinants: distance from scheme provider was a significant determinant of the likelihood of using health care (Rwanda and Senegal).

#### 4.5.5 *Discussion of main findings from macro-level cross-country analysis*

Most routine statistical sources at a national level do not include data on the share of overall financing that is channelled through either community-based or private health insurance schemes (Carrin et al., 2001). Therefore, the macro-level analysis focused on the degree of collective risk sharing provided at low-income levels through different combinations of general tax revenues and social insurance. The objective was to examine the degree to which risk sharing has a beneficial impact on the five indicators of health systems performance described in the *World health report 2000*.

For the dependent variables of the macro-level country analysis, the study used the standard indicators proposed by WHO for health systems performance (WHO, 2000a; 2000b; 2000c). These are the disability-adjusted life expectancy (DALE), the index of level of responsiveness (IR), the index of fairness of financial contribution (IFFC), the index of distribution of responsiveness (IRD), and the index of equality of child survival

**Table 4.3** DETERMINANTS OF UTILIZATION AND OUT-OF-POCKET EXPENDITURE PATTERNS

	Rwanda utilization	OOPs	Senegal utilization	OOPs	India (1) utilization	OOPs	India (2) utilization	OOPs
Model	Logit	Log-linear conditional on (use > 0)	Logit	Log-linear conditional on (use > 0)	Logit	Log-linear conditional on (use > 0)	Logit	Log-linear conditional on (use > 0)
Dependent variable	Proportion of sample w/ at least one visit to professional health care provider	Total illness-related out-of-pocket payment per episode of illness for the full episode	Proportion of sample w/ at least one admission to hospital	Out-of-pocket spending for admission to hospital	Proportion of sample reporting any health care use	Total annual direct and indirect cost of health care use	Proportion of sample w/ at least one hospitalization	Total annual out-of-pocket payment for use of hospital care
<i>Independent variables: Insurance effect</i>								
Scheme membership	Yes	Yes	Yes	Yes	Yes	No	No	Yes
<i>Independent variables: Individual &amp; household characteristics</i>								
Income/assets	Yes	Only for poorest quartile	Only for richest tertile	Yes	No	Yes	Only for richest quintile	Only for richest quintile
Age	Yes	No	No	Yes	No	—	Only for oldest group	Only for oldest group
Education	No	No	No	No	No	—	No	Yes
Gender	No	Yes	Yes	No	No	—	—	—
Health status/severity of illness	Yes	No	—	Yes	Only for very severe	Yes	Yes	Yes
Household size	No	No	—	—	No	Only small household size	No	Yes
Marital status	—	—	—	—	No	—	No	No
Religion	—	—	—	—	—	—	Yes	Yes
Distance of household from scheme provider	Yes	No	Yes	No	—	—	—	—

Note: other control variables were included in some of the studies, but as they are not discussed in the paper, we did not include them in this table. Yes: variable is significant at least at the 10% level. No: variable is not significant. (—): not included in the particular model.

(IECS). Only the observed data for these indicators were included in the analysis.

For the independent variables of the macro-level analysis, countries were divided into three groups, based on the degree to which they provided risk-sharing arrangements. The authors assigned countries to the advanced risk-sharing category if they have either a social health insurance scheme or a health financing scheme based on general taxation, and when these two schemes are associated with the principle of universal coverage. Second, there are countries with no explicit reference to overall coverage of the population. They usually have mixed health financing systems, with part of the population partially covered via general taxation, and specific population groups covered by health insurance schemes. These countries are associated with medium risk sharing. Finally, there are countries with general taxation systems but that do not cover the population completely—these are associated with low risk sharing. This classification allowed the authors to define two main organizational dummy variables: DARS = 1 when a country belongs to the set of advanced risk-sharing systems and 0 otherwise; DMRS = 1 when a country belongs to the set of medium risk-sharing systems and 0 otherwise.

A first conclusion from this study was that the degree of advanced risk sharing, as measured by the dummy variable DARS, is significant in the equations for four of the five goal measurements. No impact could be found in the case of the index of fair financing, but this may be due to the small sample size. In addition, in at least two of these measurements (level of responsiveness, distribution of health), the variable DMRS has also been shown to have a statistically significant impact.

Second, when enlarging the set of explanatory variables in the models for the distributional measures with the GINI index, DARS remains statistically significant in the equations for IRD and IECS. In addition, DMRS has a statistically significant impact in the equations for IRD. An additional interpretation emerges from the results, namely that risk sharing corrects for, or may even outweigh, the negative effect of overall income inequality on the IFFC and IRD. Third, using interaction terms with share of public health expenditure out of total health expenditure (PHE%) leads to plausible results for DALE only. The level of PHE% reinforces the average positive effect of advanced risk sharing.

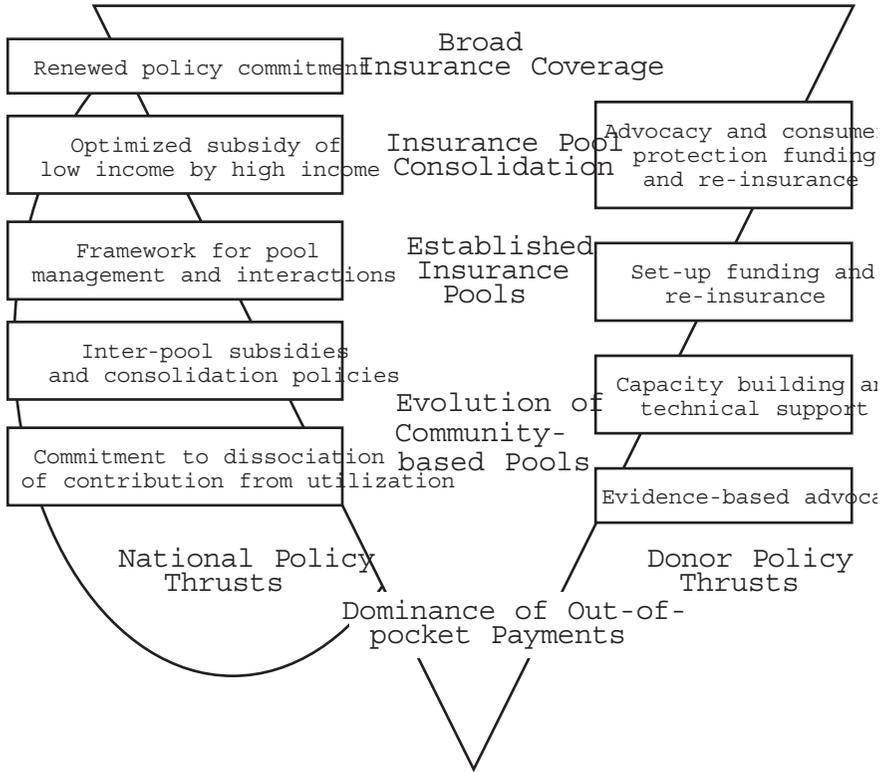
Since publication of the *World health report 2000*, WHO has developed updated estimates for the level health expenditure constant and share of PHE%. The use of the updated PHE% did not significantly change the estimates for the equations with the interaction terms. Estimates of the

IFFC were also obtained for an additional 30 countries. Re-estimation of the equations using an enlarged sample of 50 leads to two interesting results: (1) the advanced risk-sharing dummy variable DARS exerts a statistically significant effect on the fair financing index; (2) the GINI index has a statistically significant impact on IFFC, but is counterbalanced by a health financing system characterized by advanced risk sharing. These preliminary results prove to be more in line with those obtained for the other distributional measures.

#### 4.6 CONCLUSIONS AND RECOMMENDATIONS

As described at the start of this chapter, most community-financing schemes have evolved in settings of severe economic constraint, political instability, and lack of good governance. Usually government taxation capacity is weak, formal mechanisms of social protection for vulnerable populations absent, and government oversight of the informal health sector lacking. In such contexts, community involvement provides a first step towards improved financial protection against the cost of illness and improved access to priority health services (see Figure 4.6, p. 100). Five key policies available to governments to improve the effectiveness and sustainability of community involvement in the financing of health care for the rural and informal sector poor are (1) increased and well-targeted subsidies to pay for the premiums of low-income populations, (2) the use of insurance to protect against expenditure fluctuations and the use of re-insurance to enlarge the effective size of small risk pools, (3) the use of effective prevention and case management techniques to limit expenditure fluctuations, (4) technical support to strengthen the management capacity of local schemes, and (5) establishment and strengthening of links with the formal financing and provider networks.

**Figure 4.6** STAGES OF FINANCIAL PROTECTION



*Adapted from Arhin-Tenkorang, 2001.*

## 5. FINANCE AND PROVISION OF HEALTH SERVICES IN MIDDLE-INCOME COUNTRIES

### 5.1 INTRODUCTION

An important link between health and economic development is the way the characteristics of a particular health care system, especially health financing policies, affect a country's economic performance. This results in part because health care is one of the largest sectors of the world economy, accounting for 9.9% of total global product in 1998. As Figure 5.1 illustrates, health finance policies can have direct economic consequences in any of four ways: they capture resources for health care systems from the rest of the economy, they affect the extent to which these systems provide welfare gains from risk pooling, they create incentives for the labour market and for consumer and provider behaviour, and they influence the extent to which health spending generates or perpetuates poverty. This chapter reviews these direct consequences from the perspective of middle-income countries. In addition to direct consequences, of course, health finance policies can produce important indirect economic effects through their impact on population health and consequent changes in economic productivity. The Report of CMH Working Group 1 reviews evidence on the nature and magnitude of these effects.

Middle-income countries face health finance and provision problems that are often very different from those of low-income countries. Besides focusing on enhancing resource mobilization for critical priorities, middle-income countries must address multiple challenges: efficient resource mobilization, broad and efficient pooling of financial risks, and control of spending on unproductive administration or low-value services. In some countries, containing such costs could entail stabilizing or reducing the percentage of GDP spent on health. The high-income countries of the OECD have been addressing these problems for many decades, and the range of their experiences offers insights into the likely effects of different policies. The following discussion concentrates on some lessons middle-income countries can learn from the OECD experience. The conclusions are also relevant for the formal sectors of urban areas in a low-income country, since these frequently resemble their counterparts in middle-

**Figure 5.1** DIRECT ECONOMIC IMPACT OF THE HEALTH SYSTEM

Health finance policy	Direct economic consequences
<b>Revenue generation options</b>	A. Total resources withdrawn from the household (or the economy) for:
User fees and private voluntary insurance	■ valuable health services
Universal mandatory finance (through payroll or general revenue taxation)	■ inappropriate health services
<b>Provider compensation options</b>	■ administrative costs
Fee-for-service versus salary versus capitation	B1. Welfare gains from risk pooling
<b>Supply-side measures to contain costs</b> (for example, hard budget constraints)	B2. Protection from poverty induced by medical expenses or ill-health
<b>Demand-side instruments for cost control and revenue generation</b> (for example, co-payments)	C. Altered economic incentives
	■ incentive implications of alternative taxation instruments
	■ moral hazard; supplier-induced demand
	■ reduced labour mobility (for example, from “job lock” associated with employer-based private insurance)
	■ reduced incentives for employment resulting (perhaps) from payroll taxes or means-tested subsidies for health insurance
	■ impact of user fees/charges on welfare of poor

Source: Adapted from Ruger, Jamison, and Bloom (2001, p. 636).

Note: Indirect economic consequences are mediated through the impact of health systems and policies on health outcomes.

income countries much more than impoverished parts of their own country.

## 5.2 RESOURCE MOBILIZATION AND PROVIDER COMPENSATION

### 5.2.1 *Public finance of clinical services*

There is seemingly a fundamental puzzle about health finance in the OECD: while the OECD countries have the world’s most market-oriented economies, their governments are much more heavily involved in health finance than governments in low- and middle-income and transition countries. Even the United States spends close to 7% of its GNP on health through the public sector—a larger percentage of GNP than is spent in the United Kingdom, even though private expenditures are vastly higher in the United States than in the United Kingdom.

### 5.2.2 Mobilization

Why do all high-income market economies (except the United States) choose public-sector financing (either public spending or publicly mandated social insurance) for most personal clinical services for their entire population? (Beyond public finance of a substantial health benefit package, all OECD countries allow a second, more expensive but smaller tier to be privately financed.) The public goods and externalities arguments for public finance of some clinical services are obvious and noncontroversial (e.g. treatment of tuberculosis generates benefits that go beyond the individual by reducing transmission to others). At issue here is the importance of market failures associated with the information and agency problems in private insurance and delivery of those clinical services *without* externalities, which account for the bulk of health expenditure. There is no easy answer concerning how best to deal with market failures of this type. The empirical evidence suggests that a strong government presence in finance is necessary to achieve universal access to health care. It seems that this presence also makes it easier to impose hard budget constraints that generate signals for efficient use of resources, or at least potentially do. Among high-income OECD countries, only the United States fails to finance or mandate finance of universal access. Tens of millions of individuals in the United States remain vulnerable to the risk of catastrophic financial loss associated with medical expenses, even though health spending in that country has escalated to a level 5% of GNP higher than in any other OECD country.

The OECD experience suggests that the tendency of many governments of middle-income countries to try to shift the financing of clinical health services to the private sector runs the risk of escalating costs. In addition, such a shift virtually ensures that a substantial proportion of the population will lack the money to access services when they need them. To oversimplify, middle-income governments face a choice between a 2% solution and a 6% solution. Public expenditures of about 2% of a middle-income country's GNP would cover population-based health services, clinical services with externalities, and clinical services for the poor—problems that form the domain of public health. Spending 6% of GNP would go beyond that to provide *universal* finance for clinical services, in a way that deals with information-related market failure and agency problems. The OECD experience suggests that the 6% solution yields greater economic efficiency as well as meeting the health needs of the poor.

Public finance of services for all does not imply that all services can be provided. Indeed, given their resource constraints, countries face hard

choices about what to include (and exclude) in the universal benefits package. These choices are particularly difficult for tertiary services, which are sometimes life-saving and medically justified, but so costly that to provide them means that resources must be taken away from lower-cost services that would benefit many more people. Shortage of money is not the only or even the most important limitation, either. Governmental weakness (or lack of trust in government) will in many cases hinder the capacity of governments to undertake a central role in finance or leadership. This has been a particular problem in some (but not all) of the transition economies in Europe (Preker, Jakab, and Schneider, 2002). Partly because private-sector weakness (or unscrupulousness) often correlates with weakness in the public sector and therefore cannot easily be displaced by public funding, it must be recognized that private finance will play a central role in many countries for quite some time.

Contrary to expectations, a consistent consequence of introducing universal coverage in OECD countries has been a levelling off in the growth rate of health spending as a percentage of GDP (Preker, 1998). Preker suggests the following reasons for this trend:

- greater policy control over expenditure;
- elimination of the inflationary pressures created by private health insurance; and
- in some countries, close to universal coverage had been achieved before its introduction by legislation.

Although in a competitive market environment there would be no particular virtue in restricting total expenditure growth, the market failures in the health sector are ones that for the most part lead to expenditures higher than would occur if consumers had to pay full cost for services. Hence the benefits of cost containment.

There is also evidence of a favourable effect on both wages and employment levels from the introduction of universal mandatory health coverage. (See Box 5.1 for the particularly well-documented evidence from Canada.)

Figure 5.2 illustrates the main finance options for health facing middle-income countries. Two distinct issues involved in financing are considered here: the way that revenue is raised and the way that providers are remunerated. These can in principle be chosen separately, except when patients pay out of pocket directly to providers: otherwise, a particular source of revenue does not imply any particular way of compensating the providers of care. The discussion here draws on OECD experience and

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**Box 5.1** MACROECONOMIC AND HEALTH BENEFITS OF UNIVERSAL MANDATORY HEALTH INSURANCE: THE CANADIAN EXPERIENCE

In the mid-1960s, most of Canada's population had private health insurance protection provided through employers, although a substantial minority remained uninsured. This situation resembles that in the United States today. National Health Insurance (NHI) was phased in to each of Canada's provinces at different times between 1962 and 1971, thus creating a large-scale natural experiment. Recent analytical work comparing Canadian provinces with NHI to those with private insurance has allowed both the health and economic effects of the change to be identified and measured.

A substantial change in health care use occurred rapidly after the introduction of NHI, but little evidence was found of increased total consumption of health care: what happened was a redistribution of health resources towards more preventive care and better access for the poor. Implementation of NHI clearly improved infant health outcomes: infant mortality declined by 4% and the incidence of low birth weight declined by 1.3% for the total population (and by 8.9% for single parents).

NHI was financed for the most part by increased payroll taxes, which would be thought likely by many economists to reduce both employment levels and wages. However, Canadian provinces implementing NHI experienced an increase of over 2% in employment and of 3 to 4% in wages, with no change in the average number of hours worked. The authors of the study suggest that workforce productivity improved with NHI either because of greater job mobility or better health (and lower absenteeism), or both.

These results, though based on one country only, provide important empirical insights into contradictory predictions from economic theory. Standard theories of labour market behaviour predict that publicly financed health insurance, by increasing taxation, will drive down total employment and wage levels. On the other hand, theoretical analyses of markets for health services and for health insurance conclude that free markets in these areas may lead to great inefficiency. The data from Canada provide clear evidence suggesting that NHI can create a "win-win" situation, where both health and the economic conditions of the labour force improve. For many low- and middle-income countries considering alternative policy directions, this provides evidence that efficiency considerations join equity ones in favouring mandatory universal coverage.

*Sources: Gruber and Hanratty (1995); Hanratty (1996).*

*Note: This box has been adapted from WHO (1999, p. 40).*

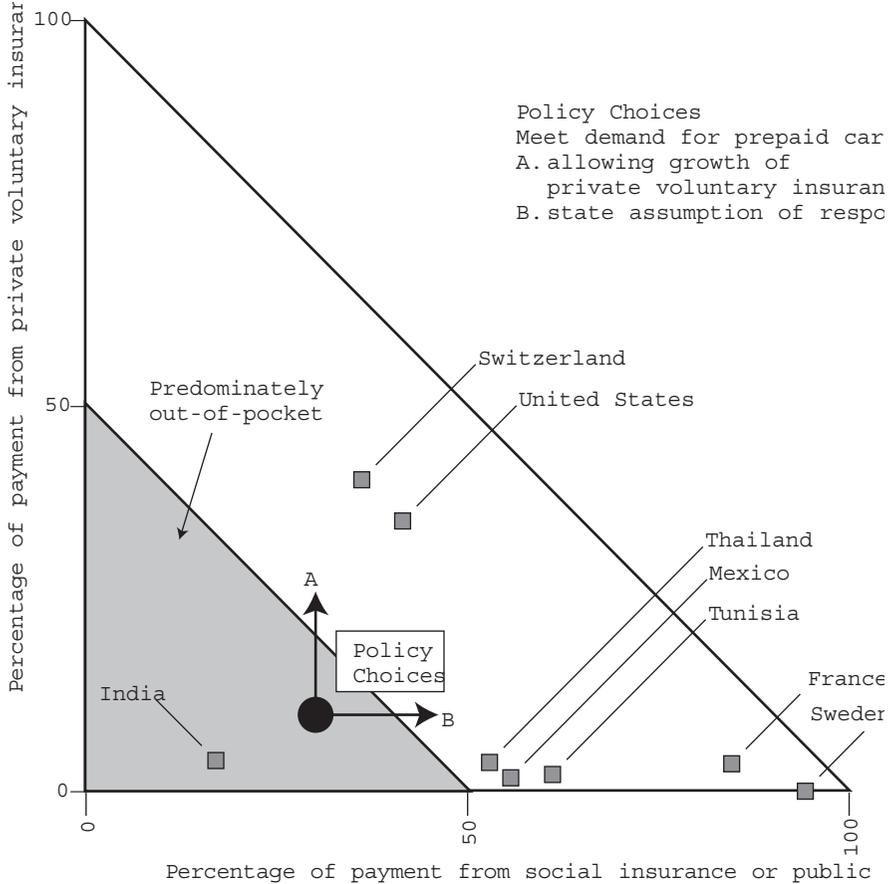
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emphasizes one form of funding (social insurance) and one form of remuneration (fee-for-service), and how they can interact.

### 5.2.3 *User fees and provider compensation*

Middle-income countries vary substantially in the extent to which health care providers are financed on a fee-for-service basis—that is, by direct payment for specific services. It is worth being clear that, although

**Figure 5.2** ALTERNATIVES FOR MOVING TOWARDS PREPAID HEALTH SERVICES



Source: Jamison, 2002 (in press).

this is traditionally the chief way to pay for private care, government providers can also be financed (legally or illegally) on a fee-for-service basis—as is increasingly the case in China. Likewise, private providing organizations are often compensated through other means such as capitation, and individual physicians in the private sector are sometimes on salary or a combination of salary plus capitation. Out-of-pocket payments to a public-sector provider are usually called *user fees*, but they are no different in principle from fee-for-service compensation of private providers. The most common difference between these methods of payment is that public user fees cover less, usually much less, than the full cost of services. They are nonetheless often described as *cost recovery* because they make patients contribute part of the cost of the service they receive.

Why are health systems so often financed by fee-for-service? Two plausible reasons have been advanced. One is to increase provider responsiveness by making their income depend on their service. In extreme cases, it may be that only fees for providing drugs will create incentives for providers to ensure their supply; or only by having the patients themselves bring surgical supplies and antibiotics to the hospital—a sort of in-kind user fee, rather than cash—will surgery be possible. The other argument is that fees restrain frivolous or unnecessary demand. For those who accept the market paradigm's application to health, fees can bring service usage down from the level where the marginal value of the service is zero to the level where it is equal to marginal cost, which in a competitive market environment is a criterion of efficiency.

What is the OECD experience with user fees? Basically, it is that both providers and patients respond strongly to the incentive environment. Indeed, there is a problem with providers being too responsive: much medically useless (or low value) surgery, diagnostic testing, and drug use is highly profitable to the provider and it is often the provider who must, as agent for the patient, decide what to do. This has led not only to cost escalation but also to medically inappropriate care. Having the patient pay a fee might restrain this behaviour, and when it is really the patient who pays, it does to some extent. But in the OECD countries, after a point someone else is usually paying (a private insurance company in the United States, a provincial government in Canada, and so on), so the patient is not exposed to the incentive. Co-payments and deductibles are designed to make patients sensitive to costs, but the evidence suggests they have limited aggregate impact—in part because a large proportion of total costs arises from expensive cases where stop-loss provisions have come into play, that is, where the insurer is paying 100% of the cost of care above some threshold. More substantial summaries of the literature on these issues may be found in WHO (1999, Chapter 3) and WHO (2000a, Chapter 5).

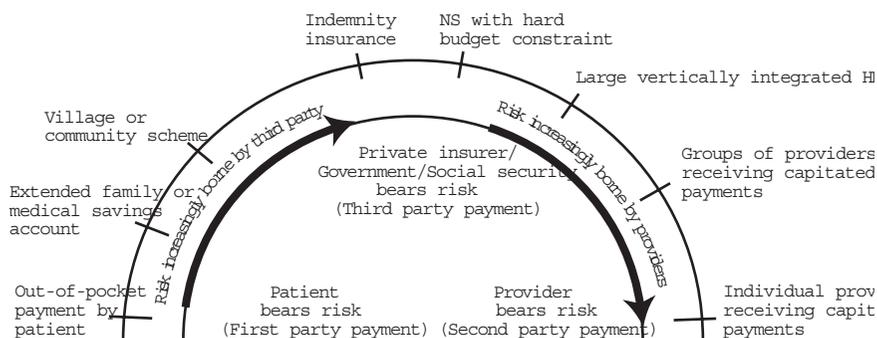
If fee-for-service finance generates a perverse incentive environment, does that imply that a system must forego cost recovery? Not at all: there are other ways to ensure that funds are adequate for costs, ways that are far more effective at controlling nonproductive expenditure than are fee-for-service payments. Earmarking payroll taxes to finance health care for workers and their dependants (usually called *social insurance*) is one approach to recovering costs that is consistent with provider compensation mechanisms relying principally on salaries or capitation rather than fee-for-service. Payment of an annual capitation fee would have the same

effect. It may be that cost recovery via social insurance generates more economic distortions than income, consumption, or sin taxes; nonetheless, when general revenue mechanisms are incapable of financing the basic package of services for all, the option of cost recovery via payroll taxes for the privileged workers in the formal sector is clearly desirable on equity grounds. This form of taxation also links contributions to a specific service, which increases its acceptability. General revenues can then be directed towards financing a system to serve the poor and workers in the informal sector, without requiring cost recovery (Hsiao, 2000). The International Labour Organisation (ILO) and WHO have collaborated in preparing guidelines for implementing social insurance for health (Normand and Weber, 1994) that provide much valuable detail.

A neglected issue is that, at best, social insurance operates on a pay-as-you-go basis. This creates substantial unfunded liabilities to provide health care for people who have retired. A tentative assessment for China found unfunded liabilities for retired people's health care to be a major issue, parallel to the unfunded liabilities of the pension system (Saxenian et al., 1997). Full funding would have obvious and unfortunate consequences for the level of payroll taxes but, as with pensions, pay-as-you-go systems are neither sustainable nor economically desirable.

#### 5.2.4 *Degrees of risk sharing*

As Figure 5.3 demonstrates, different financing and provider compensation arrangements distribute risks among patients, providers, and third-party insurers in different ways. In this context, it is important to note that government finance is one form of "insurance", in that it shifts the risk away from the individual. The semicircle depicts clockwise movement of the locus of risk from the patient (lower left) through local risk-sharing arrangements to a genuine third-party payer (at the top of the semicircle). Continuing to move clockwise depicts third parties devolving risk to providers (known as second parties), by capitation, for example, thereby changing from incentives leading to over-provision of service to those leading to under-provision. When the first party (the patient) carries the full financial risk of health care costs, he or she must pay for all services out of pocket. This makes him or her susceptible to significant financial loss should an expensive adverse health event occur. This type of arrangement represents the majority of health financing plans in low- and middle-income countries and tends to be the least equitable, least efficient, and least organized form of payment. Community financing and medical savings accounts can provide some risk protection by spreading risks

**Figure 5.3** WHO BEARS THE RISK? FIRST-, SECOND-, AND THIRD-PARTY PAYERS

Source: Ruger, Jamison, and Bloom (2001).

across a community or through time, but they are limited by the small number of participants or by an individual's income and capacity to save over several years and by the risk of need occurring in advance of saving. Private insurers pool risk to a considerable extent, but because they aim to maximize profit, their main strategy is risk segmentation, or insuring only the lowest-risk individuals. This practice is known as *cream skimming* or *cherry picking*, and in practice it has proved hard to control, particularly if insurance is bought by individuals rather than for entire groups and if insurers compete for the best risks. From the perspective of society as a whole, this is neither an efficient nor an equitable way to spread risk.

### 5.2.5 Contracting for services and private-sector provision

In the past decade there have been major reforms in some of the OECD countries. On the whole, these reforms did not entail the withdrawal of the public sector from finance (or mandating of finance), but it has sometimes changed delivery radically. In a number of European countries, there is now much greater emphasis on competition in the supply of services and, concomitantly, exploration of a substantially expanded private-sector role in service delivery. In the United States, notably in the State of California, competition has also increased. With this increase in competition have come capitated systems that integrate risk bearing and delivery. These have virtually replaced user fees and third-party insurance. This is occurring for both publicly and privately financed care—indeed, in California, the state government pioneered alternative purchasing arrangements that were later adopted in the private sector. An initial suc-

cess in California is a dramatic reduction in expenditure growth, much of which was precipitated by the improved purchasing practices. These ideas and practices are spreading to middle-income countries: Box 5.2 summarizes some experience with purchasing of hospital services in southern Africa.

A recent review (Mills et al., 2002) categorized other public-sector moves to utilize or improve private provision of services. Sometimes this involved government purchasing or subsidizing services, but other instruments have also been used to influence the demand side (for example, better information for patients), the supply side, or the functioning of the market. Although there were some definite successes, it also seemed that a sustained public-sector presence was usually required, that regulatory efforts of governments were likely to be as demanding of (often weak) institutional capacity as is service delivery, and that certain aspects of quality monitoring or control could meet intense and organized opposition from providers.

It also appears that increased competition can enhance efficiency—if the competition is among alternative capitated plans offering standardized benefit packages as the product and that compete on price or quality of care. The United Kingdom reform has tried to create an internal market that combines the hard budget of capitation for general practitioners with fee-for-service sale of hospital and specialist services to general practitioners (GPs) acting as agents for their patients. It remains to be seen how well this will work, although there is already some evidence of distressingly high transaction costs. Managing competition in the ways being explored by OECD countries can be administratively complex, with concomitant demands on institutional capacity. Transitional arrangements might reasonably involve a substantial period where government entities remain important service providers, particularly above the primary level, while undertaking the range of reforms in public-sector management that are now starting to show results (World Bank, 1993; Harding and Preker, 2000). In the long run, public provision can and should survive if it is efficient when competing with publicly financed private providers operating under similar payment methods and cost containment measures.

### 5.3 IN CONCLUSION

Although OECD experiences will differ in their applicability in different middle-income countries, it may be useful to summarize (and necessarily oversimplify) some of the lessons to date.

**Box 5.2 PUBLIC PURCHASING OF PRIVATE HOSPITAL SERVICES IN SOUTHERN AFRICA**

A worldwide revolution in thinking about public-sector management has occurred in recent years, termed the *new public management*. It aims to improve the efficiency of service provision primarily through the introduction of market mechanisms into the public sector. The earliest form of marketisation in developed countries has tended to be the introduction of competitive tendering and contracts for the provision of public services. In less wealthy countries, the language of contracting is heard with increasing frequency in discussions of health sector reform despite the lack of evidence of the virtues (or vices) of contracting in specific country settings. A recent paper (Mills, Hongoro, and Broomberg, 1997) examined the economic arguments for contracting district hospital care in two rather different settings in southern Africa: in South Africa using private, for-profit providers and in Zimbabwe using NGO (mission) providers. The South African study compared the performance of three contractor hospitals with three government-run hospitals, analysing data on costs and quality. There were no significant differences in quality between the two sets of hospitals, but contractor hospitals provided care at significantly lower unit costs. However, the cost to the government of contracting was close to that of direct provision, indicating that the efficiency gains were captured almost entirely by the contractor. A crucial lesson from the study is the importance of developing government capacity to design and negotiate contracts to ensure the government is able to derive significant efficiency gains from contractual arrangements.

In other parts of Africa, contracts for hospital care are more likely to be agreed with not-for-profit providers. The Zimbabwean study compared the performance of two government district hospitals with two district “designated” mission hospitals. It found that the two mission hospitals delivered similar services to those of the two government hospitals but at substantially lower unit cost. The nature of the contract between government and missions was implicit rather than explicit and of long standing. On the whole, the mission organisations felt the informal nature of the agreement was advantageous, though the government plans to introduce service contracts at district level with all hospitals, both government and mission.

*Source: Mills, Hongoro and Broomberg, 1997. This box is taken directly from the abstract of their paper.*

1. If governments fail to play a major role in financing (or mandating finance) of clinical services for the entire population, efficiency losses may be substantial. More obviously, equity will suffer. As indicated, this is not an argument for public finance of all services, and tertiary services in particular present a difficult problem as to which should be privatized and weaned from public finance.
2. Fee-for-service is best avoided. Governments do better to rely instead on capitated (or perhaps salaried) provider compensation mechanisms. In the many circumstances where cost recovery is desirable, it can be accomplished in the formal sector with mandated payroll

taxes that fully cover the costs of the services to be provided. In more rudimentary stages of health sector development, user fees may be the only way to ensure availability of essential drugs and supplies for the poor.

3. Expanded use of contracting and competition can enhance efficiency in the supply of services. For competition to succeed, the “product” to be provided should typically be a year’s coverage of a complete package of care, rather than individual services. Even when service provision remains in public hands, competitive tendering for needed inputs—from laundry to radiological services—can reduce costs and enhance quality. When contracting to private for-profit providers, it is important for the purchasing agent to ensure that the benefits of any efficiency gains are at least partially captured by the public sector rather than all going to the provider.
4. The task of implementing the policy directions suggested by the preceding paragraphs can be expected to start from very different places and to proceed at different paces in different countries. Governments in many transition countries (and in some other middle-income countries) may lack the capacity or trust required, for example, to move in the direction of mandatory universal coverage. Other options include encouraging the creation of much smaller risk pools involving community finance, as discussed in the preceding chapter. Unfortunately, when the public sector lacks capacity for resource mobilization or service delivery, it will probably lack the greater capacity required to establish and enforce an appropriate regulatory environment for the private sector. The calendar and feasibility of reform depend enormously on initial conditions.

## 6. FINANCING HEALTH FROM THE HIPC INITIATIVE

### 6.1 DESCRIPTION

Launched in 1996, the Heavily Indebted Poor Countries (HIPC) Initiative was the first comprehensive effort by the international community to reduce the external debt of the world's poorest countries. It went beyond earlier debt relief initiatives in that it included debt from multilateral creditors such as the IMF and the World Bank and placed debt relief within an overall framework of poverty reduction. Enhancements made to this Initiative in 1999 further strengthened the links between debt relief, poverty reduction, and social policies.

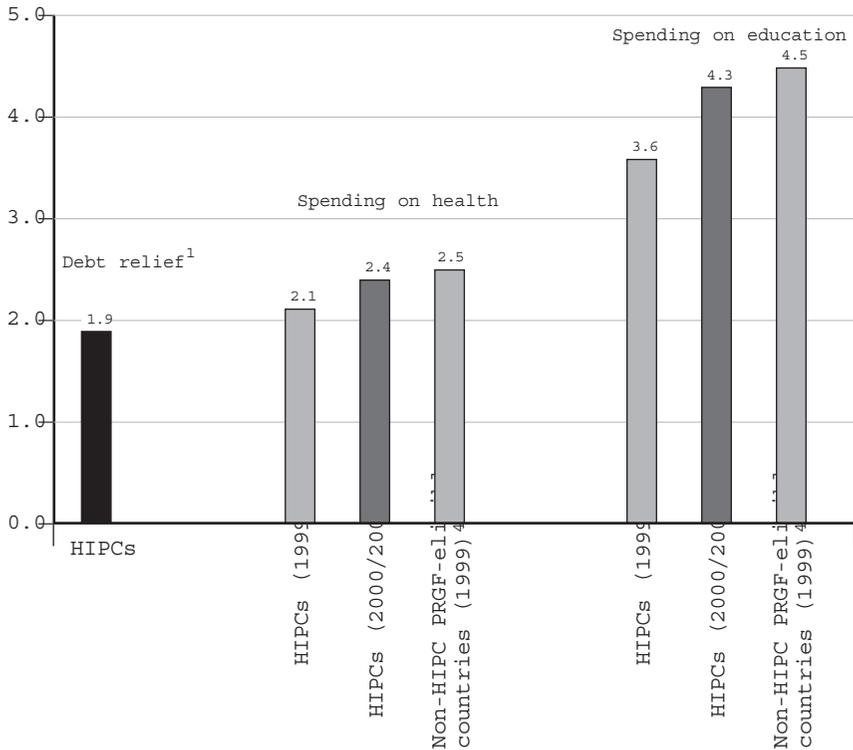
The underlying objective of the enhanced Initiative is to channel the government resources freed up by debt relief into poverty-reduction programmes. Under the programmes being negotiated by the IMF and the World Bank, government spending on public services—such as preventive health care and primary education—that directly affect the poor will increase.

By November 2001, debt relief was committed to 23 out of 41 eligible countries: Benin, Bolivia, Burkina Faso, Cameroon, Chad, the Gambia, Guinea, Guinea-Bissau, Guyana, Honduras, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nicaragua, the Niger, Rwanda, São Tomé and Príncipe, Senegal, Uganda, the United Republic of Tanzania, and Zambia. At this stage—called the *decision point*—interim debt relief becomes available to these 23 HIPCs, provided they meet certain conditions. This interim relief is provided by the IMF and the World Bank, and by other creditors at their discretion. At the *completion point*—which countries reach after establishing a track record of implementing policies that was determined at the decision point—all creditors provide their agreed debt relief.

### 6.2 DECREASE IN DEBT SERVICE

Countries receiving debt relief under the HIPC Initiative should see their debt service payments drop 1.9 percentage points of GDP a year during 2001–2003, relative to what they paid in 1998–1999 (Figure 6.1). Based on an average weighted by each country's GDP, debt service payments will

**Figure 6.1** HIPC DEBT RELIEF AND HEALTH AND EDUCATION SPENDING  
 (PER CENT OF GDP)



Source: Country authorities and IMF staff estimates.

- 1 Average reduction in annual debt service by country in 2001–2003. Excludes Sao Tome and Principe.
- 2 19 of the 23 HIPCx that had reached the decision (DP) by December, 2000. Excludes Sao Tome and Principe.
- 3 14 countries in the case of health spending, and 13 countries in the case of education. Excludes Sao Tome and Principe.
- 4 19 countries.

decline by 1.6 percentage points of GDP. Savings on debt service could be quite significant for some countries—for example, Guyana’s savings from debt relief will average 9% of GDP a year over the next few years.

Some HIPC debt relief may not be reflected in the beneficiary countries’ budgets immediately, however. For instance, relief on debt owed to the IMF may not show up in a country’s fiscal accounts initially, because it accrues to the central bank rather than to the budget (except for the CFA

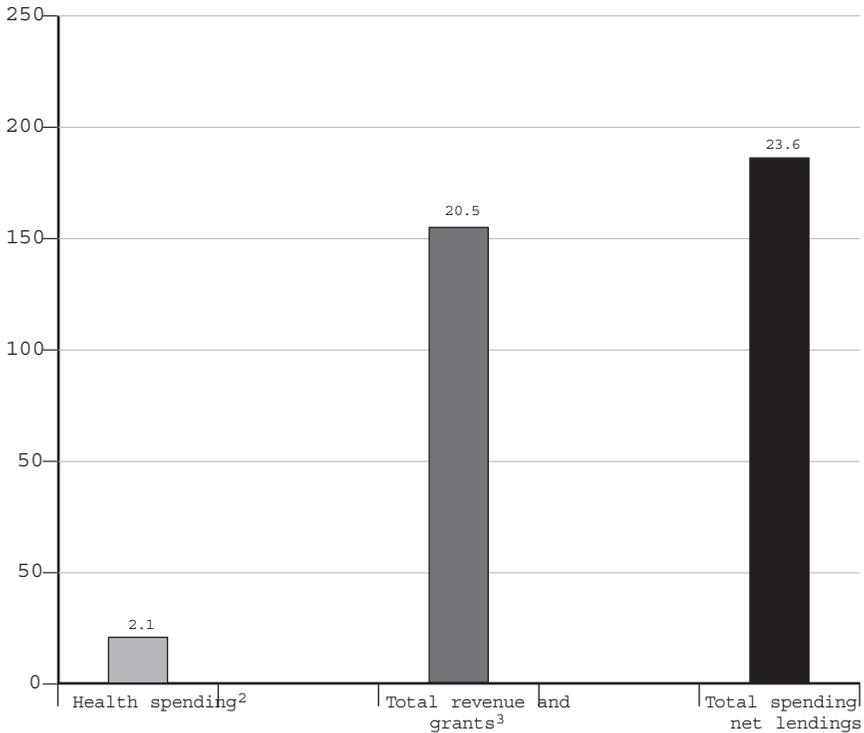
franc zone countries).<sup>9</sup> Therefore countries may need to set up special accounts in the central bank to identify savings stemming from HIPC relief so that they can be transferred to the budget as grants. Similarly, some public enterprises may benefit from debt relief in the form of write-downs of their government-guaranteed debt, but such write-downs will not be reflected in the government budget unless the savings they entail are transferred to it.

### 6.3 POVERTY REDUCTION MEASURES

The use of the funds saved because of debt relief is to be guided by each country's poverty reduction strategy (PRS), which is set out in a Poverty Reduction Strategy Paper (PRSP). The PRSP determines the basis for access to concessional loans from the IMF and the World Bank. Countries formulate their poverty reduction strategies in collaboration with the IMF and the World Bank, as well as with civil society and development partners. Updated annually, the PRSP describes a country's plan for macroeconomic, structural, and social policies for three-year adjustment programmes designed to foster growth and reduce poverty. Strategies are geared towards achieving results to encourage countries to adopt policies that will lead to tangible and measurable improvements in the well-being of the poor. To date, five HIPCs have full-fledged PRSPs; the others have laid out their strategies in interim PRSPs.

The PRSPs of the 23 HIPCs that have reached the decision point all include measures aimed at increasing the poor's access to primary and preventive health care and to primary education. Some PRSPs also call for increased spending on water and sanitation (nine countries), roads and road maintenance (seven countries), and rural development (eight countries). Some include programmes that provide housing for the poor and measures to strengthen social safety nets.

The funds freed up by debt relief under the enhanced HIPC Initiative will be substantial relative to current and past spending on health and education. In HIPCs that have reached the decision point, the 1.9 percentage points of GDP released every year is equivalent, on average, to roughly 50% and 90% of public spending in 1999 on education and health care, respectively. In fact, spending on poverty-reduction programmes—including those involving health care—could increase by even more than the resources freed by the enhanced HIPC Initiative. For the 23 countries that have reached the decision point, total public spending and total revenues (including grants) are estimated to be 24% of GDP and 21% of GDP, respectively. Public health spending is estimated to be 2.1% of GDP in

**Figure 6.2** TOTAL REVENUE, TOTAL SPENDING AND SPENDING IN HIPCs THAT HAVE REACHED THE DECISION POINT<sup>1</sup> (PER CENT OF GDP)

Sources: Country authorities and IMF staff estimates.

1 1999 or the most recent data available.

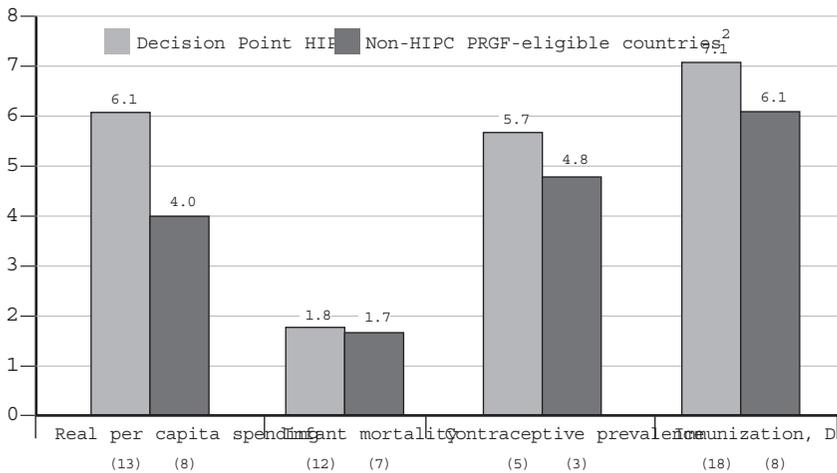
2 Refers to 19 of the 23 decision point HIPCs. Excludes Sao Tome and Principe.

3 Refers to all decision point HIPCs, except Sao Tome and Principe.

1999 (Figure 6.2). By tilting the composition of public spending in favour of poverty-reduction programmes, the PRSP process could increase the budgetary allocations for these programmes.

There is ample scope for raising spending on health care in HIPCs. Although the HIPCs that have reached the decision point have increased their public health care outlays sharply in real per capita terms since the mid-1980s (Figure 6.3), they still spend less on health care than other low-income countries. In 1999, for example, non-HIPC countries eligible for debt relief from the IMF's Poverty Reduction Growth Facility spent about 1 percentage point of GDP more on health care than HIPCs that have reached the decision point. In terms of total government outlays, only

**Figure 6.3** ANNUAL PERCENTAGE CHANGE IN HEALTH AND SOCIAL INDICATORS, 1985–1999<sup>1</sup>



Sources: World Bank, *World Development Indicators 2000 database*; country authorities, and IMF staff estimates.

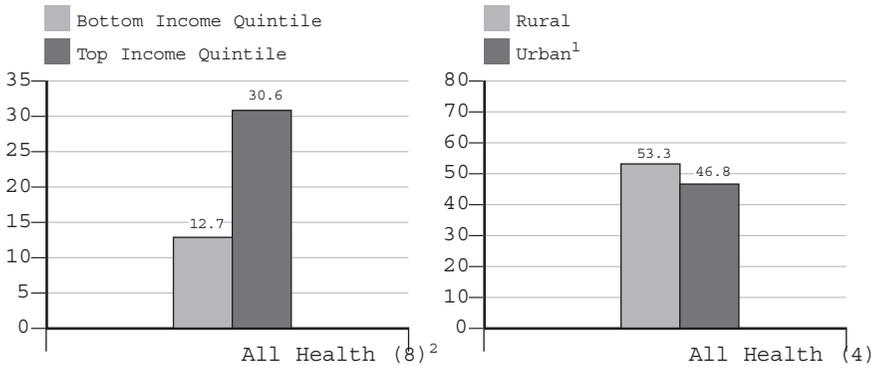
- 1 Average improvement between the first year since 1985 in which the country embarked on an IMF-supported programme and the most recent year for which data are available. Number of countries in parenthesis.
- 2 Excludes transition economies.

about 9% of spending in the heavily indebted poor countries—ranging from US\$ 3 a person in Madagascar to US\$ 35 a person in Bolivia and Guyana—was devoted to health care in 1999.

In light of the urgent health needs of many HIPC countries and the challenges posed by HIV/AIDS, it is tempting to argue that all HIPC relief should be channelled to higher public spending on health. In fact, some—including Jubilee 2000, in a joint statement issued in May 2000 by Jeffrey Sachs and Ann Pettifor—have advocated sequestering the external debt service currently being paid by HIPC countries in a special fund designed to address these needs. However, even if improvements in health indicators are the most important objective of government policy, it may not be advisable to spend all of the savings from HIPC debt relief on public health. Other government spending programmes—such as those for water and sanitation, nutrition, and education for women of childbearing age—might yield a larger payoff in terms of improving the health status of the poor.

Furthermore, an exclusive focus on raising health outlays in HIPC countries as a means to improve health indicators is not justified. Although health indicators have, on average, improved in HIPC countries since the mid-1980s (Figure

**Figure 6.4** BENEFIT INCIDENCE OF PUBLIC SPENDING ON HEALTH CARE IN HIPC'S  
 (PERCENTAGE OF TOTAL SPENDING)



Source: Davoodi and Sachjapinan, (forthcoming).

Note: Data are from the early 1990s, the latest year for which they are available.

- 1 In the countries in the sample, a quarter of the population, on average, lives in urban areas.
- 2 Number of countries with IMF-supported programmes in parentheses.

6.3)—although from low levels—higher public outlays on health have not always been associated with better performance on social indicators. This partly reflects inefficiencies in this spending and the allocation of parts of the health budget to activities that have relatively little effect on social indicators and the well-being of the poor, such as curative services. Benefit-incidence studies confirm that the poor reap a disproportionately small share of the benefits from public health outlays in HIPC's (Figure 6.4). As such, a comprehensive strategy to improve health outcomes should focus not only on securing additional resources for public health, but also on wringing out these inefficiencies in spending. Funds should be reallocated to programmes that are most beneficial to the poor. For example, programmes that provide women with prenatal care and vaccinate children against preventable diseases would meet such an objective.

Mindful of these considerations, many PRSPs focus on improving the efficiency of social spending (including health) and reallocating expenditure to pro-poor activities within each sector. PRSPs have generally aimed to improve the quality and extend the coverage of public health services, with an emphasis on disease prevention (see Box 6.1). To achieve these objectives, HIPC's are committed to increasing public spending on health programmes. However, in line with the considerations described above, resources freed by debt relief will be allocated to a wide spectrum of poverty-reducing programmes, and health sector outlays are expected to

**Box 6.1** HEALTH CARE MEASURES INCLUDED IN POVERTY REDUCTION STRATEGIES

In their poverty reduction strategy papers, the 23 heavily indebted poor countries that have reached the decision point have outlined their main goals with respect to health care and the measures to be taken to achieve them.

Expanding the coverage of, or access to, health facilities, particularly for the poor:

- increasing the supply of basic medicines by making generic drugs more affordable and improving the distribution of drugs, including vaccines (Cameroon, Malawi, Mauritania, Niger, and São Tomé and Príncipe);
- establishing a minimum health services package that covers primary care, prenatal care, and vaccinations (Burkina Faso, Chad, Senegal, and the United Republic of Tanzania);
- providing basic health insurance (Bolivia);
- expanding health infrastructure (Benin, Bolivia, Chad, Mauritania, and Senegal); and
- increasing the number of health workers (Burkina Faso).

Improving the health of the population:

- raising awareness about health issues and intensifying efforts to disseminate public health information (Mozambique);
- promoting immunization and increasing the vaccination rate (Guinea-Bissau, Mali, the Niger, and Uganda);
- strengthening programmes to combat infectious diseases (Malawi, Mauritania);
- educating mothers about nutrition and family planning methods (Benin, Bolivia, São Tomé and Príncipe, and the United Republic of Tanzania); and
- curbing the spread of sexually transmitted diseases through educational programmes and public awareness campaigns that disseminate information on the transmission and prevention of these diseases (Bolivia, Burkina Faso, Cameroon, Guinea-Bissau, Madagascar, Malawi, Mozambique, and Rwanda).

Improving the quality of health services:

- providing training programmes for health staff (Guyana, the Niger, Rwanda, and the United Republic of Tanzania);
- upgrading health workers' career streams (São Tomé and Príncipe);
- adopting a system for annual performance evaluation in the health sector (Benin);
- modernizing the health sector by increasing the participation of the private sector (Nicaragua);
- improving the management of hospitals (São Tomé and Príncipe); and
- decentralizing services (Malawi, Nicaragua, and São Tomé and Príncipe).

increase by an average of 0.4 percentage point of GDP between 1999 and 2000/2001—less than the total amount of HIPC debt relief.

Beyond the challenge of improving the allocation and efficiency of social spending, HIPCs must overcome a number of additional obstacles if they are to reduce poverty. Economic growth—one of the key ingredients for poverty alleviation—must be raised well above its historical average in many countries. Capacity constraints in the social sectors must also be tackled if large increases in the provision of social services are to be realized over the next few years.

#### 6.4 MONITORING USE OF HIPC DEBT RELIEF

It is critical that debt relief results in an increase in public spending related to poverty-reducing programmes, and that these funds are used for their intended purposes so that they reach the poor. In this context, all poverty-reducing spending needs to be tracked, not just the spending associated with the Initiative. The objectives are increases in spending on poverty-reduction programmes and in the share of total public spending devoted to these programmes.

This tracking will require the identification of spending on poverty reduction in the context of each country's poverty reduction strategy. In the short run, the analysis of the shift in spending towards more pro-poor programmes will have to focus on broad-brush estimates of central government spending by function (for example, education and health care). However, within a given category—health, for example—these estimates will not distinguish between spending directed towards helping the poor and other spending (say, hospital care in urban areas). Therefore, countries are being encouraged to provide more detailed data. Once these data and improvements in budget classification are produced, it will be easier for countries to track spending on basic social services for the poor (such as primary education and preventive health care).

Tracking spending on poverty reduction programmes will require improvements in public expenditure management (PEM) systems and a scaled-up programme of technical assistance from international institutions and donors. In the short run, these improvements will involve pragmatic steps to bolster the identification and reporting of spending on poverty-reducing programmes, based on existing PEM systems. Over the medium term, more comprehensive improvements that address budget formulation, execution, and reporting will be needed.

The ultimate aim of tracking spending on poverty reduction programmes is to evaluate whether they actually benefit the poor. Simply allo-

cating additional money to these programmes will not, in itself, bring about the desired reduction in poverty. Therefore, countries should also monitor the actual delivery and impact of the programmes. It could be helpful to monitor the benefit incidence of health programmes and conduct periodic surveys to assess whether funds in the budget actually reach their intended destinations.

Assessing the effectiveness of these programmes would also be helped if countries improved their data on social indicators. Such data are produced infrequently, which makes it difficult to assess the impact of spending. Fewer than half of the PRSPs for countries that have reached the decision point provide data on four or more of the six health indicators (infant, child, and maternal mortality rates; percentage of births attended by skilled personnel; contraceptive prevalence rate; and HIV prevalence in pregnant women 15 to 24 years old) used by the international institutions to monitor the development of poor countries (see *A better world for all: progress towards the international development goals*, a report published by the IMF, the OECD, the United Nations, and the World Bank). In their PRSPs, more than half the 23 HIPCs acknowledge constraints that prevent them from monitoring social indicators with any degree of accuracy and note that more work is needed in this area. More timely and complete data are vital to strengthen poverty reduction strategies as countries will obtain feedback on trends in social indicators and the impact of programmes more rapidly.

In addition to obtaining reliable, detailed data, the HIPCs will need to add to the resources made available to them under the enhanced HIPC Initiative. This will entail mobilizing domestic resources to ensure themselves of adequate funding over the long term for poverty reduction programmes. Therefore, they will also need to strengthen governance and tax administration—while developing institutions better able to be used to monitor government spending—to achieve sustained improvements in living standards for their poorest citizens. They will also need to craft poverty-reduction strategies that are conducive to high economic growth, which will be necessary to ensure that the burden of external debt, relative to the size of the economy, remains sustainable.



## 7. FINANCING HEALTH SYSTEMS THROUGH EFFICIENCY GAINS

### 7.1 INTRODUCTION

During the last decade or so, much attention has been focused on the “allocative” efficiency of developing country health systems, or the extent to which health systems achieve an optimal balance in the distribution of resources between competing uses (see, for example, World Bank, 1993). The development (and, in more than one case, abandonment) of “quasi-markets” has been enmeshed with this movement, as has an increased interest in private provision of health care and in public-private partnerships. All of these have, at various times, been hailed as structural solutions that serve to improve the efficiency of health systems. Yet consideration of the direct methods and policy interventions needed to improve the productive (or “technical”) efficiency of health systems and providers has received much less attention in international policy debates, despite its potential for critical impact on the resources available to the health sector.

### 7.2 DEFINING EFFICIENCY AND EFFICIENCY CONCEPTS

#### 7.2.1 *Production*

The process of production brings together different *inputs* (or factors of production), such as labour, land, capital in the form of buildings and machinery, and raw materials or intermediate inputs, and combines them using knowledge of a technical process. This creates an *output*. The question of exactly what constitutes the “output” of health care and how to measure such output remains extremely complex. The main focus of the research literature on technical and economic efficiency, and hence of this chapter, is explicitly on *intermediate* outputs (such as surgical procedures, hospital admissions), and not on ultimate improvements in health status.

#### 7.2.2 *Technical efficiency*

A *technically efficient production unit* produces as much output as possible from a given amount of input, or produces a given output with the minimum possible quantity of inputs—that is, it produces on the isoquant/production possibility frontier. A technically inefficient production

unit operates off the isoquant, or inside its production frontier (McGuire, 1987; Barnum and Kutzin, 1993). Technological change occurs through the development of new processes that can produce more output for the same or less input than older processes.

### 7.2.3 *Economic efficiency*

A production unit that is *economically efficient* will produce a given output for the minimum possible total input cost, or maximize output for a fixed input budget—it is, by definition, a cost-minimizer, and operates at the point of tangency between the isoquant and the isocost line. At this cost-minimizing point, the value of the marginal product of each factor will be equal ( $MP_K/P_K = MP_L/P_L$ ). When these ratios are unequal, the potential exists to make factor substitutions that will reduce the costs of production.

### 7.2.4 *Productivity*

The production function for a particular process represents the relationship between outputs of goods and services in real physical (primal) volumes to the different inputs used, also in terms of physical volumes, which can be expressed in terms of output per unit of total input (O/I)—or *productivity*. Productivity can be measured through the use of partial productivity measures—the ratio of output to an individual input or input class—or in terms of multi-factor productivity (or total factor productivity)—the ratio of output to all associated inputs.

### 7.2.5 *Allocative efficiency*

Concepts of *allocative efficiency* embrace the notion that society is concerned not just with how an output is produced, but also with the outputs and balance of outputs that are to be produced. Therefore, allocative efficiency is achieved in a situation in which it is impossible to improve the welfare of anyone without reducing the welfare of someone else through a change in the output combination—that is, the achievement of a Pareto-optimal state. Technical and economic efficiency are necessary but not sufficient conditions for allocative efficiency to be achieved. Donaldson (1994) suggests that what separates notions of allocative efficiency from notions of technical efficiency is that the former is concerned with the question of who benefits from production, while the latter concerns only production itself.

### 7.2.6 *Short run and long run*

The concepts of short run and long run concern the extent to which, over time, a production unit can change the level and combination of inputs it employs, and/or the level or type of output it produces. Conventionally, the *long run* refers to a period that is sufficiently long for a production unit to be completely free in its decisions from its present policies, possessions, or commitments (Baumol, 1977). By contrast, in the *short run*, at least one significant factor of production cannot be changed—it's fixed, in other words. The practical ability of firms or organizations to shift from a constrained short-run position to a flexible long-run choice of inputs and processes is fundamental to achieving technical and economic efficiency.

### 7.2.7 *Returns to scale*

A firm is said to exhibit constant *returns to scale* when a unit increase in inputs yields a proportionate unit increase in output. Increasing returns occur if a unit increase in input yields a proportionately larger increase in output, and decreasing returns when a unit increase in input yields a proportionately smaller increase in output. Therefore, a firm is said to exhibit economies (diseconomies) of scale if, over some portion or its entire long-run average cost curve, average costs are declining (increasing). Economies of scope may occur whenever it is possible to produce two or more outputs jointly more cheaply than they can be produced separately.

### 7.2.8 *Inefficiency and health care production*

We face particular problems when we want to consider health care efficiency because almost all health care programmes produce multiple outputs and have multiple goals. This can make measurement complex, especially when data are in short supply. Apparently similar outputs may also, on closer inspection, prove to be highly heterogeneous with respect to quality and/or the underlying characteristics of the recipients of health care. Comparing countries and making generalizations is especially difficult in terms of technical and economic efficiency, as there can be no absolute measure of economic efficiency, which is determined by relative factor prices. Therefore, what constitutes an economically efficient process in one country may be inefficient in another, due to different relative factor prices. Furthermore, even within a country, productivity and efficiency (of all forms) are essentially relative concepts. There is no absolute "ideal" level of productivity or technical efficiency, because technology and processes are constantly changing and developing. Therefore,

comparators and benchmarks can never be more than guides towards improvement and what might be possible.

Conceptually, there are four main manifestations of technical and/or economic efficiency, which can be illustrated with reference to specific health care examples.

1. *Failing to minimize the physical inputs used*

- Excessive hospital length of stay, with patients remaining in hospital after they have ceased to benefit from being in hospital.
- Poor scheduling of diagnostics and procedures, resulting in excessive hospital stay.
- Prescribing an intervention or diagnostic test that is known to be of no therapeutic value or relevance.
- Over-prescribing of drugs.
- Excessive use of diagnostic tests.
- Wastage of stocks—allowing stocks to expire; allowing deterioration due to poor storage and so on; or discarding unused contents of opened packets.
- Over-staffing.

2. *Failing to use the cheapest combination of inputs*

- Inappropriate use of more expensive staff relative to less expensive staff. For example, physicians rather than professional nurses for basic prescribing of essential drugs, or professional nurses instead of clerical staff for basic administrative duties.
- Use of branded drugs when generics are available.
- Failure to secure lowest cost supply; for example, continuing to buy supplies from retail suppliers instead of through competitive bidding.
- Using paramedic-staffed emergency ambulances to transport patients home from hospital, instead of paying for their bus tickets.

3. *Operating at the wrong point on the short-run average cost curve*

- Implementing budget cuts that protect salaries at the expense of other expenditure items—so reducing the number of patients who can be treated, but with no reduction in fixed costs.
- Refusing to fill a vacant anaesthetist post due to budget restraints, forcing the surgical staff to limit their operating time.
- A rural hospital operating at an average bed occupancy of 50% due to limited local demand.
- Inadequate drug supply leading to under-use of primary care clinics.

4. *Operating at the wrong point on the long-run average cost curve*
- Planning to provide full pathology laboratory facilities at every hospital when laboratory services actually demonstrate economies of scale and should therefore be concentrated at central sites.
  - Planning to build a 1500-bed teaching hospital when diseconomies of scale are known to operate in hospitals above 600 beds.

### 7.3 THE CAUSES OF TECHNICAL AND ECONOMIC INEFFICIENCY

There are two main reasons why firms or individuals might fail to minimize inputs and input costs. One explanation is that they are in fact seeking to minimize costs, but are being prevented from doing so—either by the sort of institutional constraints discussed in terms of the short-run cost curve above, or by lack of information, which prevents them from identifying efficient input combinations and processes. The other is that they are simply not trying to minimize costs, for some behavioural or motivational reason. Various theories have been advanced to explain the failure of many organizations to either maximize profits or to minimize costs (see, for example, Baumol, 1977; Williamson, 1963; Liebenstein, 1966). Somanathan et al. (2000) distinguish between absence of incentives for efficient behaviour and constraints on decision-makers' abilities to make efficient choices. Their framework is summarized in Table 7.1.

Table 7.1 highlights the importance of human resources and human resources policy in the search for improved efficiency. Flexibility or inflexibility in employment conditions will have a significant impact upon the ability of managers to substitute labour inputs efficiently, while poor incentives and inadequate remuneration of health workers can frequently be linked with low productivity and poor performance. Skills shortages and failure to recruit, retain, and replace key staff can set up institutional bottlenecks, which may significantly undermine the efficient operation of health care providers. Finally, HIV/AIDS threatens to undermine health care workers' productivity further in many developing countries. As crucial staff become sick and die, they leave key gaps that will undermine efficient operation if not dealt with rapidly and proactively.

### 7.4 INTERACTIONS BETWEEN ALLOCATIVE AND TECHNICAL/ ECONOMIC EFFICIENCY

Technical and economic inefficiencies in health care production have the potential to undermine seriously the apparent gains in allocative efficiency indicated by cost-effectiveness analysis (see discussion by Berman, 1982). Failure to incorporate some assessment of the relative efficiency of

**Table 7.1** WHY FIRMS DON'T MAXIMIZE PROFIT OR MINIMIZE COSTS

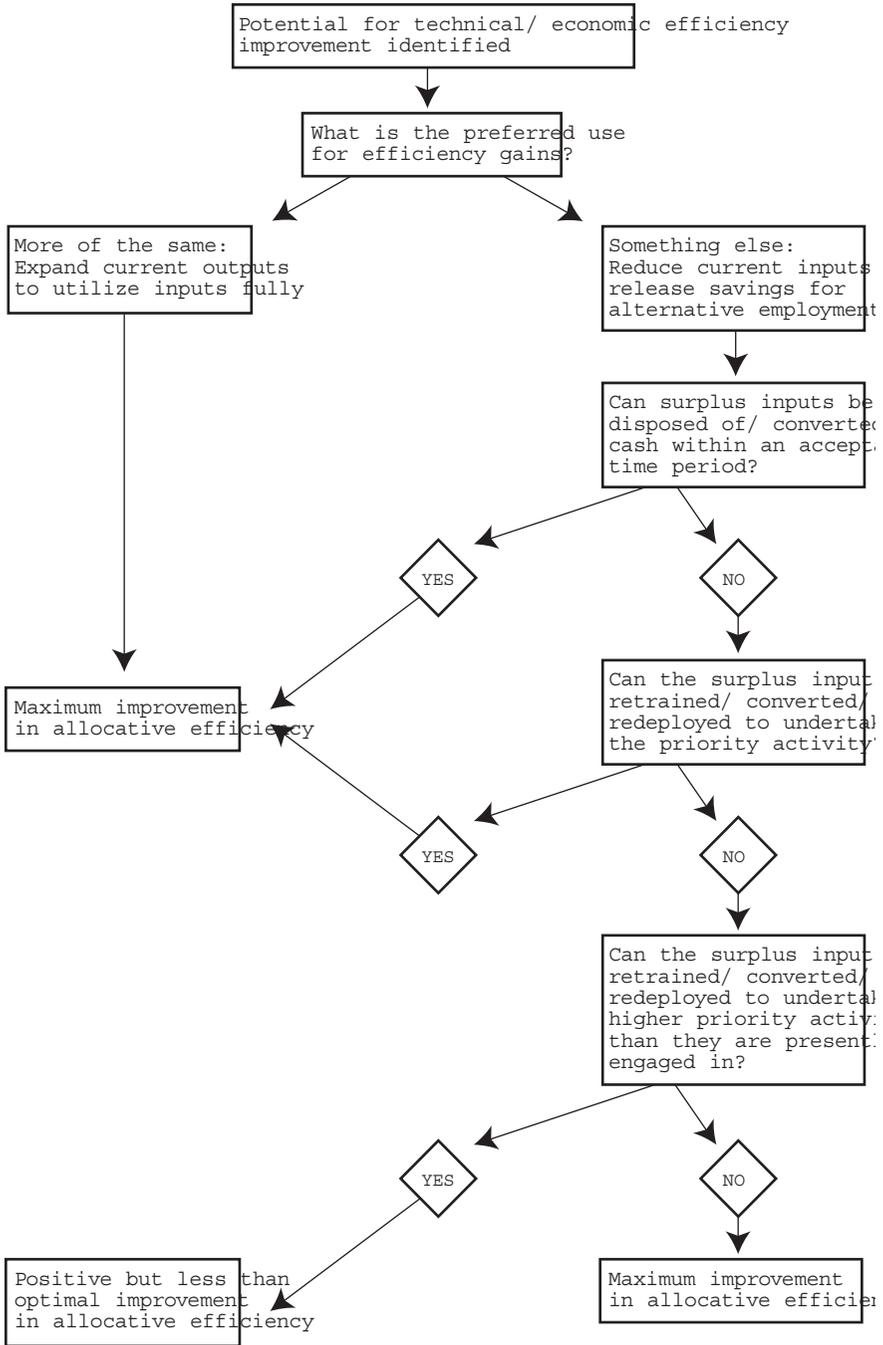
<b>Incentives</b>	
Public ownership	No claim on residual profits/savings
Objectives	Multiple policy objectives requiring tradeoffs and discretion (such as efficiency, equity, access, participation, quality, cost-recovery, and so on)
Payment mechanism: personnel	Salaried systems will generally mean remuneration is unaffected by performance
Payment mechanism: provider	Fee-for-service and case-based payments provide strong incentives to increase activity/revenue compared to fixed budgets
Market information	No competitive performance information/signals
Corruption, theft, and fraud	System tolerates corruption, theft, and misappropriation of resources
<b>Constraints</b>	
Lack of resources	Inadequate funding
Input indivisibilities	Under-utilization of fixed, indivisible assets
Demand	Sparse rural population Preferences for inefficient and unnecessary care
Management information systems	Limited data availability on services for decision-makers, little data on prices for lower-level managers
Public-sector procedures & policies	Conformity with centrally determined personnel, procurement and budgeting procedures
Continued dominance by medical profession	Physicians remain pre-eminent in health care management and decision-making

*Source: Somanathan et al. (2000).*

providers may bias the outcomes of cost-effectiveness analysis. However, improvements in technical and economic efficiency themselves lead to the need for other decisions, most importantly a set of allocative decisions to choose to what use these released resources should be put. In the short run, where the resources released cannot be transformed into cash, there will be potentially significant physical and technical constraints on the allocative choices available. There is also a set of managerial decisions to be made on how, in practice, to move from a short-run constrained position to the preferred long-run allocation of resources.

Figure 7.1 presents these decisions in the form of a flow chart. Its most important implication is that, in reality, our ability to transform the

**Figure 7.1** DECISION TREE FOR IDENTIFYING POTENTIAL TECHNICAL AND ECONOMIC EFFICIENCY GAINS



gains from eliminating technical and economic inefficiencies into our preferred and most cost-effective alternative use may be much constrained. Simply identifying inefficiencies is not the same thing as eliminating their opportunity cost!

### 7.5 MEASURING EFFICIENCY AND THE POTENTIAL FOR IMPROVEMENT

In practice, measuring efficiency in health care will almost always involve relative efficiency—that is, efficiency relative to some benchmark comparator (the best or a sample of best achievers in whatever element of efficiency we choose to examine), or changes in efficiency over time. This is an important limitation, which should not be understated. Depending on the measurement technique we choose, we can estimate the gains from improving aggregate efficiency up to that of the benchmark unit with a degree of confidence. Once at the benchmark level, we should not assume that there is no further potential for efficiency gains, but the existence and realization of such gains become matters purely for speculation.

Adapting the categorization of Barnum and Kutzin (1993), it is possible to categorize the main measurement approaches relevant to estimating efficiency and the scope for improving technical and economic efficiency. They identify three main approaches: input/output ratios and performance indicators, accounting costs, and statistical cost and production functions. To this list should be added frontier estimation methods.

By itself, though, measurement achieves nothing beyond generating interesting (and, frequently, not so interesting) statistics. Therefore, it is very important to place the measurement of efficiency and productivity firmly in the context of a framework of improvement and innovation. This requires some mention of the concepts of benchmarking and performance management. The concept of benchmarking is rooted in the simple idea that organizations can seek to learn from the best practice of others (Holloway, Lewis, and Mallory, 1995). Holloway and colleagues distinguish between particular benchmarks, which are best practice standards towards which organizations should move, and benchmarking as a process. The latter requires an organization's commitment over time to identify benchmarks, then to develop and implement techniques and plans for achieving those benchmarks on a permanent basis.

In a number of public-sector environments, there has been a tendency to move beyond the essentially voluntary concept of benchmarking to an active, hierarchical system of performance management. Such arrangements typically involve a higher management level selecting productivity

and efficiency benchmarks—often in parallel with quality and outcome benchmarks—which are then translated into explicit targets for organizations and individual managers. Although performance regimes can generate negative responses (for example, Grout et al., 2000), they remain an essential requirement for improving efficiency in a nonmarket system that contains no inherent rewards for raising productivity and reducing costs—and their absence is a persistent feature of most developing country health systems.

#### 7.6 THE SCALE OF INEFFICIENCY IN HEALTH CARE PRODUCTION: INTERNATIONAL EVIDENCE

Working Group 3's review of the international literature identified strong evidence of significant variation in provider efficiency within all health care systems, both in developed and developing countries, and across practically all dimensions of efficiency measurement. Tables 7.2 and 7.3 present the key findings of those studies that explicitly estimate levels of inefficiency and/or potential efficiency gain. Other Working Group Reports and the CMH Report discuss several other dimensions in greater detail.

This brief review can be synthesized into a fairly succinct set of critical findings and implications:

- There seem to be very strong grounds for assuming that all health care systems, in both developing and developed countries, will display significant intra-system variations in performance, technical, and economic efficiency.
- Similarly, there seems to be scope for significant real savings in all or most systems from reductions in relative inefficiency.
- With certain exceptions (such as bed occupancy rates), international and intercountry benchmarks and comparisons for technical and economic efficiency are limited in value. In particular, intercountry comparisons of unit costs are unlikely to yield meaningful conclusions.
- Our ability to estimate the impact of inefficiencies relating to suboptimal input mixes is currently very limited—even though this in no way diminishes the likely importance of this issue.
- We know a lot more about inefficiency in hospitals (and how to tackle it) than we do about inefficiency at other levels of care.
- There are strong grounds for accepting that acute hospitals that have less than 200 beds are too small to provide a full range of acute general hospital functions in terms of scale economies, while hospitals

**Table 7.2** INEFFICIENCY ESTIMATES FROM DEVELOPING AND MIDDLE-INCOME COUNTRIES

Country	Subject	Method	Savings/Output Increase Possible	Reference
Kyrgyzstan	Public hospitals	Costing and econometric model	Reduced LOS and bed reductions without hospital closures – 19% cost savings Reduced LOS and hospital closures – 43% cost savings	Street and Haycock, 1999
South Africa	Public hospitals	DEA	Level of hospitals: Level I – 26% cost savings and 30% bed reduction Level II & III – 33% cost savings and 39% bed reduction	Zere et al., Unpublished
Sri Lanka	Public hospitals	Production function  Cost function	Level of hospitals: Complex – 44% output increase Intermediate – 25% output increase Basic – 100% output increase Complex – 26% savings Intermediate – 21% savings Basic – 24% savings	Somanathan et al., 2000
Sub-Saharan Africa	Drug use and procurement	Model	Implementing range of efficient procurement, distribution and prescribing practices: 10 – 60% cost savings	Sub-Saharan Africa
Tanzania	Public dispensaries	Costing	All units achieve median performance: 8% cost savings on personnel 4.5% cost savings on drugs	Gilson, 1995
Turkey	Public hospitals	DEA	9.4% cost savings or output increase	Ersoy et al., 1997 Foster, 1991

Key: DEA = Data Envelopment Analysis; SFE = Stochastic Frontier Estimation

**Table 7.3** INEFFICIENCY ESTIMATES FROM DEVELOPED COUNTRIES

Country	Subject	Method	Savings/Output Increase Possible	Reference
Denmark	Public hospitals	DEA Free disposal hull	41% input saving / output increase 2% input savings/ output increase	Holvad and Hougaard, 1993
Sweden	Public hospitals	SFE	Switch to output-based reimbursement: 9.7% cost savings	Gerdtham et al., 1999
USA	Pennsylvania acute care hospitals	SFE	Without case-mix adjustment: 18% cost savings/output increase With case-mix adjustment: 8% cost savings/output increase	Rosko and Chilingirian, 1999
USA	Michigan public and not-for-profit hospitals	DEA	Public hospitals: 2.2% input savings/output increase Private not-for-profit hospitals: 11.9% input savings/output increase	Valdmanis, 1990
USA	California Catholic hospitals and non-Catholic not-for-profit hospitals	DEA	Catholic Hospitals: 19% input savings/output increase Non-Catholic hospitals: 24% input savings/output increase	White and Ozcan, 1996
USA	Nursing homes	DEA	7% input savings/output increase	Nyman et al., 1990
USA	Physician practice in treating otitis media	DEA	Comply with optimal treatment protocol 20% input savings/output increase	Ozcan, 1998
USA	HMOs	DEA	33% input savings/output increase	Rosenman et al., Unpublished
Norway	Public dental clinics	SFE DEA	7% input savings/output increase 26% input savings/output increase	Grytten and Rongen, 2000
USA	Community mental health centres (CMHC)	DEA	CMHCs with inpatient services: 19% cost savings/output increase CMHCs without inpatient services: 53% cost savings/output increase	Tyler et al., 1995

Key: DEA = Data Envelopment Analysis; SFE = Stochastic Frontier Estimation

that have more than 600 beds are likely to display diseconomies of scale (for example, CRD, 1996)

The direct implications of these conclusions are diverse, but need to be spelt out. The scale of technical and economic inefficiencies from the developing country studies displayed in Table 7.2 is worth contemplating: most of the hospital studies indicate potential savings of 20% or more relative to current resource use. Given that the share of hospital expenditure out of total health spending averaged 30 to 50% in the developing countries surveyed by Mills (1990), and 30 to 81% of total public health spending in those surveyed by Barnum and Kutzin, hospital inefficiency could easily tie up at least 10% of total health spending. Given that we also have a far less developed understanding of the scale and nature of inefficiency in primary care, it therefore seems reasonable to suggest that the hospital sector (at all levels) should be our main focus, certainly in terms of immediate action.

Still on the theme of hospitals, the evidence on optimal hospital size raises two major concerns. First, it suggests a possible need to rethink the formulation of the district hospital concept—while accepting that many situations will arise, especially in remote communities with poor transport links, where it is entirely unavoidable and quite desirable for a “suboptimally” small hospital to operate. As a minimum, development of acute district hospitals should start with the presumption that they should probably be larger than 200 beds (and certainly greater than 100 beds). The burden of proof lies with those who wish to have more, smaller hospitals. Second, future developments (particularly of “prestige” tertiary hospitals) should be constrained to the 600-bed maximum—and that injunction must surely include any planned replacements for existing very large hospitals.

More generally, the evidence suggests that we should be very conscious of the potential impact of demand upon utilization. This is especially the case where health systems and current organizational models are clearly failing to give users what they want—leading patients to vote with their feet and health facilities to operate at inefficient low levels of capacity. A compromise is required here—resources must be found to improve the availability of key inputs (drugs, supplies, physicians) at some sites, while other sites may have to give up the pretence of offering that service (such as downgrading small, understaffed district hospitals to become health centres).

## 7.7 A PROPOSED FRAMEWORK FOR ADDRESSING TECHNICAL AND ECONOMIC INEFFICIENCY

The relative nature of the concepts of technical and economic efficiency requires that each country must develop a strategy of its own. In turn, each health care provider unit or facility must develop its own programme to improve efficiency. There is much room to share experience and expertise, both in measurement and in how to improve efficiency, but there is no way of escaping the need to identify specific problems from the top to the very lowest level of the system, and to develop solutions that will fit local realities and overcome local obstacles. Therefore, we feel that a successful national-level approach to developing an efficiency improvement programme would contain the following components:

- Identification and quantification of major areas of technical and economic inefficiency and potential gains from efficiency improvement.
- Assessment of priority employment of funds/resources released through efficiency improvements.
- Identification of key causes of identified inefficiencies.
- Assessment of possible interventions to improve efficiency.
- Assessment of likely constraints to acting upon efficiency improvement options, and estimation of how much can really be saved.
- Implementation of structural changes required to facilitate major or one-off improvements.
- Implementation of organizational and cultural shift to continuous productivity improvement, including appropriate performance management and incentive systems.

Far greater emphasis must be placed on implementation and feasibility than has perhaps been the case in the past, as “efficiency” issues in developing countries have tended to be treated as technical and measurement questions far more frequently than they have been treated as core management objectives. Box 7.1 summarizes those factors most likely to constrain or enable efforts to improve efficiency.

Complex and unpalatable choices must be made if significant efficiency gains are to be realized. Most important, perhaps, efficiency improvement must never be seen as a one-off purging of current inefficiencies. There may well be a powerful case for a specific structural intervention (such as major restructuring and rationalization of the hospital sector), but this should never obscure the need to imbue and constantly renew a culture of continuous efficiency improvement at all levels of the system. Without such a culture, all that will be achieved is a shift from one position of static productivity to another. It is this element that is perhaps

**Box 7.1** FACTORS LIKELY TO HAVE AN IMPACT ON FEASIBILITY OF EFFICIENCY IMPROVEMENTS

<b>Constraints</b>	<b>Enabling Factors</b>
Job losses politically unacceptable	High-level political commitment to “do what it takes” to reshape system
Lack of political will to change or delete restrictive regulations/legislation	Need for efficiency improvement seized as an opportunity to update procedures
Legal framework of employment precludes compulsory redundancies of workers	Maximum budgetary flexibility and delegation is permitted
Inflexible budgetary and/or procurement systems	Political capital invested to bring key professional groups on side
Professional associations have not bought in to need for efficiency improvements	Clear rewards for abandoning previous corrupt practices, and genuine commitment to eliminating corruption at all levels
Corruption widespread and reforms do not include increased salaries to counterbalance loss of illicit earnings	Integration of responses and support from other sectors, again requiring political commitment and coordination
Poor general infrastructure, especially poor communications, which is not improved to support efficiency improvement programme	Acceptance that significant savings are unlikely to be realized without some up-front investment (spend to save)
Unwillingness to shift resources from other parts of system to leverage efficiency savings	Clear guarantee that savings will be retained
Refusal to commit interim additional funds to leverage efficiency savings	Strong cadre of high-status nonmedical professional managers for whom efficiency improvement is a key task
Perceived risk that savings will be “taken away”	
Financial distress (for example, persistent failure to pay salaries, suppliers, and so on)	
Inadequate managerial capacity and lack of commitment to efficiency improvement, trying to reduce “unproductive” management	

most noticeably absent in many developing countries (and that is too often overlooked by donor agencies, lenders, and technical advisers). It is far easier to concoct grandiose structural health system reforms than it is to change human behaviour—but creating such a culture is also the key to unlocking resources to benefit patients and communities. Without a class

of professional managers, such a cultural shift is unlikely to succeed. The establishment of a competent cadre of managers, who, it must be stressed, do not need to be medical practitioners, is likely to be the core precondition for placing many developing country health systems on a path of productivity growth, rather than one of stagnation or decline.



## 8. DOMESTIC MACROECONOMIC ISSUES ASSOCIATED WITH THE USE OF EXTERNAL FUNDS

### 8.1 INTRODUCTION

This Report suggests the need for a substantial input of external funds to finance a minimum core set of health services. However, it is important to address the domestic macroeconomic policy implications of this type of resource transfer. A number of questions arise. What is the macroeconomic impact of the transfer? What might be the indirect policy reactions to such transfers? How sustainable would be a series of such transfers? Do they raise moral hazard issues? What might be the appropriate policy responses to address these issues?

### 8.2 DIRECT MACROECONOMIC IMPACT

It is useful to start with the simple assumption that the entire incremental costs needed to finance adequate health care in a low-income country are provided annually through an external grant in the form of foreign currency (that is, not tied financing). The money would be used to increase government expenditure on a mix of tradable (pharmaceuticals, construction materials) and non-tradable (labour, utilities, land) goods and services, depending on the production mix for health care services.

First, take a case where the grants are entirely spent by the government on tradable goods (such as buying foreign-made drugs for AIDS patients). Government spending would rise and be entirely satisfied by imports; the increase in imports would be completely financed in the balance of payments by the grant inflows; domestic activity would be unaffected. The immediate impact of such a move on the macroeconomy would probably be quite limited. However, if the government spending substitutes for existing private consumption, there might be some second-round effects as private consumers divert resources to other uses (some of which will, potentially, be locally produced non-tradables).

Next, take the alternative case where the grants are spent partly on domestic non-tradables. This will serve to drive up the price of non-tradables, divert resources away from the domestic production of tradable goods, and worsen the trade balance. The worsening of the trade balance

will, however, be less than the value of the grants and the overall balance of payments will improve. The net effect of such a resource reallocation will be an appreciation in the real exchange rate that will serve to worsen the country's competitiveness. Depending on the exchange rate regime in place, this real appreciation could manifest itself either as an appreciation of the nominal rate or as domestic inflation. Such inflation will, of course, have distributional consequences since it is more likely to be borne by the poorer elements of society.

The above outlines the short-run demand impact of the inflow of financial transfers to cover increased health outlays. However, over the medium term, the increased spending on health should lead to the accumulation of human capital and a supply-side increase in the country's growth potential. This improved competitiveness from human capital accumulation could serve to offset the real exchange rate appreciation from the external transfer and, in turn, lead to a gradual improvement in the trade balance.

### 8.3 INDIRECT POLICY REACTIONS

Of course, these textbook relationships oversimplify the underlying behavioural responses and the corresponding macroeconomic impact of a large inflow of external funds. The likely effect on policy-makers is an important issue that needs to be considered. Can the country tolerate increased dependency in the health sector, relative to other public services, or will this lead to intolerable political-economy pressures? Such a dependency could, for example, create unsustainable factor price differentials between health and other sectors. The higher wages paid to health employees could lead teachers, for example, to demand higher pay or could lead to talented teachers leaving their profession. The policy response to such sectoral discrepancies is unclear. It could be that the government will give in to higher pay demands from the non-health public sector, or there could be a decline in the quality of non-health public services.

In part, such pressures from differential funding will be mitigated by policy-makers diverting domestically funded resources away from health care and into the provision of other public goods (such as infrastructure spending, defence, and so on) or even to allow a reduction in taxes or the overall deficit.<sup>10</sup> As a result, although the total resources spent on health are still likely to rise, they will rise by less than the amount of the earmarked financial transfer. This leads to its own problems, however, with health spending systematically falling short of targets and the health out-

comes and goals underlying the external transfers not being achieved. It may also lead to difficulties with donors who will perceive their funds as being diverted towards other uses. Policy-makers could also reduce pressures on demand by increasing tax revenues through better tax administration, broadened tax bases, or higher tax rates.

In addition, the knowledge that resources are likely to be allocated on the basis of poor health outcomes could provide a perverse incentive for policy-makers. They might choose to divert existing resource allocations away from preventive care and education to focus on tertiary treatment and to attract a larger share of the global health aid budget.

Finally, given that the budget is likely to be subject to various shocks over time, setting up a well-financed health sector makes it the prime sector to be raided to finance other, less-favoured sectors, in the event of a budgetary shock. As a country comes under greater fiscal stress, the government may choose expedient but myopic goals—such as reducing health care spending in contravention of conditions in foreign grants—and deal with the consequences—such as the loss of such funding—later on. Alternatively, if the health budget was financed through earmarked taxes (see Chapter 3), this could protect it from budgetary shocks, although what the government has given in earmarked funds it can also take away, by simply changing the terms of the earmarking formula.

#### 8.4 BUDGET UNCERTAINTY AND FISCAL SUSTAINABILITY

Whatever the use of the grants, the end result will inevitably be an increase in the level of public services being provided by the government. Since the commitment to health care spending is one that is long lasting and likely to be difficult to reverse without significant adjustment costs, two questions arise: How can countries handle the year-to-year uncertainty of such grants?<sup>11</sup> And what will be the effect of such a flow of aid on the long-run sustainability of the fiscal position?

It is inevitable that relying on large external funding to finance basic public services will increase the uncertainty surrounding the fiscal position. The availability of such grants is usually conditional not only on progress on the domestic front in using resources effectively to provide health care, but also on numerous external factors. These include the economic and political situation of the donor countries (in terms of their willingness to allocate resources for overseas development assistance [ODA]) and the ability to satisfy cumbersome procedures for disbursement. Given, then, that such funding is uncertain but will be used for long-term public health commitments, how can the government best insulate itself? Clearly,

it is important to increase the ability of the budget to respond to temporary revenue shortfalls through a larger deficit by pursuing prudent macro-fiscal policies. In addition, reducing nondiscretionary expenditures and earmarked revenue sources will allow the government to respond with greater flexibility to reductions in expenditures—both in health care but also in other public services—to offset a temporary aid shortfall. Finally, improvements in tax and customs administration and the efficiency of the revenue system will allow the government to mobilize domestic revenue sources should they be needed to substitute for the external transfers.

Over the longer term, if the increase in foreign financial transfers is permanent, there should, in principle, be no effect on the overall sustainability of government finances. However, it is unlikely that aid on this scale, dependent on many donors, will be expected to continue forever. Eventually a government would be expected to “graduate” from its dependence on such aid. Therefore, it is likely that such permanent increases in expenditure commitments will have a negative impact on long-run fiscal sustainability and will require offsetting actions elsewhere in the budget. However, as the supply-side effects, discussed earlier, of higher human capital accumulation materialize, the increased growth rate may be sufficient to offset any deterioration in sustainability. In addition to the direct effects of aid spending, there will also be indirect increases in related expenditures that will worsen fiscal sustainability. Such spending will range from operations and maintenance spending for aid-financed capital investments to increased public-sector pension commitments for the health care personnel hired under externally financed projects. Such recurrent cost burdens, which are unlikely to be fully financed by the external transfers—at least in the long run and possible even over the short term—will need to be offset by either an increase in revenue generation or a reduction in outlays in other areas.

### 8.5 ABSORPTIVE CAPACITY

The discussion above assumes that the aid is well spent and not wasted. However, it is clear that a large increase of this nature in both the financing and provision of health services is likely to run into logistical problems.<sup>12</sup> Studies show that large flows of project aid often overwhelm the management capacity of governments. It may be the case that the existing medical infrastructure will be unable to employ the additional resources efficiently. This could then lead to both wastage and congestion externalities. As such, this is likely to reduce the productivity of the expenditure. This would have two effects. First, the downside effects on the production

of tradable goods are less likely to be offset by improvements in competitiveness arising from increased human capital. Second, the growth effects are less likely to offset the deterioration in the sustainability position. In addition, poor absorptive capacity may well put future aid flows at risk if donors believe the resources they provide are not being used effectively.

## 8.6 APPROPRIATE POLICY RESPONSES

Given the concerns discussed above, it would be prudent to take a number of steps to insulate the economy from the potentially harmful effects of large external transfers to fund health care.

- Prepare the tradable sector for the likelihood of a diversion of resources away from the sector. Insofar as the government can increase productivity in the tradable goods sector—for example, by deregulation, privatization, or reductions in marginal tax rates—this could partially insulate the economy from the negative impact on the tradable sector.
- Aim to solve the moral hazard problems by establishing minimum levels of counterpart health care financing to be provided by recipient governments. Also, decisions to allocate resources should be based on the best results in the use of such funds rather than to the worst performers in terms of health care indicators.
- To reduce the uncertainty attached to aid, grants will need to be extended for several years to ensure that the long-run spending commitments are matched by a corresponding commitment from donors to finance such spending.
- Increase the flexibility of the budget to respond to aid shortfalls by pursuing prudent macro-fiscal policies, improving revenue administration, reducing earmarking, and lowering the nondiscretionary component of spending.
- To offset the worsened sustainability position, encourage simultaneous efforts at raising domestic revenue to replace the external funds in the medium term. This will provide for a health care system that can graduate from the need for foreign assistance.
- Gradually phase in any increase in health spending to allow implementation capacity to adjust and to ensure that external resources are used most productively. In addition, a portion of the aid budget itself should be devoted to a systematic programme of capacity building.

## NOTES

1. The *World health report 2000* also developed a six-dimensional objective function for the health system, based on objective utilitarian principles. Roberts et al. (forthcoming) developed their objective function based on standard economic practice, using subjective utilitarian principles, and differed from the *WHR* in four of the six dimensions.
2. Although the funding maybe inadequate, the public funds usually go towards the payment of the health workers regardless of their unsatisfactory services or whether there are supplies and drugs. This practice *de-facto* has created a public employment programme rather than a health delivery programme to meet patients' needs and demands.
3. There are exceptions where private nonprofit providers charge reasonable prices and deliver quality primary health care, such as the PROSALUD in Bolivia.
4. These findings are reported in several studies: Flug et al. (1998), Filmer and Pritchett (1997), Landau (1986), Gupta et al. (1999).
5. For further elaboration please consult Chu et al. (1995).
6. As samples and time periods differ, this number is not directly comparable with the expenditure on health listed in Table 3.1.
7. In this Report, the term *billion* is used throughout to mean a thousand million, as in US usage, rather than a million million.
8. This review included an assessment of 43 studies published in peer-reviewed journals, reports published in formal publication series of international organizations (such as WHO, ILO, UNICEF), internal unpublished documents of international organizations and academic institutions, and conference proceedings.
9. The CFA (Communaute Financiere Africaine or the African Financial Community) encompasses Benin, Burkina Faso, Cameroon, the Central African Republic, Chad, the Comoro Islands, the Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Guinea Bissau, Mali, Senegal, and Togo.
10. See for example, *Assessing aid: what works, what doesn't and why*, (Dollar and Pritchett, 1998), for a discussion of the fungibility of aid and McGillivray and Morrissey (2000) for a general review of the literature.
11. It is, however, not a settled matter that aid is more volatile. For example, Collier (1999) finds that aid is, on average, both more reliable than other revenue sources and also negatively correlated with other revenues (thus providing a stabilizing effect).
12. Kanbur, Sandler, and Morrison (1999), for example, note that gross flows of project aid often overwhelm the management capacity of governments.

## REFERENCES

- Abed G et al. Fiscal reforms in low-income countries—experience under IMF-supported programs. IMF Occasional Paper, Washington, DC, IMF, 1998: 160.
- Abel-Smith B. The rise and decline of the early HMOs: some international experiences. *Milbank Quarterly*, 1988, 66(4): 694–719.
- Abel-Smith B, Rawal P. Employer's willingness to pay: the case for compulsory health insurance in Tanzania. *Health-Policy and Planning*, 1994, 9(4): 409–418.
- Alailima P, Mohideen F. Health sector expenditure flows in Sri Lanka. *World Health Statistics Quarterly – Rapport Trimestriel de Statistiques Sanitaires Mondiales*, 1984, 37(4): 403–420.
- Alvarex M, Garret J, Lange P. Government partisanship, labor organizations and macroeconomic performance. *American Political Science Review*, 1991, 85: 534–556.
- Arhin-Tenkorang DC. The health card insurance scheme in Burundi: a social asset or a non-viable venture? *Social Science and Medicine*, 1994, 39(6): 861–870.
- Arhin-Tenkorang DC. Mobilizing resources for health: the case for user fees re-visited. Paper prepared for Working Group 3 of the Commission on Macroeconomics and Health (CMH), Geneva, WHO, 2000.
- Arhin-Tenkorang DC. Health insurance for the informal sector in Africa: design features, risk protection and resource mobilization. Report prepared for Working Group 3 of the Commission on Macroeconomics and Health (CMH), Geneva, WHO, 2001.
- Arrow KW. Uncertainty and the welfare economics of medical care. *American Economic Review*, 1963, 53(5): 940–973.
- Asian Development Bank (ADB). *Finance for the poor: microfinance development strategy*. Manila, Asian Development Bank, 2000.
- Atim C. *Contribution of mutual health organizations to financing, delivery, and access to health care. Synthesis of research in nine West and Central African countries*. Partnerships for Health Reform Project. Bethesda, MD, Abt Associates, Technical Report No. 18, 1998.
- Atkinson AB, Stiglitz JE. *Lectures on public economics*. Maidenhead, McGraw-Hill, 1980.
- Barer LM, Getzen TE, Stoddart GL (eds). *Health, health care and health economics: perspectives on distribution*. Chichester, West Sussex, England, John Wiley & Sons, 1998.
- Barnum H, Kutzin J. *Public hospitals in developing countries: resource use, cost, financing*. Washington, DC, World Bank, 1993.

- Barro R. Government spending in a simple model of endogenous growth. *Journal of Political Economy*, 1990, 98(5), Part 2 (October).
- Bates RH. *Markets and states in tropical Africa: the political basis of agricultural policies*. Berkeley: University of California Press, 1981.
- Bator, F. The anatomy of market failure. *Quarterly Journal of Economics*, 1958, 72(3): 351–379.
- Baumol WJ. *Economic theory and operations analysis*. New Jersey, Prentice-Hall, 1977.
- Bennett S, Creese A, Monasch R. *health insurance schemes for people outside formal sector employment*. ARA Paper No. 16. Division of Analysis, Research and Assessment. Geneva, World Health Organization, 1998.
- Berman P. *Comparative analysis of the results of the Latin American and Caribbean National Health Accounts Network*. Washington, DC, USAID, Partnerships for Health Reform, 1998.
- Berman P. Selective primary health care: is efficient sufficient? *Social Science and Medicine*, 1982, 16(10): 1054–1059.
- Berman P, Khan ME, eds. *Paying for India's health care*. New Delhi, Sage Publications, 1993.
- Bird R. *Tax policy and economic development*. Baltimore: Johns Hopkins University Press, 1991.
- Böhringer C, Rutherford T. Carbon taxes with exemptions in an open economy: a general equilibrium analysis of the German tax initiative. *Journal of Environmental Economics and Management*, 1997, 32(2): 189–203.
- Brown W, Churchill C. *Insurance provision in low-income communities. Part II. Initial lessons from micro-insurance experiments for the poor. micro-enterprise best practices*. Bethesda MD, Development Alternatives Inc, 2000.
- Carrin G, Desmet M, Basaza R. Social health insurance development in low-income developing countries: new roles for government and non-profit health insurance organisations. In: *Building social security: the challenge for privatization*. Geneva, International Social Security Association, 2001.
- Carrin G et al. *The impact of the degree of risk-sharing in health financing on health system attainment*. Background Working Paper prepared for Working Group 3 of the Commission on Macroeconomics and Health (CMH), Geneva, WHO, 2001.
- Castro-Leal F et al. Public spending on health care in Africa: do the poor benefit? *Bulletin of the World Health Organization*, 2000, 78(1): 66–74.
- Centre for Reviews and Dissemination (CRD). *Effective health care bulletin: hospital volume and health care outcomes, costs and patient access*. Nuffield Institute for Health, University of Leeds, and NHS Centre for Reviews and Dissemination, University of York, 1996.

- Chu K et al. *Unproductive expenditures: a pragmatic approach to policy analysis*. Washington, DC, IMF Fiscal Affairs Department, 1995.
- Claeson M et al. *Health, nutrition, and population sourcebook for the Poverty Reduction Strategy Paper*. Discussion Paper. Washington, DC, World Bank, 2001.
- Collier P. Aid dependency: a critique. *Journal of African Economies*, 1999, 8(4): 528–545.
- Congressional Budget Office. *Carbon charges as a response to global warming: the effects of taxing fossil fuels*. Washington, DC, CBO, 1990.
- Creese A. User charges for health care: a review of recent experience. *Health Policy and Planning*, 1991, 6: 4.
- Criel B, Van der Stuyft P, Van Lerbergher W. The Bwamanda hospital insurance scheme: effective for whom? A study of its impact on hospitalisation and utilisation patterns. *Social Science and Medicine* 1999; 48(7): 879–911.
- Dave P. Community and self-financing in voluntary health programmes in India. *Health Policy and Planning*, 1991, 6(1): 20–31.
- Davoodi H, Sachjapinan S. How useful are benefit incidence studies? forthcoming in the IMF Working Paper series. Washington, DC, International Monetary Fund.
- DeRoeck D et al. *Rural health services at Seguridad Social Campesino Facilitates: analyses of facility and household surveys*. Technical Report No. 13. Health Financing and Sustainability Project, Bethesda, MD, Abt Associates Inc., 1996.
- Desmet A, Chowdhury AQ, Islam K. Md. The potential for social mobilization in Bangladesh: the organization and functioning of two health insurance schemes. *Social Science and Medicine*, 1999, 48(7): 925–938.
- Diop F, Yazbeck A, Bitran R. The impact of alternative cost recovery schemes on access and equity in Niger. *Health Policy and Planning*, 1995, 10(3): 223–240.
- Dollar D, Pritchett L. *Assessing aid: what works, what doesn't and why*. Washington, DC, World Bank, Document No. 18295, 1998.
- Dordick G. *Something left to lose: personal relations and survival among New York's homeless*. Philadelphia, PA, Temple University Press, 1997.
- Dror D, Jacquier C. Microinsurance: extending health insurance to the excluded. *International Social Security Review*, 1999, 52(1):71–97.
- Dror D, Preker AS (eds). *Social re-insurance: a new approach to sustainable community health financing*. Washington, DC, World Bank/ILO, 2002.
- Dror D, Preker AS, Jakab M. Role of communities in combating social exclusion. In: Dror D, Preker AS, eds. *Social re-insurance: a new approach to sustainable community health financing*. Washington, DC, World Bank/ILO, 2002.
- Ersoy KE et al. Technical efficiencies of Turkish hospitals: DEA approach. *Journal of Medical Systems*, 1997, 21(2): 67–74.

- Escolano, J. International trade taxes. In: Shome P, ed. *Tax policy handbook*. Washington, DC, Fiscal Affairs Department, IMF, 1995.
- Evans DB et al. The comparative efficiency of national health systems in producing health: an analysis of 191 countries. WHO/EIP Discussion Paper No. 29. Geneva: WHO, 2000. (An abbreviated version of this analysis is forthcoming in the *British Medical Journal*.)
- Evans P. *Embedded autonomy: states and industrial transformation*. Princeton, NJ, Princeton University Press, 1995.
- Evans P. Government action, social capital and development: reviewing the evidence on synergy. *World Development*, 1996, 24(6): 1119–1132.
- Evans RG. *Strained mercy*. Toronto, Butterworth, 1984.
- Filmer D, Pritchett L. Child mortality and public spending on health: how much does money matter? World Bank Policy Research Working Paper No. 1864. Washington, DC, World Bank, 1997.
- Flug K et al. Investment in education: do economic volatility and credit constraints matter? *Journal of Development Economics*, 1998, 55: 465–481.
- Foltz A, Foltz WJ. The politics of health reform in Chad. In: Gertler P, van der Gaag J, eds. *The willingness to pay for medical care*. Baltimore, John Hopkins University Press, 1990.
- Foster G. Community development and primary health care: their conceptual similarities. *Medical Anthropology*, 1982, 6:183–195.
- Foster S. Supply and use of essential drugs in Sub-Saharan Africa: some issue and possible solutions. *Social Science and Medicine*, 1991, 23(11): 1201–1218.
- Gerdtham U-G et al. Internal markets and health care efficiency: a multiple-output stochastic frontier analysis. *Health Economics*, 1999, 8: 151–164.
- Gilson L. Management and health care reform in Sub-Saharan Africa. *Social Science and Medicine*, 1995, 40(5): 695–710.
- Granovetter M. The strength of weak ties. *American Journal of Sociology*, 1973, 78: 1360–1380.
- Grosh M. Administering targeted social programs in Latin America: From platitudes to practice. Washington, DC, World Bank Regional and Sectoral Studies, 1994.
- Grout PA, Jenkins A, Propper C. *Benchmarking and incentives in the NHS*. London, Office of Health Economics, 2000.
- Gruber J, Hanratty M. The labor-market effects of introducing national health insurance: evidence from Canada. *Journal of Business and Economic Statistics*, 1995, 13(2): 163–173.
- Grytten J, Rongen G. Efficiency in provision of public dental services in Norway. *Community Dentistry and Oral Epidemiology*, 2000, 28:170–176.

- Guhan S. Social security options for developing countries. *International Labour Review*, 1994, 133(1): 35–53.
- Gumber A. *Hedging the health of the poor: the case for community financing in India*. HNP Discussion Paper, Washington, DC, World Bank, 2001.
- Gumber A, Kulkarni V. Health insurance for informal sector: case study of Gujarat. *Economic and Political Weekly*, 2000: 3607–3613.
- Gupta S et al. Does higher government spending buy better results in education and health care? IMF Working Paper, Washington, DC, IMF, 1999, 99/21.
- Gupta S et al. Spending on health and education gaining on military spending in HIPC countries. *IMF Survey*, Washington DC, 4 June 2001: 194–196.
- Gupta S, Verhoeven M. The efficiency of government expenditure: experiences from Africa. *Journal of Policy Modeling*, 2001, 23(4): 433–467.
- Gwatkin D. Poverty and inequalities in health within developing countries: filling the information gap. In: Leon D, Walt G, eds. *Poverty, inequality, and health: an international perspective*. Oxford, Oxford University Press, 2000: 217–246.
- Hanratty M. Canadian national health insurance and infant health. *American Economic Review*, 1996, 86(1): 276–284.
- Harding A, Preker AS. *A framework for understanding organizational reforms in the hospital sector*, HNP Discussion Paper, Washington, DC, World Bank, 2000.
- Hemming R. Public expenditure and resource allocation. In: Chu K, Hemming R, eds. *Public expenditure handbook*. Washington, DC, IMF, 1991.
- Hemming R, Hewitt D. The distributional impact of public expenditure. In: Chu K, Hemming R, eds. *Public expenditure handbook*. Washington, DC, IMF, 1991.
- Holloway J, Lewis J, Mallory G. *Performance measurement and evaluation*. London, Sage, 1995.
- Holvad T, Hougaard JL. *Measuring technical input efficiency for similar production units: 80 Danish hospitals*. Firenze, European University Institute, 1993.
- Hsiao WC. The Chinese health care system: lessons for other nations. *Social Science and Medicine*, 1995, 41(8): 1047–1055.
- Hsiao WC. *What should macroeconomists know about health care policy? A primer*. Washington, DC, International Monetary Fund, Working Paper, 2000.
- Hsiao WC. *Unmet health needs of two billion: is community financing a solution?* Preliminary draft Background Paper for the Commission on Macroeconomics and Health (CMH), Geneva, WHO, 2001.
- International Labour Organisation (ILO). *World Labour Report: Income Security and Social Protection in a Changing World*. Geneva, ILO, 2000a.

- International Labour Organisation (ILO). *Mutuelles de santé en Afrique: Caractéristiques et mise en place: Manuel de formateurs*. Programme Stratégies et Technique contre l'Exclusion sociale et la Pauvreté, Département de Sécurité Sociale (STEP), Geneva: ILO, 2000b.
- International Labour Organisation (ILO). *Mutuelles de santé et associations de micro-entrepreneurs—Guide*. Programme Stratégies et Technique contre l'Exclusion Sociale et la Pauvreté, Département de Sécurité Sociale (STEP), Small Enterprise Development Programme (SEED), Geneva, ILO, 2001.
- International Monetary Fund (IMF). *International financial statistics*. Washington, DC, IMF, 2000a.
- International Monetary Fund (IMF). *Government finance statistics*. Washington, DC, IMF, 2000b.
- International Monetary Fund (IMF), OECD, UN, World Bank. *A better world for all: progress towards the international development goals*. A report published by the IMF, the OECD, the United Nations, and the World Bank. Paris, New York, and Washington, DC, IMF, OECD, UN, and World Bank, 26 June 2000.
- Jakab M, Krishnan C. *Community involvement in health care: a survey of the literature on the impact, strengths and weaknesses*. Report prepared for Working Group 3 of the Commission on Macroeconomics and Health (CMH), Geneva, WHO, 2001.
- Jakab M et al. *Social inclusion and financial protection through community financing: initial results from five household surveys*. Report prepared for Working Group 3 of the Commission on Macroeconomics and Health (CMH), Geneva, WHO, 2001.
- Jamison, D. *Strategic issues in financing health in middle and high income countries*. Report prepared for Working Group 3 of the Commission on Macroeconomics and Health (CMH), Geneva, WHO, 2002 (in press).
- Jönsson B, Musgrove P. Government financing of health care. In: Schieber GJ, ed. *Innovations in health care financing: proceedings of a World Bank conference, 10–11 March 1997*. Washington, DC, World Bank, 1997.
- Jütting J. *Do mutual health insurance schemes improve the access to health care? Preliminary results from a household survey in rural Senegal*. International Conference: Health systems financing in low-income African and Asian countries, November 2000. Clermont-Ferrand, France.
- Jütting J. *The impact of health insurance on the access to health care and financial protection in rural areas of Senegal*. HNP Discussion Paper, Washington, DC, World Bank, 2001.
- Kanbur R, Sandler T, Morrison K. *The future of development assistance: common pools and international public goods*. Washington, DC, Overseas Development Council, 1999.

- Landau, D. Government and economic growth in the less developed countries: an empirical study for 1960–1980. *Economic Development and Cultural Change*, 1986, 35(October): 35–75.
- Liebenstein H. Allocative efficiency vs. “X-efficiency”. *American Economic Review*, 1966, 56: 392–415.
- Litvack JI, Bodart CI. User fees plus quality equals improved access to health care: results of a field experiment in Cameroon. *Social Science and Medicine*, 1992, 37(3): 369–383.
- Liu Y et al. eds. Inefficiency in China’s rural health care: a stochastic frontier approach. In: *The China network of training and research in health economics and finance: The study of health care financing in China’s poor rural areas*. Beijing, The People’s Publishing House, 1998.
- Londoño J, Frenk J. Structured pluralism: towards an innovative model for health system reform in Latin America. *Health Policy*, 1997, 41: 1–39.
- Mabay N et al. *Argument in the greenhouse*. London, Routledge, 1997.
- Marmor TR, Bridges A, Hoffman WL. Comparative politics and health policies: notes on benefits, costs, limits. In: Marmor TR, ed. *Political analysis and medical care*. New York, Cambridge University Press, 1983: 45–57.
- McGillivray M, Morrissey O. Aid fungibility in assessing aid: red herring or true concern. *Journal of International Development*, 2000, 12 (April): 413–428.
- McGuire A. The measurement of hospital efficiency. *Social Science and Medicine*, 1987, 24(9): 719–724.
- McPake B. User charges for health services in developing countries: a review of the economic literature. *Social Science Medical Journal*, 1993, 36: 11.
- McPake B, Hanson K, Mills A. Community financing of health care in Africa: an evaluation of the Bamako Initiative. *Social Science and Medicine*, 1993, 3(11): 1383–1395.
- Midgely J, Tracey MB. *Challenges to social security: an international exploration*. Westport, CT, Auburn House, 1996.
- Mills A. The economics of hospitals in developing countries. Part I: expenditure patterns. *Health Policy and Planning*, 1990, 5(2): 107–117.
- Mills A, Hongoro C, Broomberg J. Improving the efficiency of district hospitals: is contracting an option? *Tropical Medicine and International Health*, 1997, 2: 116–126.
- Mills A, et al. What can be done about the private health sector in low-income countries? *World Health Organization Bulletin*, 2002, 80(4): 325–330.
- Musau S. *Community-based health insurance: experiences and lessons learned from east and southern Africa*. Partnerships for Health Reform Project, Technical Report No. 34. Bethesda, MD, Abt Associates, 1999.

- Musgrove P. Public and private roles in health: theory and financing patterns. World Bank Discussion Paper No. 339. Washington, DC, World Bank, 1996.
- Musgrave RA, Musgrave PB. *Public finance in theory and practice*. New York, McGraw-Hill, 1984.
- Narayan D. Bonds and bridges: social capital and poverty. Policy Research Working Paper 2167. Poverty Reduction and Economic Management Network, Washington, DC, World Bank, 1999.
- Navarro VA. Critique of the ideological and political position of the Brandt Report and the Alma Ata declaration. *International Journal of Health Services*, 1984, 2 (14): 159–172.
- Newbrander, W, Collins D, Gilson L. *Ensuring equal access to health services: user fee systems and the poor*. Boston, Management Sciences for Health, 2001.
- Normand C, Weber A. *Social health insurance: a guidebook for planning*. Geneva, World Health Organization and International Labor Office, 1994.
- North DC. *Institutions, institutional change, and economic performance*. New York, Cambridge University Press, 1990.
- Nyman JA, Bricker DL, Link, D. Technical efficiency in nursing homes. *Medical Care*, 1990, 28(6): 541–551.
- Okun AM. *Equality and efficiency, the big tradeoff*. Washington, DC: The Brookings Institution, 1975.
- Organisation for Economic Co-operation and Development (OECD). *Taxing profits in a global economy; domestic and international issues*. Paris, OECD, 1991.
- Organisation for Economic Co-operation and Development (OECD). *The reform of health systems: a review of seventeen OECD countries*. Paris, OECD, 1994a.
- Organisation for Economic Co-operation and Development (OECD). *Taxation and investment flows: an exchange of experiences between the OECD and the dynamic Asian economies*. Paris: OECD, 1994b.
- Organisation for Economic Co-operation and Development (OECD). *Global warming, economic dimensions and policy response*. Paris, OECD, 1995a.
- Organisation for Economic Co-operation and Development (OECD). *Climate change, economic instruments and income distribution*. Paris, OECD, 1995b.
- Otero M, Rhyne E, eds. *The new world of microenterprise finance: building healthy financial institutions for the poor*. West Hartford, CT, Kumarian Press, 1994.
- Ozcan YA. Physician benchmarking: measuring variation in practice behaviour in treatment of otitis media. *Health Care Management Science*, 1998, 1: 5–17.
- Peters DH et al. *Better health systems for India's poor: findings, analysis and options*. Human Development Network, HNP Series. Washington, DC, World Bank, 2001. (draft).

- Piancastelli M. *Measuring the tax effort of developed and developing countries*. Working Paper, University of Kent at Canterbury, October, 2000.
- Platteau JP. Behind the market stage where real societies exist. Parts I and II. *Journal of Development Studies*, 1994, 30: 533–577; 753–817.
- Poullier J, Hernández P. Estimates of National Health Accounts (NHA) for 1997. WHO/EIP Discussion Paper No. 27. Geneva, WHO, 2000.
- Potter B, Diamond J. *Tax administration handbook*. Washington, DC, IMF, 1999.
- Pradhan M, Prescott N. *Social risk management for medical care in Indonesia*. International Conference on Health Systems Financing in Low-Income African and Asian Countries, CERDI, November 2000. Clermont-Ferrand, France.
- Preker AS. The introduction of universal access to health care in the OECD: lessons for development countries. In: Nitayarumphong S, Mills A, eds. *Achieving universal coverage of health care*. Bangkok, Ministry of Public Health, 1998: 103–124.
- Preker AS, Harding A, Travis P. Make or buy decisions in the production of health care goods and services: new insights from institutional economics and organizational theory. *Bulletin of the World Health Organization*, 2000, 78(6): 779–790.
- Preker AS, Jakab, M. Role of communities in providing financial protection against the cost of illness. In: Dror D, Preker AS, eds. *Social re-insurance: improved risk sharing for low-income and excluded groups*. Washington, DC, World Bank/ILO, 2001.
- Preker AS, M Jakab, and M Schneider. Health financing reform in Central and Easter Europe and the Former Soviet. In: Mossialos E, Figueras J, Dixon A, eds. *Funding health care: options for Europe*. Buckingham: Open University Press, 2002.
- Preker AS, Langenbrunner J, Jakab M. Development challenges in health care financing. In: Dror D, Preker AS, eds. *Social re-insurance: a new approach to sustainable community health financing*. Washington, DC, World Bank/ILO, 2002.
- Preker AS, Langenbrunner J, Suzuki E. *The global expenditure gap: securing financial protection and access to health care for the poor*. Report prepared for Working Group 3 of the Commission on Macroeconomics and Health (CMH), Geneva, WHO, 2001.
- Preker AS et al. *Health care financing for rural and low-income populations: the role of communities in resource mobilization and risk sharing: a synthesis of the community financing experience*. Background Report prepared for the Commission on Macroeconomics and Health (CMH). Geneva, WHO, 2001a.
- Preker AS et al. *Resource Allocation and Purchasing (RAP) arrangements that benefit the poor and excluded groups*. HNP Discussion Paper, Washington, DC, World Bank, 2001b.

- Preker AS et al. Effectiveness of community health financing in meeting the cost of illness. *Bulletin of the World Health Organization*, 2002, 8(2): 143–150.
- Radhakrishna R et al. India's public distribution system: a national and international perspective. World Bank Discussion Paper, Washington, DC, World Bank, 1997: WDP 380.
- Ranson K. *The impact of SEWA's medical insurance fund on hospital utilization and expenditure in India*. HNP Discussion Paper, Washington, DC, World Bank, 2001.
- Reich, M.R. The political economy of health transitions in the third world. In: Chen LC, Kleinman A, Ware N, eds. *Health and social change in international perspective*. Boston, Harvard School of Public Health, 1994.
- Roberts M et al. *Getting health reform right*. New York, Oxford University Press, forthcoming.
- Rosen, H. *Public finance*. Chicago, Irwin, 1995: 314.
- Rosenman R, Siddarthan K, Ahern M. Output efficiency of health maintenance organizations in Florida. Unpublished manuscript.
- Rosko MD, Chilingirian JA. Estimating hospital inefficiency: does case mix matter? *Journal of Medical Systems*, 1999, 24(2): 57–71.
- Ruger JP, Jamison DT, Bloom DE. Health and the economy. In: Merson MH, Black RE, Mills AJ, eds. *International public health*. Gaithersburg, MD, Aspen, 2001: 617–666.
- Saxenian H et al. *Financing health care: issues and options for China*. Washington, DC, World Bank, 1997.
- Schieber G, Maeda A. A curmudgeon's guide to health care financing in developing countries. In: Schieber G, ed. *Innovations in health care financing*. Proceedings of a World Bank Conference, 10–11 March 1997. Washington DC, World Bank, 1997.
- Schneider P, Diop F. *Synopsis of results on the impact of community-based health insurance (CBHI) on financial accessibility to health care in Rwanda*. HNP Discussion Paper, Washington, DC, World Bank, September 2001.
- Shah A, Larsen B. *Carbon taxes, the greenhouse effect and developing countries*. Policy Research Working Papers No. 957, Washington, DC, World Bank, 1992.
- Shome P, ed. *Tax policy handbook*. Washington, DC, Fiscal Affairs Department, International Monetary Fund, 1995.
- Somanathan A et al. *Operating efficiency in public health sector facilities in Sri Lanka: measurement and institutional determinants of performance*. Small Applied Research Paper No. 12. Partnerships for Health Reform Project. Bethesda, MD, 2000.

- Soucat A et al. Health seeking behavior and household expenditures in Benin and Guinea: the equity implications of the Bamako Initiative. *International Journal of Health Planning and Management*, 1997, 12(Supplement 1): S137–S163.
- Street A, Haycock J. The economic consequences of reorganizing hospital services in Bishkek, Kyrgyzstan. *Health Economics*, 1999, 8: 53–64.
- Supakankunti S. Determinants for demand for health card in Thailand. HNP Discussion Paper. Washington, DC, World Bank, 2001.
- Tait A. *Value-added tax: international practice and problems*. International Monetary Fund, 1988: Chapter 2.
- Tait A. et al. International comparisons of taxation for selected developing countries. IMF Staff Papers 26, No. 1, March 1979.
- Tanzi V, Zee H. *Tax policy for emerging markets: developing countries*. IMF Working Paper, Fiscal Affairs Department, March 2000.
- Tobin J. A proposal for international monetary reform. *Eastern Economic Journal*, 1978, 4: 963–959.
- Turnovsky S. Optimal tax, debt, and expenditure policies in a growing economy. *Journal of Public Economics*, 1996, 60: 1.
- Tyler LH, Ozcan YA, Wogen SE. Mental health case management and technical efficiency. *Journal of Medical Systems*, 1995, 19(5): 413–423.
- Valdmanis VG. Ownership and technical efficiency of hospitals. *Medical Care*, 1990, 28(6): 552–561.
- Van Doorslaer E, Wagstaff A, Rutten F, eds. *Equity in the finance and delivery of health care: an international perspective*. Oxford, Oxford Medical Publications, 1993.
- Van Ginneken W. Social security for the informal sector: new challenges for the developing countries. *International Social Security Review*, 1999, 52: 1.
- Vogel RJ. *Health insurance in sub-Saharan Africa*. Washington, DC, African Technical Department, Working Paper Series, World Bank, August 1990: 476.
- Wagstaff A. Measuring equity in health care financing: reflections on and alternatives to the World Health Organization's fairness of financing index. Washington, DC, Development Research Group and Human Development Network, World Bank, unpublished discussion paper, 2001.
- Wagstaff AN, Watanabe N, van Doorslaer E. *Impoverishment, insurance, and health care payments*. Discussion Paper, Washington, DC, World Bank, forthcoming.
- White KR, Ozcan YA. Church ownership and hospital efficiency. *Hospital and Health Services Administration*, 1996, 4(3): 297–310.
- Williamson OE. *The economics of discretionary behaviour*. New Jersey, Prentice-Hall, 1963.

- Woolcock M. Social capital and economic development: towards a theoretical synthesis and policy framework. *Theory and Society*, 1998, 27: 151–208.
- Woolcock M, Narayan D. Social capital: implications for development theory, research, and policy. *World Bank Research Observer*, 2000, 15(2): 225–249.
- World Bank. *Financing health services in developing countries: an agenda for reform*. Washington, DC, World Bank, 1987.
- World Bank. *World development report 1993: investing in health*. New York and Oxford, Oxford University Press for the World Bank, 1993.
- World Bank. *Ethiopia: public expenditure policy for transition report*. Washington, DC, World Bank, 1994, 12992-ET.
- World Bank. *World development report. Workers in an integrating world*. Washington, DC, World Bank, 1995.
- World Bank. *Sector strategy for HNP*. Washington, DC, World Bank, 1997.
- World Bank. *India's future health system: issues and options*. Health, Nutrition and Population Sector Unit, India. Washington, DC, World Bank, 1 March 2001.
- World Health Organization (WHO). *World health report 1999: Making a difference*. Geneva, WHO, 1999.
- World Health Organization (WHO). *World health report 2000 - Health systems: improving performance*. Geneva, WHO, 2000a.
- World Health Organization (WHO; Rafael Lozano). Mortality regionalization in the world. Geneva, WHO, 2000b (unpublished note).
- Zeller M, Sharma M. Many borrow, more save, and all insure: implications for food and micro-finance policy. *Food Policy*, 2000, 25: 143–167.
- Zere E, McIntyre D, Addison T. Technical efficiency and productivity of public sector hospitals in three South African provinces. Paper submitted to *South African Journal of Economics*.
- Ziemek S, Jutting J. Mutual insurance schemes and social protection. STEP Research Group on Civil Society and Social Economy. Geneva, International Labour Organisation, 2000.

## ANNEX I LIST OF ACRONYMS

ADB	Asian Development Bank
CFA	Communaute Financiere Africaine
CIT	Corporate income tax
CMH	Commission on Macroeconomics and Health
DALE	Disability-adjusted life expectancy
DHS	Demographic and Health Surveys
GPs	General practitioners
HIPC	Heavily Indebted Poor Countries
IECS	Index of equality of child survival
IFFC	Index of fairness of financial contribution
ILO	International Labour Organisation
IMF	International Monetary Fund
IR	Index of level of responsiveness
IRD	Index of distribution of responsiveness
LSMS	Living Standard Measurement Surveys
NGOs	Nongovernmental organizations
NHA	National Health Accounts
NHI	National Health Insurance
ODA	Overseas development assistance
OECD	Organisation for Economic Co-operation and Development
O/I	Output per unit of total input
PEM	Public expenditure management
PHE%	Share of public health expenditure out of total health expenditure
PIT	Personal income tax
PRS	Poverty reduction strategy
PRSP	Poverty Reduction Strategy Paper
VAT	Value added tax
WHO	World Health Organization
WTP	Willingness-to-pay



## ANNEX 2 BACKGROUND PAPERS PREPARED FOR WORKING GROUP 3

- Paper 1:** Mobilizing Resources for Health: The Case for User Fees Revisited (Arhin-Tenkorang DC)
- Paper 2:** Health Insurance for the Informal Sector in Africa: Design Features, Risk Protection and Resource Mobilization (Arhin-Tenkorang DC)
- Paper 3:** The Debt Relief Initiative and Public Health Spending in Heavily Indebted Poor Countries (HIPC) (Gupta S, Clements B, Guin-Siu MT, Leruth L)
- Paper 4:** The Impact of the Degree of Risk-Sharing in Health Financing on Health System Attainment (Carrin G, Zeram dini R, Musgrove P, Poullier J-P, Valentine N, Xu, K)
- Paper 5:** Financing Health Systems through Efficiency Gains (Hensher M)
- Paper 6:** Unmet Health Needs of Two Billion: Is Community Financing a Solution? (Hsiao WC)
- Paper 7:** A Strategic Framework in Mobilizing Domestic Resources for Health (Hsiao WC)
- Paper 8:** Strategic Issues in Financing Health in Middle and High Income Countries (Jamison D)
- Paper 9:** Community Involvement in Health Care Financing: A Survey of the Literature on Impact, Strengths and Weaknesses (Jakab M, Krishnan C)
- Paper 10:** Social Inclusion and Financial Protection Through Community Financing: Initial Results from Five Household Surveys (Jakab M, Preker, AS, Krishnan C, Schneider P, Diop F, Jutting J, Gumber A, Ranson K, Supakankunti S)
- Paper 11:** A Summary Description of Health Financing in WHO Member States (Musgrove P, Zeram dini R)
- Paper 12:** Role of Community in Resource Mobilization and Risk Sharing: A Synthesis Report (Preker AS, Carrin G, Dror D, Jakab M, Hsiao W, Arhin-Tenkorang D)
- Paper 13:** The Global Expenditure Gap in Securing Financial Protection and Access to Health Care for the Poor (Preker AS, Langenbrunner J, Suzuki E)
- Paper 14:** Mobilisation of Domestic Resources for Health through Taxation: A Summary Survey (Tait AA)



## ANNEX 3 LIST OF TABLES, FIGURES, AND BOXES

### TABLES

Table 1.1 Multiple objectives of a health system

Table 1.2 Evolution of health care financing and provision systems at various stages of economic development

Table 1.3 The incidence of public health spending in selected countries (in order of the poorest received the highest share of subsidy)

Table 2.1 National Health Accounts estimates for 191 WHO Member States for 1997, revised data as of 31 May 2001

Table 2.2 Countries grouped by WHO Region, mortality stratum, and GDP per capita

Table 2.3 Consolidated and budgetary central government expenditure by function, as shares (per cent) of GDP for 56 IMF Member Countries grouped by WHO Region, mortality stratum, and GDP per capita, 1997–1998

Table 3.1 Taxation as a percentage of GDP

Table 3.2 Central government expenditures for selected countries, 1990–1999 (weighted by GDP as percentage)

Table 3.3 Central government expenditures for selected countries, 1997–1998 (unweighted averages as percentage)

Table 4.1 Potential value added by types of community-financing schemes

Table 4.2 Determinants of joining community-financing schemes

Table 4.3 Determinants of utilization and out-of-pocket expenditure patterns

Table 7.1 Why firms don't maximize profit or minimize costs

Table 7.2 Inefficiency estimates from developing and middle-income countries

Table 7.3 Inefficiency estimates from developed countries

### FIGURES

Figure 1.1 Relationships between financing instruments and goals

Figure 2.1 Total expenditure on health as per cent of GDP versus GDP per capita (191 countries)

Figure 2.2 Out-of-pocket expenditure as per cent of total health expenditure versus GDP, per capita (191 countries)

Figure 2.3 Public expenditure as per cent of total health expenditure versus GDP per capita (191 countries)

Figure 2.4: Tax-funded and other public expenditure as per cent of public expenditure on health versus GDP per capita (191 countries)

Figure 2.5 Hypothesized needs and actual spending for an essential package of health services versus GDP per capita

Figure 4.1 The pro-rich bias of public subsidies in India and other low-income countries

Figure 4.2 PRSP framework to assess effects of policies on outcomes

Figure 4.3 Recurrent costs from prepayment

Figure 4.4 How admission to hospital impoverishes in selected Indian states

Figure 4.5 Enrolment rates according to ability to pay

Figure 4.6 Stages of financial protection

Figure 5.1 Direct economic impact of the health system

Figure 5.2 Alternatives for moving towards prepaid health services

Figure 5.3 Who bears the risk? First-, second-, and third-party payers

Figure 6.1 HIPC debt relief and health and education spending (per cent of GDP)

Figure 6.2 Total revenue, total spending, and spending on health in HIPCs that have reached the decision point (per cent of GDP)

Figure 6.3 Annual percentage change in health spending and social indicators, 1985–1999

Figure 6.4 Benefit incidence of public spending on health care in HIPCs (percentage of total spending)

Figure 7.1 Decision tree for identifying potential technical and efficiency gains

## BOXES

Box 3.1 Earmarking: for and against

Box 4.1 Revenue mobilization

Box 4.2 Strengths of community-financing schemes

Box 4.3 Weaknesses of community-financing schemes

Box 5.1 Macroeconomic and health benefits of universal mandatory health insurance: the Canadian experience

Box 5.2 Public purchasing of private hospital services in southern Africa

Box 6.1 Health care measures included in poverty reduction strategies

Box 7.1 Factors likely to have an impact on feasibility of efficiency improvements

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