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Financing Health Services in Developing Countries: An Agenda for Reform

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EXECUTIVE SUMMARY

Developing countries have achieved remarkable reductions in morbidity and mortality over the last 30 years. But continuing gains depend largely on the capacity of health systems to deliver basic types of services and information to households that are often dispersed and poor. At the same time, rising incomes, aging populations, and urbanization are increasing the demand for conventional hospital and physician-based services. These competing needs have put tremendous pressures on developing country health systems, at a time when public spending in general cannot easily be increased, and indeed in many countries must be curtailed.

In most developing countries, public spending in all sectors grew rapidly in the 1960s and 1970s. But slow economic growth and record budget deficits in the 1980s have forced reductions in public spending; public spending on health has increased more slowly since 1980 and in some countries has declined on a per capita basis. A case certainly could be made for more public spending on health in developing countries. Public and private spending together in developing countries is on average less than 5 percent of that spent in developed countries; even were this money spent as cost-effectively as possible, it would probably be insufficient to meet critical health needs. But in most countries, the current environment of general budget stringency makes it difficult to argue for more public spending. For the foreseeable future, government efforts to improve health are unlikely to come from tax or debt-financed increases in public spending, or from reallocations of public expenditures from other sectors, even where such increases or reallocations would be economically as well as socially justified.

What can be done? This paper proposes an alternative approach to financing health care. Even as governments continue to grapple with the questions of the appropriate level of funding for health and the appropriate allocation of total government resources to health, this alternative approach deserves consideration. Indeed this approach makes sense even in countries where the overall budget problem is not severe.

This approach can be simply stated. It is to reduce government responsibility for paying for those kinds of health services for which the benefits to society as a whole (as opposed to direct benefits to the users of the service) are low, freeing government (or public) resources to pay for those services for which benefits to society as a whole are high. It is to relieve government of the burden of spending public resources on health care for the rich, freeing public resources for more spending for the poor.¹

¹The categories of "rich" and "poor" need to be defined in each country and will depend on a country's income structure and social objectives.

Individuals are generally willing to pay for direct, largely curative care from which the benefits to themselves and their families are obvious. Those who have sufficient income to do so should pay for these services. The financing and provision of these "private" type health services (benefitting mainly the direct consumer) should be shifted to a combination of the nongovernment sector and a public sector reorganized to be more financially self-sufficient. Such a shift would increase the public resources available for those types of health services which are "public goods," currently underfunded health programs such as immunizations, control of vector-borne diseases, sanitary waste disposal, health education and, in some circumstances, prenatal and maternal care, including family planning (see Box 1). The benefits of these largely preventive programs accrue to communities as a whole as well as to individuals and their families. They will not willingly be paid for by individuals, and should be the responsibility of the government. The shift to payment for most curative care, whether provided by the government or nongovernment sector, by those who receive the care would also increase the public resources available for government provision of basic curative care and referral for the poor, who currently have only limited access to services of this nature.

<p><u>Box 1</u> Private and Public Benefits of Health Care [Attached at end of Chapter]</p>

Health Sector Problems

The characteristics and performance of the health sector vary tremendously among developing countries. But for most developing countries, the overall structure of the sector and its performance can be described in terms of three main problems. This paper argues that each of these problems is due in part to the efforts of governments to cover the full costs of health care for everyone from general public revenues. The three problems are:

1. An allocation problem: Insufficient spending on cost-effective health activities. Current government spending, even were it better allocated, would alone be insufficient to fully finance for everyone a minimum package of cost-effective health activities, including both the truly "public" health programs noted above and basic curative care and referral. Though nongovernment spending on health is substantial, not enough of it goes for these basic cost-effective health services. The result: Growth of important health activities is slowed despite great need and fast-growing populations, and the apparent willingness of households to pay at least some of the costs of health care.
2. An internal efficiency problem: Inefficient public programs. Nonsalary recurrent expenditures, for drugs, fuel and maintenance, are chronically underfunded, often reducing dramatically the effectiveness of health staff. Many physicians cannot accommodate their patient loads, yet other trained staff are not productively employed. Lower-level facilities are underused while central

outpatient clinics and hospitals are overcrowded. Logistical problems are pervasive in the distribution of services, equipment, and drugs. In government health services, quality is often low; clients face unconcerned or harried personnel, shortages of drugs, and deteriorating buildings and equipment.

3. An equity problem: Inequitable distribution of benefits from health services. Investment in expensive modern technologies to serve the few continues to grow while simple low-cost interventions for the masses are underfunded. The better-off in most countries have better access both to nongovernment services, because they can afford them, and to government services, because they live in urban areas and know how to use the system. The rural poor benefit little from tax-funded subsidies to urban hospitals, yet often pay high prices for drugs and traditional care in the nongovernment sector.

Obviously these problems are not solely attributable to the approach governments have taken to financing health. Nor will change in approaches to financing health alone solve these problems. In the short run, for example, change in the way resources are mobilized will not in and of itself correct gross misallocation of health resources between high-cost hospital-based care and low-cost basic health services. Change in financing will not eliminate the need to improve management, administration, training and supervision in the public delivery of health services. Similarly, in its work on health, the Bank is concerned not only with financing but with a wide array of issues associated with the design of sustainable and effective health programs. (A World Bank policy paper published in 1980, Health: Sector Policy Paper, deals with the health sector as a whole.) Concentration on financing in this paper by no means reflects diminution of concern with the full range of issues. It does reflect belief that financing reforms deserve serious consideration as one part of an overall renewed effort to improve the health status of developing country populations.

Four Policy Reforms

A set of four policies for health financing is proposed below. These four policies constitute an agenda for reform; we argue that in virtually all countries this agenda ought to be carefully considered. The four policies are best thought of as a package; they are closely related and mutually reinforce each other. Most countries could benefit from adopting only some parts of the package, and some countries might wish to move more quickly on some parts than on others. But in the long run, because the policies are complementary, all four merit consideration.

1. Charging users of government health facilities. Institute charges at government facilities, especially for drugs and for curative care. These will increase resources available to the government health sector, allowing more spending on underfunded programs, encouraging improved quality and efficiency, and increasing access for the poor. Use differential fees to protect the poor. The

poor should be the major beneficiaries of expanding resources for and improved efficiency in the government sector.

Some countries have had user fees for decades, and some others, particularly in Africa, are now beginning to introduce them. But the more common approach to health care provision in developing countries has been to treat health care as a right of the citizenry and to attempt to provide free services to everyone. This approach does not usually work. It prevents the government health system from collecting revenues that many patients are both able and willing to pay. Thus the entire cost of health care must be financed through frequently overburdened tax systems. It encourages clients to use high-cost hospital services when their needs could be addressed at lower levels of the system. It deprives health workers in government facilities of feedback on their success in satisfying consumers' needs. It makes it impossible to reduce subsidies to the rich by charging for certain services, or to improve subsidies to the poor by expanding others.

In the short run, that is as soon as administrative mechanisms can be put in place, countries should consider instituting modest charges, focussing initially on charges for drugs and other supplies, and for private rooms in government hospitals. Where the current price is zero, even modest increases in charges could generate revenues covering 15-20 percent of most countries' operating budgets for health care--enough to cover a substantial part of the costs of currently underfunded nonsalary inputs such as drugs, fuel and building maintenance. By "modest increases" is meant amounts which would constitute, even for poor households, 1 percent or less of annual income, assuming four "sick" visits per year to a government health post.

In the longer run, user charges provide a way not just to raise revenue but to improve the use of government resources. Curative services, most of which are "private goods," currently account for 70 to 85 percent of all developing country health expenditures, and probably 60 percent or more of government expenditures on health. Over a period of years, once mechanisms to protect the poor are in place (along with insurance systems to cover catastrophic costs for all households), consideration should be given to increasing charges for such services to levels that reflect the cost of providing them. This would free resources equivalent to perhaps 60 percent of current government expenditures on health for reallocation to basic preventive programs and first-level curative care for the poor. (At the same time, most preventive programs should remain free of charges and be financed directly by government.)

Capturing the benefits of a policy of user charges requires attention to three complementary steps by government. First, user charges will not work unless access to and quality of services are reasonable; if they are not, the problem of underutilization discussed below will only be exacerbated. Second, user charges will not contribute to improved overall allocation of government health spending unless the freed revenues are actually funneled into the two activities mentioned above: underfunded "public good" health programs, and an increase in the number and quality of facilities to serve the poor. This redirection of freed resources requires

a strong political commitment. Third, the poor who cannot afford new or higher charges must somehow be protected.

How can the poor be protected? Lower or even zero charges in clinics located in urban slums and in rural areas are a simple, practical step. Combined with higher charges for hospital care, these would not only protect the poor, but would improve the targeting of existing government health spending. Another option is issuance of vouchers to the poor, based on certification of poor households by local community leaders (a practice which appears to work well in Ethiopia). Other options to protect the poor include allowing staff discretion in collecting charges (though this is difficult to do in the government sector), or in middle-income countries the use of means tests (which often already exist for other programs). Finally, in a well-functioning system of referral (in which patients enter the system at a low cost lower level facility and, only if they cannot be treated there, are referred for more complicated care to a higher level facility), a schedule of low or even zero fees at the lower level, and referrals at no additional cost, also provides protection for the poor. The most appropriate option will depend on each country's situation; experimentation with different approaches is likely to be required.

2. Providing insurance or other risk coverage. Encourage well-designed health insurance programs to help mobilize resources for the health sector while simultaneously protecting households from large financial losses. A modest level of cost recovery is possible without insurance. But in the long run, insurance is necessary to relieve the government budget of the high costs of expensive curative care; governments cannot raise government hospital charges close to costs until insurance is widely available.

Insurance programs cover only a small portion of low-income households in most developing countries, especially in Africa and South Asia. Outside of China, where the majority of urban residents are insured, no more than 15 percent of the people in the low-income developing countries take part in any form of risk coverage scheme (other than free public health care provided with tax revenues). Most of these are covered under government-sponsored social insurance plans in the middle-income countries of Latin America and Asia. Private insurance, prepaid plans and employer-sponsored coverage are all still relatively rare.

A starting point for insurance in most low-income countries is to make coverage (whether provided by government or by the nongovernment sector) compulsory for employees in the formal sector. Then at least the relatively better-off will be paying the costs of their own care. A few low-income countries and most of the middle-income countries in Latin America and Asia have already taken this step, often through payroll taxes to fund social insurance that covers health.

Insurance programs in industrialized countries and in Latin America have undoubtedly contributed to rising health care costs. When schemes cover most or all costs, and patients and health providers perceive care as

free, some unnecessary visits and unnecessary procedures are likely, leading to escalating costs in the system as a whole. To avoid such escalation, compulsory insurance plans in low-income countries should avoid covering small, predictable costs (e.g., for low-cost curative care); they should cover only costs that for an individual might be termed "catastrophic." (Where practicable, the definition of the catastrophic expenditure level can be related to household income.) Cost escalation in reimbursable systems will also be less likely if consumers pay an entrance fee (or deductible) and a co-payment for each illness, and if there is competition among insurance providers. Without effective competition, insurance providers will have little incentive to keep costs and premiums low, and higher costs will be passed through in the form of higher wage bills and higher consumer prices.

Avoiding cost escalation in government-run insurance programs is especially critical to avoid a related problem: political pressure to subsidize the insurance system from general tax revenues--which, if it occurs, makes the insurance program a benefit for the better off, paid for in part by the poor.

3. Using nongovernment resources effectively. Encourage the nongovernment sector (including nonprofit groups, private physicians, pharmacists, and other health practitioners) to provide health services for which consumers are willing to pay, allowing the government to focus its resources on programs that benefit whole communities rather than particular individuals.

Government is an important, but by no means the sole provider of health services in developing countries. Religious missions and other nonprofit groups, independent physicians and pharmacists and traditional healers and midwives are all active, and direct payments to these providers account for up to half of all health spending in many countries. There is no "correct" size of this nongovernment sector compared with government; the relative roles of the government and nongovernment sectors are bound to vary among countries. However, governments reduce their own options for expanding access to health when they actively discourage nongovernment suppliers, or fail to seek efficient ways to encourage them.

Community run and privately managed cooperative health plans should be encouraged. Capitalizing such plans, providing temporary subsidies, and providing administrative support should be considered. Any prohibitions or restrictions on nongovernment providers should be reviewed. The removal of requirements for unnecessary paper work and the reduction of regulations relating to non-profit providers should be undertaken. To provide better care for the poor, subsidies to existing nongovernment facilities to make them affordable should be considered as a cost-effective alternative to direct provision of these services by the government sector.

There are important training, regulatory, and information roles that only the public sector can perform in overseeing and guiding the activities of nongovernment providers. The public health sector in every country needs to take leadership in training health workers, testing them for competency,

and licensing nongovernment facilities. Governments must play a central role in research and development. Governments must set standards and regulations to protect the populace from untrained or unethical practitioners, especially in countries where professional associations and standards of professional conduct are not yet well established. Governments need to develop the legal framework for prepaid health systems, and must disseminate information about pharmaceuticals, and health insurance options to help consumers deal effectively with nongovernment providers.

In some countries, including much of Latin America and the middle-income countries of Asia, it may be possible for the nongovernment sector to provide most or even all curative care as long as risk coverage plans and subsidies for the poor are implemented. In others, including in Africa and the poorer countries of South Asia, where much of the population resides in rural areas, and where basic curative and preventive services are closely and appropriately integrated, the government sector will need to continue to provide curative care in conjunction with its preventive care (for example sick child visits in conjunction with immunization), ideally in a manner that complements existing nongovernment (including traditional and mission) services. In all countries, in most areas of preventive care, where social benefits are large, the role of government will remain predominant and indeed ought to expand.

4. Decentralizing government health services. Decentralize planning, budgeting, and purchasing in provision by government of health services, particularly of the "private" type services for which users are charged. Under a general rubric of national setting of policy and program directions, use market incentives where possible to better motivate staff and allocate resources. Allow retention of revenues collected as close as possible to the point of service delivery. This will improve collection itself and contribute to improved service efficiency.

There will be a continuing role for the government sector in provision of health services in most nations. Increased efficiency in the provision of these services cannot be neglected. In countries where managerial resources are scarce, communication is difficult, transportation is slow, and many people are isolated, decentralization of the government service system should be considered as one possible way to improve efficiency.

Decentralization is an approach appropriate primarily for the types of services provided directly to people in dispersed facilities, where user charges for drugs and curative care are implemented. Decentralization is less likely to make sense for tax-supported "public" type goods, such as immunizations and control of vector-borne diseases. These programs are more logically administered centrally, though even these programs can be, and are in some countries, "contracted out" by the central government to local governments. Decentralization gives local units greater responsibility for planning and budgeting, for collecting user charges and for determining how collected funds and transfers from the central government will be spent. (It often also implies greater responsibility for personnel management and discipline.)

Decentralization of financial planning should include adherence to a general principle regarding control of revenues collected in the form of user charges: such revenues should be retained as close as possible to the point at which they were collected. This improves incentives for collection, increases accountability of local staff, within limits assures that local choice of expenditures (whether to fix the well or purchase drugs) reflects local needs, and fosters development of managerial talent at the community level. The conventional public finance argument, that all public revenues should revert to the center where they can be allocated where most needed, fails to take into account a critical factor: that the system of collection itself affects the amount and use of revenues collected. In general, the higher the transactions and information costs of collecting fees and administering revenues--that is the smaller the amounts being collected and the more frequent the collection, as in drug charges and fees for simple curative care--the stronger are the arguments for control of revenues at the point of service delivery.

Decentralization and greater financial control by no means imply, however, complete financial independence of each individual facility. Government facilities that provide integrated curative and preventive services in rural areas and to the urban poor will continue to require central support. In fact, in rural areas the appropriate "unit" for purposes of decentralized planning and budgeting is likely to be a regional or district office, not each of many small health posts. Eventually government hospitals in urban areas could transfer some collected revenues to the center, to supplement general revenues in financing other government health programs.

Control of revenues at the point of service delivery also helps reinforce a more general principle: as revenue collection in government facilities makes largely curative "private" services financially self-sustaining, the freed government resources should be retained in the health sector (but not necessarily at the level of individual facilities), until "public" type health programs and care for the poor are adequately funded.

Decentralization of government health services will not be easy, and of the four policy recommendations is probably the least tried. Where other parts of government are highly centralized, there will be considerable obstacles to decentralization (but considerable benefits as well since, except for agricultural extension, perhaps no other government service is as highly dispersed geographically in its activities). Where overall administrative systems are weak, the quality of staff in remote areas is poor, or positions are unfilled due to long standing difficulties in attracting staff away from large cities, decentralization will have to be planned and introduced gradually. In some countries, where staff of regional agencies, local hospitals, and clinics have little experience in managing revenues and expenditures, training in such skills and a period of practice of such skills will need to precede decentralization.

The Policy Package and Health Sector Problems

Table 1 summarizes the potential effect of each of the four recommendations in alleviating health sector problems. User charges for government-provided services can contribute to solving all three problems. User charges increase resources for the system as a whole, allowing a shift in government resources to more cost-effective, generally preventive programs. This shift alone will tend to benefit the currently underserved poor more than the rich, since the poor tend to suffer more from the health problems that can best be addressed by preventive programs. If revenues from user charges are channelled directly into underfunded nonsalary expenditures, that is into drugs, fuel, and maintenance, the efficiency of the existing government services will increase. User charges can also play a direct role in making the health system more equitable: the rich who benefit most from government provided services, will now have to pay; the government resources thus freed can be redirected into programs and facilities targetted to the poor.

Risk coverage programs can provide more revenue to the system as a whole, also allowing diversion of freed government resources to cost-effective programs. By tapping the ability of the better-off to cover the major costs of their own care, risk-sharing schemes improve the overall equity of government health spending.

Encouraging the nongovernment sector helps mobilize resources from families, communities and voluntary groups, and allows redirection of government resources to programs that have high benefits but for which willingness to pay is low--resulting in both more efficiency and greater equity.

Finally, decentralization can contribute to increased revenue mobilization. Consumers will be more willing to pay and providers more willing to collect charges because of the link between revenue collection and better services. Decentralization can also contribute to improved use of government resources, by making services provided by government more responsive to client needs.

The parts of this policy package rely on each other for their positive effects. Charges at government facilities will not be effective in raising revenues unless competitive incentives in both the nongovernment sector and the decentralized government sector orient the system toward provision of quality care at affordable prices. The tendency to allocate too much of the government health budget to high-cost hospital care, with negative effects on overall cost-effectiveness and on equity, will be difficult to change until charges come close to reflecting real costs. But charges at hospitals and other government facilities cannot be raised to reflect costs and recover larger amounts unless much of the population is insured. At the same time insurance and other forms of risk coverage will collect little revenue and in all likelihood fail if free services remain available at government facilities. In the long run, diversion of government resources

Table 1. EFFECTS OF POLICY REFORMS

Policy	The allocation problem	The internal efficiency problem	The equity problem
Keep the Present System	0	0	0
Institute User Charges	+	+	+
and: Use freed government revenues to expand cost-effective services	+	0	+
and: Use new revenues to finance non- salary costs	0	+	+
and: Use differential charges to protect the poor and reduce existing subsidies for the rich	0	0	+
Provide for Risk-Coverage	+	0	+
Use Nongovernment Resources Effectively	+	+	+
Decentralize Government Health Services	+	+	+

Note: 0 indicates no effect.

for cost-effective basic services will be easier if an active nongovernment sector is providing the bulk of curative care. An active high-quality nongovernment sector requires availability of insurance.

Financing Reforms: Problems and Pitfalls

Implementation of these reforms will by no means solve all the problems of the health sector. User charges in government facilities will not generate foreign exchange to pay for imported pharmaceuticals. Insurance programs will not in and of themselves assure better quality of government services. Decentralization will not eliminate the need for difficult decisions at the center regarding the geographical allocation of new investments and of health personnel. A strong nongovernment sector may not adequately serve the poor in remote rural areas.

Financing reforms will have little impact without a political commitment by government to making the health sector more effective. As noted above, user charges (and other financing reforms) alone will not assure that government resources freed up will be well used; decisions made largely in the political arena will determine whether freed funds are used for the poor and for "public" type services, rather than for building urban hospitals and buying expensive nonessential equipment. Political decisions will largely govern whether freed revenues are used to improve access to and quality of services sufficiently to attract fee-paying and insurance buying customers. Only government action can bring necessary changes in management and training programs--for example in the medical education system toward more appropriate training of doctors and increased emphasis on the training of paramedical personnel.

On the other hand, without financing reforms the revenues needed to carry out political reallocation decisions both within and outside the health sector may not be available. While financing reforms will not automatically take care of political decisions, reforms will help make available the resources that make political decisions feasible.

Nor is the finance policy package itself a simple one to implement. In countries where administrative capability is weak, introduction of new approaches will take time. Moreover, each of the four parts has potential drawbacks if implemented without due care. User charges could deter those with the greatest capacity to benefit from seeking care, without recycling funds into health. Risk-sharing schemes could raise costs and augment existing disparities. Deregulation of the nongovernment sector and administrative decentralization could increase geographical inequality and decrease quality of services.

Avoiding the pitfalls requires that political and social boldness in innovating on the policy side be complemented by systematic and sustained attention on the program monitoring side. At the country level, specific approaches to implementation need to be monitored as they are tried; flexibility in such areas as the size of user charges and the approach to decentralization needs to be maintained.

Need for Further Analysis

As the finance reforms are tried, monitoring and operational research work in country settings should focus on these kinds of questions:

1. What access to services of what quality is there now? What are nongovernment expenditures on health care? How much do people now pay? How much can they afford? How would utilization of services be affected were prices raised? Would demand fall for services important from a health point of view? Would utilization by the poor decline?

2. How much revenue can be raised from what size charges? What are collection costs likely to be? What is a reasonable schedule of charges at different levels of the system?

3. What health insurance programs now exist? Who is covered at what cost? Are there informal insurance systems within extended families?

4. How equitable is the existing health system? What groups now benefit from what services, at what cost to the government purse? What are practical means of identifying and protecting those unable to pay for health care?

5. How active is the nongovernment health sector? Is the for-profit sector competitive? Are there private physicians, pharmacists, and other trained health practitioners in rural areas? What income groups does the nongovernment sector serve? What are alternative means, and their relative costs, for improving information to consumers about the quality and prices of private health services? How can both public and private health providers be regulated and supervised so that the clients are protected from ill-advised and overpriced services?

6. How can management of government health facilities be organized and overseen so that resources are used efficiently and workers perform well? What steps can be taken to ensure sustained political and popular support for health financing reforms?

The Role of the World Bank

The World Bank began direct lending for health in 1980, and by 1983 had become, along with the United States and Japan, one of the three largest funders of health programs in developing countries. Lending operations in over thirty countries have focussed on development of basic health care programs, including expansion of primary health care, provision of drugs, and support for training and technical assistance. Lending operations have generally been preceded by systematic studies of the health sector as a whole. These studies have enabled the Bank to carry on a policy dialogue regarding system-wide health issues with government officials.

In its sector work and lending in health, the Bank has been concerned not only with health financing, but with a wide array of system-wide issues, including the appropriate allocation of investments in the sector given the criterion of cost-effectiveness; the design of sustainable health programs; and the need to improve management and training. Concentration on financing in this paper by no means reflects diminution of concern with these other issues. It does reflect mounting concern in the Bank and in member countries about the resource problem in health, and a conviction that the Bank, itself a financial institution, can make a useful contribution to improving health in developing countries by encouraging improved health financing policies.

The Bank is currently making renewed efforts to do so. A strengthened program of country sector work includes attention to the health financing issue. General reviews of overall government expenditures increasingly include special attention to the health sector. Innovative lending programs include assistance to countries in the development and implementation of new health financing approaches. Dialogue with other donor agencies is more active and a program of research and operational evaluation on the effects of new approaches is planned.

The Bank consistently has advocated that overall economic policy be grounded in sound principles of finance and project selection; the agenda for health financing reform proposed in this paper is consistent with and reinforces that role in the health sector.

Box 1. Private and Public Benefits of Health Care

Goods and services provided by the health system can usefully be classified with respect to who receives the benefits of their provision. At the two extremes of classification are purely private goods, for which all benefits of use are captured by the person who consumes the health service, and purely public goods, for which all benefits are equally received by all members of society. An aspirin taken for a headache is a good example of a purely private health good. Spraying to protect all residents from a vector borne disease closely approximates a purely public health good. Many actual health services are of a mixed type; the consumer captures some purely private benefits, yet others also benefit from that person's consumption of the service. The person who is vaccinated receives a private benefit of protection, but others benefit as well because they are less likely to be exposed to the illness.

Consumers' willingness to pay directly for health services with largely private benefits is almost always high. Willingness to pay directly for programs and services which benefit society or communities as a whole is generally very low. Consumers will tend to wait and hope that others will provide the funds needed for adequate levels of these public type services --the so-called free rider problem. That is why in most societies, "public" type health services are funded by general revenues rather than user charges. Only public involvement will bring sufficient provision of public goods (and mixed goods with a significant public benefit component).

Private and public benefit type health services, and therefore degrees of willingness to pay, often are equated with curative and preventive care respectively (including in this paper, for ease of exposition). But the correspondence is not exact. For some preventive care, such as growth monitoring of infants, much of antenatal and perinatal care, and screening for hypertension, most benefits are captured by recipients of the services and their families. Well-informed patients are likely to choose to pay for these services rather than forego them. For some curative care, such as the care of the carrier of a contagious disease (tuberculosis is an example), there are public or social benefits to others as well as private benefits to the patient.

[End of Box 1]

CHAPTER 1

THE HEALTH SECTOR AND ITS PROBLEMS

The main purpose of this paper is to discuss new and generally underutilized approaches to health financing in developing countries-- approaches that should contribute to solving common problems in the health sector. In this chapter, following a brief introduction to health status and the health sector in developing countries, three major health sector problems are discussed. In Chapter 2, four financing reforms to help deal with these problems are described and evaluated. In Chapter 3, the operational research needed to design programs appropriate to specific nations and to evaluate the effects of financing reforms, and the World Bank's role in assisting countries with health finance policy are discussed.

Health and the Health Sector in Developing Countries

The degree of ill health in developing countries is enormous. Mortality is much higher than in developed countries, with low- and middle-income countries in 1983 experiencing average infant mortality rates about 8 times higher, and female life expectancy about a third shorter, than in the industrialized nations. In pockets of Africa, nearly a fifth of all births end in death before age one.

Morbidity is also high. The few available sample surveys of morbidity demonstrate extraordinarily high levels of largely preventable sickness. A 1974 survey of two typical rural Punjab villages in Pakistan found 28 percent of the residents suffering from malaria and nearly 100 percent infested with various parasitic worms. Children under five averaged six bouts of diarrhea annually. A similar survey at the end of the dry season in 15 rural Malian villages found a 50 percent prevalence of malaria and a 30 percent incidence each for goiter, schistosomiasis, salmonellosis, hookworm, and onchocerciasis.

The health sector in developing countries consists of a heterogeneous mixture of public, or government activities, and nongovernment activities, including services provided by both modern and traditional practitioners (Box 2). The public or government component itself is diverse, providing a broad range of services through many different programs. Governments typically provide free or low-cost curative care directly through Ministry of Health institutions; they administer social security systems that provide free curative services to insureds through a second set of (often) government-owned facilities; they support mental hospitals, leprosaria and infectious disease hospitals; and they finance vector-borne disease control programs, water and sanitation projects, and other public health activities.

<p><u>Box 2</u> Organization and financing of the Health Sector in Zimbabwe [Attached at end of Chapter]</p>
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Use of the government service system varies enormously across and within countries, depending on its effectiveness and its competitive environment. In the Ivory Coast, the government system serves 90 percent of outpatients; in the Philippines, with its larger modern private sector, the government system serves at least 25 percent of outpatients. The lesson of recent surveys, however, is that almost nowhere are government clinics and hospitals the only source of care. At a minimum, they compete with private physicians in urban areas and with traditional practitioners in rural areas; more often they compete with both. New government programs are thus often inserted into areas where people have well-established medical service demand patterns; there is rarely a complete absence of services. For example, in the well-known Narangwal, India, study, approximately a third of sick children in villages not receiving project health services were found to use private or traditional care. The rest stayed at home. In project villages, where free primary health services were aggressively delivered, the percentage of all sick children receiving any medical care increased, but still a third of them paid for private or traditional care.

The nongovernment sector is no less complex than the government sector. Modern private care is dominated by independent physicians. In Bangladesh, Indonesia, Malaysia, Peru, Thailand, and the Ivory Coast, surveys show private physicians account for at least 25 percent of outpatient visits. In densely settled middle-income countries like the Philippines and Korea, as many as 40 percent of visits are to private physicians, even in rural areas. In many countries, private physicians are joined by government physicians who maintain part-time private practices, by nurses, midwives, and paramedics who work privately, and by various non-profit and voluntary organizations.

In Africa and parts of Latin America, modern non-public care is also provided by religious missions and other nonprofit groups. Private employers also provide direct care, often for the sound business reason, that it helps to maintain a stable work force. The Firestone company had by the late 1960s built up impressive health facilities for its workers and their families in Liberia. Among the facilities provided by the company were two modern hospitals, a nursing school and formal programs for training laboratory technicians and other skilled personnel. In 1966 the system had over 500 employees, and over 500,000 patient visits per year were being accommodated. Over 25 percent of total visits were by patients having no connection with the company. In many countries, for example in francophone Africa, social legislation requires that large employers provide health services.

Also in the nongovernment sector are pharmacists and traditional healers and midwives. Private pharmacists, many of whom are primarily shopkeepers without formal training, are a source of informal advice and remedies. Traditional healers and midwives provide fee-for-service care in both urban and rural areas throughout the developing world, accounting for 10 to 50 percent of all medical visits in countries surveyed. Even in areas where trained midwives are available and where women use modern prenatal care, traditional midwives may attend well over half of all births.

Nationally representative World Fertility Survey data for Peru, a middle income country, indicate that almost 60 percent of children born in the late 1970s were delivered at home. In Mali and the Philippines, two countries that are among the few for which extensive expenditure surveys have been done, traditional services and purchases of drugs account for half to two-thirds of household health expenditures.

Use of more than one source of health care is not at all uncommon; indeed, inattention to the traditional and modern private sectors when planning government services probably contributes to wasteful spending through duplicated care. Anthropologists have observed patients using free government care while simultaneously paying for traditional care, paying for ineffective traditional services or pharmaceuticals before finally ending up in a free government hospital bed, and paying private physicians to refer them to free government hospitals in the expectation of getting better care.

While it is useful to emphasize features common to developing country health systems, it is important to point out that the countries are quite different in ways that affect the delivery, accessibility, and financing of health care. Terrain, income levels, income distribution, literacy, population density, capacity to educate health professionals, degree of urbanization, transportation and communication systems, proportion of wage earners in the population, and morbidity patterns vary tremendously. Generally speaking, certain obvious combinations of these characteristics--for example, low incomes, dispersed populations, and illiteracy--conspire to make financing and delivery of medical care far more difficult in some regions, including much of Africa. However, even within Africa there is great variation, with some countries characterized by relatively high and rising levels of urbanization, extremely small geographical areas, pockets of high incomes (especially in mining areas), and well-insured employees in certain industries.

Problems in the Health Sector

Health sector problems can be summarized under three categories: an allocation problem--insufficient spending on cost-effective health programs; an internal efficiency problem--wasteful public programs of low quality; and an equity problem--inequitable distribution of the benefits of health services. Piecemeal efforts to address these problems, through foreign aid to fund high-priority programs or adding more supervisory staff to control quality, fail to address a fundamental underlying cause--poor approaches to financing.

An Allocation Problem: Insufficient Spending on Cost-effective Programs

Most countries have embraced an explicit social goal--to bring basic health services to all members of their populations by the year 2000. But current public and private spending on basic health services in developing countries is insufficient to meet this goal. Though private spending is

substantial, little of it goes for the low-cost services which are most cost-effective in improving health: basic health services, including immunizations, vector control, health education, simple curative care and referral, and effective drugs. Current public spending, even were it better allocated, would alone probably be insufficient to finance these activities. The result: growth of important health activities is slowed despite great need and fast-growing populations, and the apparent willingness of households to pay at least some of the costs of health care.

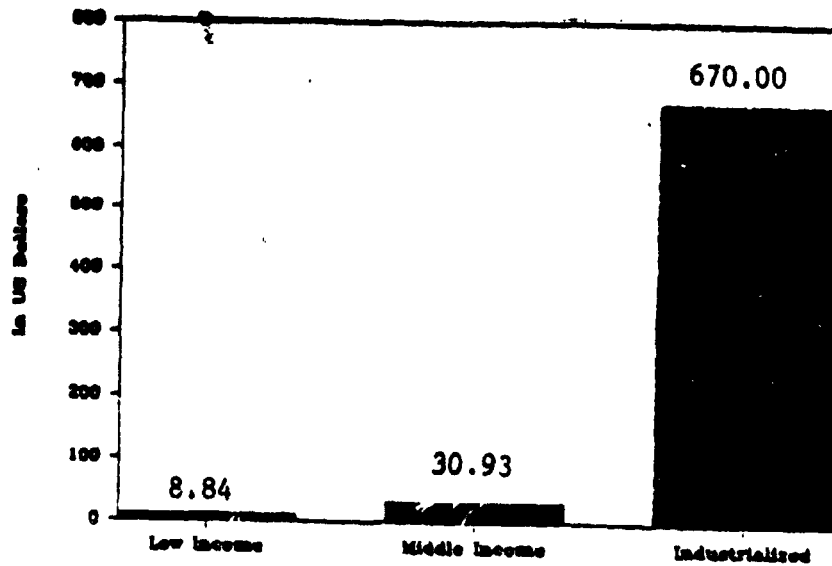
This section outlines briefly the gap between actual and required spending on critical health programs in developing countries. The evidence of a gap is largely circumstantial. In the absence of systematic studies of the social returns to various types of health spending,¹ there is no simple way to quantify the gap between potential high-return spending on health and actual spending.

Actual spending on all health care. Per capita spending on health care in developing countries, including public and private spending, averages about US\$9 in low-income countries and US\$31 in middle-income countries. These figures are low compared to an average of US\$670 in industrial countries (Figure 1). Much of the difference simply reflects differences in overall per capita income; the proportion of total national income devoted to health is in a range of 2-12 percent for almost all countries, developing and developed. Health spending is highly income elastic; across countries, as incomes rise absolute spending on health care rises at an even faster rate (Table 2). As income levels rise in the poorer countries, the demand for public spending in the health sector is likely to rise more than proportionately, as has historically occurred in developed countries. Even in the U.S., where more than half of care is provided privately, expenditure by the public sector on health takes over 11 percent of the total government budget (Appendix, Table 3) and much of private care is paid for by public Medicare and Medicaid funds. Per capita public sector health expenditures in the U.S. are larger than in most other developed countries (Table 2). As development occurs all nations raise added funds for the public type goods (and some, such as Sweden, fund much "private" care publicly).

Government is an important, but by no means the dominant, source of health spending in developing countries. Direct private payments by individuals account for more than half of all health spending in developing countries, compared to less than one-quarter in developed countries. There are large differences among developing countries. Expenditures by individuals account for over 70 percent of total health expenditures in Bangladesh, Ghana, India, South Korea, Pakistan, the Philippines, Syria, and Thailand, and less than 30 percent in a number of poor African countries

¹ Such as exist already in education.

**Figure 1. Total Per Capita Health Expenditures
Selected Countries (1981-82)**



Sources: World Bank Sector and Appraisal Reports for all developing countries but Egypt and Portugal.

OECD. "Measuring Health Care 1960-1983: Expenditure, Costs and Performance." OECD Social Policy Studies No. 2, Paris, 1985.

Institute of Medicine. "Health in Egypt: Recommendations for U.S. Assistance, Report of a Study." National Academy of Sciences, Washington, D.C., January 1979.

Notes: Averages are based on selected countries. These countries are (by income classification):

Low income : Ethiopia, Mali, Uganda, Burundi, Burkina Faso, Rwanda, Somalia, Sri Lanka, Niger, Pakistan, and Senegal.

Middle Income : Indonesia, Lesotho, Zambia, Egypt, Swaziland, Thailand, Philippines, Morocco, Zimbabwe, Botswana, Peru, Jamaica, Ecuador, Colombia, Jordan, Portugal, Greece.

Industrialized: Ireland, Spain, Italy, New Zealand, United Kingdom, Japan, Austria, Finland, Australia, Canada, Netherlands, Belgium, France, Iceland, Denmark, Federal Republic of Germany, Norway, Sweden, Switzerland.

Table 2. Total and Public Health Expenditures for Selected Countries
(per capita and as a percent of GDP)

	Year	Total Per Capita	Public Per Capita	Total Expenditures as % of GDP	Public Expen- ditures as % of GDP
Low Income:					
Ethiopia	1981	2.81	1.52	2.01	1.09
Uganda	1982	9.73	1.91	4.23	0.83
China	1981	8.39	5.70	2.80	1.90
Sri Lanka	1982	10.25	6.14	3.20	1.92
Middle Income:					
Zambia	1981	32.24	16.30	5.37	2.72
Indonesia	1982	15.03	5.70	2.59	0.98
Egypt	1977	16.53	6.98	5.17	2.18
Peru	1981	62.12	32.71	5.31	2.80
Industrialized:					
Italy	1982	444.42	375.84	6.50	5.49
Japan	1982	605.63	433.65	6.01	4.30
Sweden	1982	1172.74	1076.16	8.21	7.66
United States	1982	1402.65	591.14	9.38	4.49

Notes: All data in this table are based on estimates. All amounts are in U.S. dollars of the year indicated.

Public is defined as the sum of all central government expenditures on health, health expenditures through the social security system, and foreign aid (excluding foreign aid to nongovernmental organizations).

Sources: World Bank Sector and Appraisal Reports for all developing countries but Egypt.

OECD. "Measuring Health Care 1960-1983: Expenditure, Costs and Performance." OECD Social Policy Studies No. 2, Paris, 1985.

Institute of Medicine. "Health in Egypt: Recommendations for U.S. Assistance, Report of a Study." National Academy of Sciences, Washington, D.C., January 1979.

World Bank. "World Development Report 1984." Washington, D.C., 1983.

IMF. "International Finance Statistics -- August 1984." Washington, D.C., 1984.

(Table 3). Spending on nongovernment health care consists predominantly of fee payments and payments for drugs. In Indonesia, at least 23 percent of all health spending in 1982-83 was for household purchases of medicines, and another 35 percent for fees to modern and traditional private practitioners.

Between 1972 and 1982, the proportion of central government expenditures devoted to health declined for developing countries as a group, while it increased in developed countries (Figure 2). For the poorest countries, the declining share of government expenditures going to health translated into real declines in public resources for health, and even larger declines in per capita spending, because of fast population growth.

Sources of finance. Spending by Ministries of Health is supported almost exclusively by general tax revenues. Social security institutions, which are most prevalent in Latin America, are almost always financed by payroll and other earmarked taxes. Cost recovery in government facilities usually covers only a small fraction of expenses. Foreign assistance accounts for a relatively high proportion of capital costs in the poorest countries, but is rarely available for operating expenses.

In the nongovernment sector, physicians, traditional healers, traditional midwives, and pharmacists are financed by fees or in-kind payments. Mission facilities are financed from three sources: (i) user fees, generally high enough to permit substantial cost recovery, (ii) subsidies from affiliated churches, and (iii) in most African countries, direct subsidies from the government. They also often benefit from the low salaries of religious personnel.

Third party payment mechanisms are rare in developing countries outside of Latin America, so reimbursements from insurance programs (either government or private) account for only a small share of private sector revenues. However, prepaid health care programs, organized by central governments, communities, or private companies, are becoming increasingly common in nations such as Brazil, Jamaica, the Philippines, Thailand, and Uruguay.

Required spending for critical programs. Estimates of the cost of a package of basic health interventions--such as immunizations, prenatal care and education about healthful personal habits--vary widely. Excluding water and sanitation, one detailed evaluation suggests annual costs on the order of \$10 per capita (see Box 3).

This is not large, compared to total government and nongovernment spending of at least \$10 per capita in most countries. But most current spending, government and non-

government, is for hospitals and other curative care and nonessential drugs, not addressing fundamental health problems. In most developing countries, health spending goes almost completely to curative services provided almost exclusively by hospitals (see Table 4). Estimates of the exact cost-effectiveness of alternative types of services are crude, but there is

<p><u>Box 3</u> Primary Health Care: Resources and Costs [Attached at end of Chapter]</p>
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**Table 3. Public and Nongovernment Health Expenditures,
Selected Countries¹**

Country	Total per Capita (US\$)	Public per Capita ² (US\$)	Nongovernment per Capita ³ (US\$)	Nongovernment/ Public
Developing Countries				
(in order of 1984 per capita income)				
Ethiopia, 1981	2.81	1.52	1.29	0.86
Mali, 1981	4.45	2.06	2.40	1.17
Burkina Faso, 1981	7.41	5.07	2.34	0.46
Niger, 1984	4.84	3.58	1.26	0.35
Burundi, 1982	4.23	3.52	0.71	0.20
Uganda, 1982	9.73	1.91	7.82	4.09
Somalia, 1982	9.10	4.48	4.62	1.03
Rwanda, 1982	7.07	5.18	1.89	0.37
China, 1981	8.39	5.70	2.68	0.47
Sri Lanka, 1982	10.25	6.14	4.11	0.67
Pakistan, 1982	11.18	3.23	7.95	2.46
Senegal, 1981	17.73	11.09	6.64	0.60
Zambia, 1981	32.24	16.30	15.94	0.98
Lesotho, 1980	8.99	7.94	1.05	0.13
Indonesia, 1982	15.03	5.70	9.33	1.64
Philippines, 1980	18.23	4.83	13.39	2.77
Morocco, 1982	23.53	10.80	12.93	1.22
Egypt, 1977	16.53	6.88	9.56	1.37
Zimbabwe, 1980	29.58	17.81	11.77	0.66
Swaziland, 1983	52.22	20.90	31.32	1.50
Thailand, 1979	19.56	5.86	13.70	2.34
Botswana, 1978	36.65	20.74	15.91	0.77
Peru, 1981	62.12	32.71	29.41	0.90
Ecuador, 1984	46.11	28.35	17.76	0.63
Jamaica, 1980	61.93	41.62	20.31	0.49
Colombia, 1978	69.60	46.42	23.18	0.50
Jordan, 1982	59.34	34.24	25.11	0.73
Portugal, 1982	134.86	95.88	38.98	0.41
Greece, 1982	173.16	143.19	29.97	0.18
Industrialized Countries				
(in order of 1984 per capita income)				
Spain, 1982	301.34	218.22	83.12	0.38
Ireland, 1982	449.58	421.01	28.57	0.07
Italy, 1982	444.42	375.84	68.58	0.16
New Zealand, 1982	421.51	373.66	47.85	0.13
United Kingdom, 1982	513.35	453.73	59.62	0.13
Belgium, 1982	531.14	490.09	41.05	0.08
Austria, 1982	641.85	404.76	237.09	0.59
Netherlands, 1982	842.75	671.12	171.63	0.26
France, 1982	935.00	664.34	270.65	0.41
Japan, 1982	605.63	433.65	171.98	0.40
Finland, 1982	696.71	554.37	141.34	0.25
Iceland, 1982	1012.15	870.45	141.70	0.16
Germany, F. R., 1982	871.80	702.79	169.01	0.24
Denmark, 1982	748.75	646.80	101.95	0.16
Australia, 1982	843.33	555.22	288.12	0.52
Sweden, 1982	1172.74	1076.16	96.58	0.09
Canada, 1982	1010.82	750.25	260.57	0.35
Norway, 1982	934.20	912.50	21.71	0.02
United States, 1982	1402.65	591.14	811.51	1.37
Switzerland, 1982	945.50	618.46	327.05	0.53

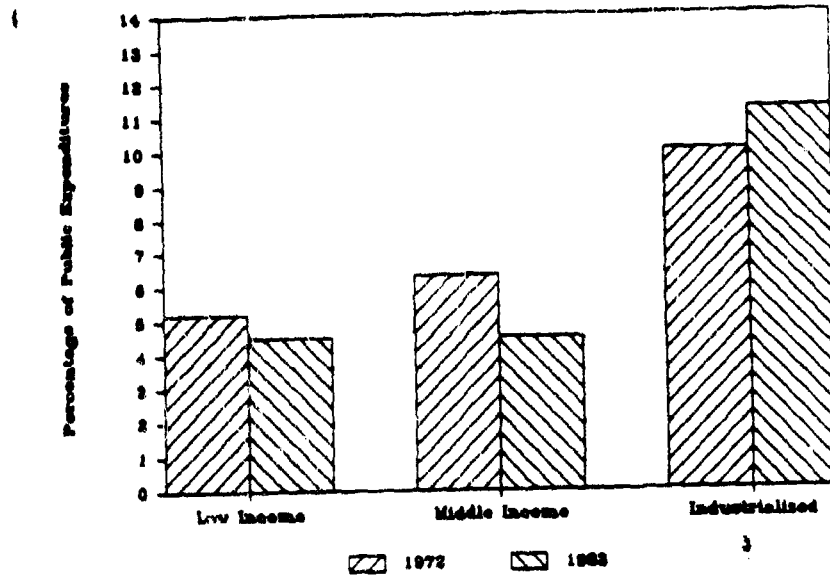
Sources World Bank Sector and Appraisal Reports for all developing countries but Egypt and Portugal.
 OECD. "Measuring Health Care 1960-1983: Expenditure, Costs and Performance." OECD Social Policy Studies No. 2, Paris, 1985.
 Institute of Medicine. "Health in Egypt. Recommendations for U.S. Assistance." National Academy of Sciences, Washington, D.C., January 1979.
 World Bank. "World Development Report 1983." Washington, D.C., 1983.
 IMF. "International Finance Statistics -- August 1984." Washington, D.C., 1984.

Notes 1/ Because sources use different definitions of public and nongovernmental, data for developing countries are not directly comparable across countries.

2/ Public is defined as the sum of all central government expenditures on health, health expenditures through social security institutions, and foreign aid (excluding foreign aid earmarked for missions and nongovernmental organizations).

3/ Nongovernment is defined as the sum of private expenditures on health care, expenditures by missions, and expenditures by Nongovernmental Organizations.

**Figure 2. Central Government Expenditures on Health
As a Percent of Total Public Expenditures, 1972-1983**



Source: World Development Report, 1986.

Table 4. Spending and Cost for Various Health Services

Services	Percent of total expenditure on health/ ^a	Approximate cost per additional life saved
<u>Direct Services to Patients</u>		
Curative	70-85	High (probably \$500-\$5,000)
<ul style="list-style-type: none"> ● treatment and care of patients through health facilities and independent providers (including traditional practitioners) ● retail selling of medicines 		
Preventive	10-20	Medium (probably \$100-\$600)
<ul style="list-style-type: none"> ● maternal and child health care (e.g., immunization, growth monitoring, family planning, promotion of improved breastfeeding and weaning practices) ● adult care (e.g., hypertension screening, pap smears) 		
<u>Community Services</u>	5-10	Low (probably less than \$250)
<ul style="list-style-type: none"> ● vector control programs ● educational and promotional programs on health and hygiene ● monitoring of disease patterns 		
Total	100	

Source: Columns 1 and 2 are based on de Ferranti, 1985 (rough estimates based on review of World Bank sector and project documents). Column 3 is a rough guess by the authors.

^{a/} Includes both nongovernment and public spending. Data on private spending are available only for a limited number of countries. Figures here assume 90 percent of private spending is curative, 10 percent is preventive (to patients).

little doubt that costs per life saved are much higher in curative hospital care than in preventive services and community programs (see Table 4).

Yet spending on curative hospital services, especially private spending, cannot easily be redirected. Nor should it all be redirected--at least some spending on hospitals is required because hospitals are a necessary part of referral systems. As part of a referral system, hospitals in a sense serve the total population by being available to those who need (and can reach) them. And because hospitals treat the most difficult cases, inevitably costs per life saved (or episode of ill health ameliorated) will be higher than elsewhere in the system.

The allocation problem in the health sector is thus rooted in a combination of limited overall resources for health, due in part to low per capita income, and the tendency in both the government (public) and nongovernment sectors to allocate what resources there are to high-cost relatively ineffective care.

Why has this mismatch between resources and problems occurred? In a centralized system, without any pricing mechanism to assist in resource allocation, investment over the long run can diverge considerably from needs. Even given a valid and important role for hospitals, it is likely that, using cost-effectiveness as a guide, too much of government resources is spent in the hospital subsector. Much more of the burden of this spending could be borne by the actual beneficiaries of the less essential care. In Niger, about half the government health budget goes to hospital services in urban areas. Another 40 percent is spent on provincial-level facilities located in the main towns, and just 10 percent is spent in rural areas, where over 80 percent of the population lives. The 50 percent of the budget devoted to hospitals in 1984 benefitted 350,000 hospital patients, while the other half of the budget provided services for over 10 million clients.

In Swaziland the seven most common causes of hospitalization are gastrointestinal diseases, complications of pregnancy, respiratory illnesses, tuberculosis, malnutrition, measles, and skin diseases. If the public resources tied up in hospitals were redirected to lower levels of the health system, many of these could be treated earlier at a less severe stage, or prevented altogether. Similarly in Bangladesh, specialized orthopedic, cardiovascular, and eye institutions, as well as a planned cancer research center are publicly subsidized. Some specialization is hard to avoid. But in a country with a life expectancy of only 50 years, the chronic diseases those institutions are designed to treat will affect only a fraction of a percent of the population. At the same time, Bangladesh estimates that on a yearly basis 325,000 active tuberculosis patients over age ten receive no treatment, at least 90,000 children under 5 die of pneumonia, and 136,000 infants die of tetanus.

Another symptom of insufficient spending on cost-effective health activities is the difficulty of retaining trained personnel in critical public sector health programs. Low salaries and amenities in the public sector contribute to a loss of personnel to the private sector and overseas,

and make it difficult for the public service to staff basic health services for the poor. India, which is widely regarded as having a surplus of physicians and is a major contributor to the international migration of physicians and nurses, had vacancy rates of 30 to 90 percent for professional health service positions in rural states during the early 1980s. An inventory of government rural health clinics in the Philippines in 1974 found a third to half of physician and nurse positions unfilled. Because of the inability to raise salaries to a level competitive with other opportunities, public sector health systems in many countries have been forced to allow physicians to supplement their incomes through private practice, often reducing their time spent in basic programs, or to make temporary government service compulsory for recent medical and nursing school graduates.

An Internal Efficiency Problem: Inefficient Government Programs

In the government component of national health systems, there is plentiful evidence that scarce resources are poorly used. Demand-side problems are created in part by low fees, which probably contribute to poor use of referral systems. Supply side problems, including low quality, are associated with highly centralized management.

Demand: inappropriate service use. One of the most obvious symptoms of inefficiency in health service demand is the widespread use of higher level health care facilities by patients who could be well served at less sophisticated units. A typical pattern is for some facilities, usually central outpatient and inpatient facilities, to be crowded, with lengthy waiting times, while other facilities, usually lower level ones, have few clients. In Colombia and Somalia, tertiary care hospitals in major cities had occupancy rates of over 80 percent in recent years, while local secondary hospitals had rates of 40 percent or less. In Rwanda, the bed occupancy rate in city hospitals averages about 70 percent but is 30 percent for rural health center beds. A World Bank mission in Somalia observed a 35-bed secondary hospital that had one patient and another 32-bed hospital with no patients. In India, health clinics that have 8 to 10 beds serve about 100,000 people. An evaluation covering eight clinics in one district found only one of 80 beds being used.

Consumers crowd themselves into higher quality institutions for obvious reasons. Personnel have more training, equipment and laboratories are more complete, a wider array of diseases and emergencies can be handled, toilets and running water are available, and the institutions are located in cities where required drugs and related services can be purchased. Consumers have little pecuniary incentive not to use the high level facilities when high and low level facilities are either both free or charge the same fee. The result: many services are delivered unnecessarily through costly facilities and personnel, and lower level services that are known by professionals to be appropriate to disease patterns are inadequately used by consumers. Crowded facilities are then expanded to accommodate high patient loads, and inefficient use is reinforced. Inappropriate pricing policies result in inappropriate investment patterns, and the vicious circle builds on itself.

One reason for a near collapse of the Senegal's Sine Saloum Primary Health Care Program in 1980 was exactly this type of pricing problem. Village health workers charged a flat fee for their services, but free treatment and drugs were also available at more distant government health posts. Village workers simply could not compete with free services from more highly trained nurses and nurses' aides. Moreover, they were slowly depleting their stocks of pharmaceuticals because the flat visit charge did not cover replacement costs. The situation was corrected when the government instituted charges in the rest of the health system and drug charges in villages were revised to reflect costs.

Demand: rationing by queue. A study in Calabar, Nigeria, found the average visit to a government clinic to take one and a quarter hours, which is not in itself exceptional, but waiting times ranged up to eight hours. Data from facilities in Uganda showed that about half of patients were seen within 2 hours, but 10 percent waited more than five hours. Nearly a third of patients in health centers, the highest level facility in the sample, waited over five hours. An anthropologist in Cote d'Ivoire observed patients in government clinics waiting hours to be seen for a few minutes of attention, with the time often wasted because required supplies or personnel were not available. For the working poor--including mothers with high demands on their time for child care, other home activities, and agricultural work--the opportunity cost of waiting time can be high indeed.

The long lines at some government facilities can mean not only that clients' time is poorly used, but also that there is unintended and inefficient rationing of services--perhaps to those who can most afford to wait rather than those most in need of the service (though the better off usually can avoid long lines for free services--either going to the private sector for health care, or using bribes or connections to skip the queue). Long lines put pressure on providers to minimize time spent with each patient, irrespective of the health problem. They are also likely to indicate unobserved inefficiencies, including time lost by people reconnoitering clinics to see if they have a chance of getting care and failure of people who need care to get it because they cannot wait.

Supply: underfunded recurrent costs. Pressure to expand the system combined with insufficient funds to do so leads to the cutbacks on critical complementary inputs. When public budgets must be cut, it is easier, especially in the short run, to cut spending on fuel, drugs and vehicle and building maintenance than on salaries. Because these inputs are usually a small portion of total costs (typically less than 20 percent), they must be cut drastically to achieve a significant reduction in total spending. For what is a small financial saving, a large drop in the effectiveness of workers occurs.

In Zambia "free" government-provided health services were reportedly inoperative because fuel and drugs were unavailable; yet nongovernment services flourished alongside. About a third of all rural clinics in the Philippines are located in dilapidated buildings. In Tanzania, availability of working vehicles and bicycles in rural health clinics declined from an already small one-third of the clinics in 1978 to less than a fifth in 1984.

Throughout much of Africa, many health posts have deteriorating roofs, nonworking water supply, and old, dilapidated furniture and equipment. Drug shortages are common in public facilities, even when drugs are widely available in nearby nongovernment facilities.

Some apparent shortages stem from overly ambitious plans and the natural temptation of recipients to accept foreign funds for buildings, equipment, and service systems that cannot be maintained. However, even the expected benefits of sensible investments often are not realized because operating costs are not adequately financed.

Supply: overcentralization and costs. Tax-financed health systems, highly centralized in their financing, are usually highly centralized in their management as well. These centrally financed and managed systems tend to use resources inefficiently. A donor-sponsored rural health demonstration project in Mali consumed 63 percent of its planned US\$.40 per capita operating cost in supervising village health workers and carrying out other administrative requirements, that, at great expense, replicated an existing decentralized private sector distribution system. Centrally managed and funded health systems are also susceptible to political disruptions. In Uganda, the government health system was destroyed by political upheaval that prevented central authority from effectively managing or funding the system. Had there been no mission health system, health services would have disappeared for most Ugandans in the 1970s.

Supply: logistical problems. Logistical problems in the supply of drugs, equipment, and fuel are the result not only of resource constraints but of highly centralized distribution systems. The distribution of publicly-funded pharmaceuticals is an example. Countries typically have central warehouses through which all Ministry of Health pharmaceuticals flow. Brand name drugs are bought in small, expensive lots; drugs often spoil in storage; lax inventory control results in losses from theft; pharmaceuticals are allocated to facilities without regard to the demand for them; there often are no formal procedures for reordering drugs. In Haiti, an analysis of drug supplies found that the central warehouse flooded each fall during the rainy season, that there was no stock control or reordering procedure, and drugs sent to local facilities bore only a chance relation to what was needed.

In a few countries, inefficiencies in distribution show up in the form of high consumer prices. In Burkina Faso, consumers pay 60 percent more than the retail price paid in France for similar pharmaceuticals. In Sierra Leone, in 1983 average prices paid by the government's Central Medical Stores ranged up to 314 percent above average world market generic prices.

Similar problems arise in the distribution of fuel and in vehicle maintenance. In the Gambia, some vehicles use half their biweekly fuel allotment to drive to a depot to collect the allotment. In Ethiopia, half the 1,025 health service vehicles are inoperable at any one time. Over 40 percent of the vehicles dedicated to rural service are at least ten years old. Fuel is allocated by vehicle, not by area covered. In Zambia in 1982,

only 26 percent of 550 vehicles were operative, and few of the working vehicles could be used because of a lack of fuel.

Primary health programs have taxed centralized distribution systems to the limit. A 1979 evaluation of community health workers in India found that 40 percent had never received their drug kits and 60 percent had not received their community health manuals. In Peru, only 34 percent of village health promoters had received their medicine kits. Ministries of Health have been unable to deliver support and supervision to dispersed health workers. In immunization programs, logistical problems have caused the cold chain for vaccines to fail. In the late 1960s in Nigeria, measles cases were increasing after an initially successful immunization campaign. Many of the new cases were in children with clear records of having been immunized. Tests of measles vaccine found only one of 20 samples capable of eliciting an immune response in a child. Similarly, Chile experienced a measles epidemic in the late 1970s despite high levels of immunization coverage. Sampling of measles vaccine found 100 percent to be effective at the central stores, but only 76 percent at the local clinic level.

Supply: low quality in the public sector. Evidence of low quality of government services is anecdotal and difficult to quantify. But it is also impossible to ignore. In one African country focus group discussions were undertaken to examine reasons for underutilization of public health services. Seven different groups were interviewed: village women, village men, elementary school teachers, traditional healers, male civil servants, female civil servants, and nurses from the general hospital. Respondents complained of long waiting times in government facilities, shortages of drugs, the poor attitude and demeanor of nurses, and the hastiness of physicians. They viewed petty corruption as commonplace in government health services. For example, respondents said that personal connections were perceived to be important in skipping registration lines; that drugs bought in the market place were frequently stamped as property of the government stores; and that to assure adequate care meant arranging for private care after hours.

A poor referral system, poorly-trained health workers, and lack of supplies and drugs are other signs of low quality. A 1984 survey in Tanzania showed that rural health clinic personnel referred only 3 percent of their patients to a higher level, when in fact they were incapable of treating 36 percent of their clients. The nonreferrals were given drugs that could not have helped them.

The skills of village health workers were evaluated in 23 states in India in 1979. They scored poorly in four areas: referrals, disease prevention, emergency care, and general curative services. Responses in these areas were on average correct less than 30 percent of the time. A 1982 study in one Indian state found that 80 percent of village health workers did not know how to mix oral rehydration solutions. In Peru, village health workers in a 1984 review displayed "dismaying and alarming" levels of ignorance of symptoms of several important diseases.

An Equity Problem: Inequitable Distribution of Benefits

If public resources were unlimited, it might be possible for the government to provide free health services for all. But government resources are not unlimited. (And in any event, free services tend to lead to waste and high costs.) Given the resource constraints outlined above, and the high fixed costs of certain kinds of health care, developing country governments can only provide a very low per person subsidy for health care. In most countries, a low average subsidy leads inevitably to rationing--there is simply not enough for everyone. Providing free publicly funded curative services for all, translates to free and adequate services for some and inadequate services, or none at all, for others.

Inequitable urban/rural distribution of benefits. As noted above, in most developing countries, 70 percent or more of government spending on health goes to urban hospital-based care (see Box 4). Hospitals are by nature expensive. When their services are free, they create distinct subsidy patterns that are difficult to modify. In Tanzania, which has since 1972 pursued a policy of limiting hospital construction in order to focus resources on rural health services, the share of recurrent expenses going to hospitals fell from 82 percent in 1970/71 to a still substantial 60 percent in 1980/81. Hospitals consumed 34 percent of the capital budget for health in 1970/71, and the proportion remained roughly constant over the following decade despite almost a 1,000 percent expansion of the rural health clinic program.

Box 4
Urban Orientation of
Public Health Spending
[Attached at end of Chapter]

Hospitals are primarily located in cities, which is essential if the market they serve is to be large enough to justify their high capital and recurrent costs. The result of this location pattern is not surprising. Even in well-functioning referral systems, in which many hospital patients come from rural areas, hospitals still end up serving primarily urban residents. In developing countries, 70 to 90 percent of hospital clients live within ten kilometers of the facility they use. As a consequence, in Colombia, Malaysia, Indonesia, and China, the average health sector subsidy captured by urban households ranges up to five times larger than that captured by rural residents.

If hospital services are free, institution of fees or revolving drug funds to finance rural health workers will obviously exacerbate this imbalance. Self-financing rural health programs in Senegal and the Gambia, initially added on to existing free urban systems, created patterns in which rural residents paid for low-level care from a village health worker in addition to subsidizing free, more sophisticated urban facilities, which serve mainly urban dwellers.

Income inequalities. Because family incomes are significantly higher in cities, the urban bias of most health systems creates a distribution of facilities and personnel which favors the better-off. Demographics and disease patterns also play a role. Higher income groups tend to be older on average and to suffer from diseases or accidents requiring hospitalization,

whereas the poorest households more often are young families with children, for which many health problems can be handled without hospitalization.

The extent of income bias varies across countries. In Colombia and Malaysia, health subsidies appear to be roughly proportional to incomes, with hospital subsidies favoring the rich, and health center subsidies favoring the poor.² In Indonesia, however, the poorest 40 percent capture only about 19 per cent of the subsidies from public health centers and hospitals.

A pattern of public subsidies similar to that of many other developing countries is that of Lesotho. In 1983/84, 84 percent of the budget of the Ministry of Health was absorbed by government-run hospitals and health centers concentrated in the towns and lowland areas where higher income citizens live. In these government facilities fees are very low, covering less than 6 percent of costs. The low-income population, in the highlands, is served by hospitals and clinics operated by mission agencies. Fees in these mission facilities cover 60 to 80 percent of costs. Thus those who live in the highlands, where incomes are low, pay a much higher proportion of the costs of their health care than those who live in the more prosperous lowlands and cities. Most of the government health subsidy is captured by the rich.³

The foregoing subsidy patterns often lead to the broad prescription that hospitals should be severely cut back or eliminated. However, a certain number of hospitals is an essential part of any health system, even one whose major emphasis is on primary level health care. In a sense, they are a fixed cost of the health infrastructure. That fixed cost can consume a high proportion of health budgets even when hospitals are deemphasized, as in Tanzania. The real equity issue is how the needed hospitals are paid for. The problem is not only nor even primarily that developing countries' health systems are hospital-based. It is that public spending for health is hospital-oriented, and thus benefits the rich disproportionately.

² "Poor" and "rich" are relative terms. The definition of poor in each country will depend on a country's overall income structure and social objectives.

³ When health services are provided through tax revenues, who benefits is further modified by who pays the taxes. Tax burdens in developing countries are generally thought to be proportionately distributed at best.

Box 2. Organization and Financing of the Health Sector in Zimbabwe

Reliable and complete information on developing country health systems is rare. Zimbabwe, a country with relatively good data, provides a typical example, though even for Zimbabwe assumptions must be made in order to provide a full picture.

General information. Zimbabwe is classified by the World Bank as a lower middle income country. It occupies a position around the median of most development indicators. Female life expectancy is about 59 years, infant mortality is 77 deaths per thousand live births, and there are about 7000 people per physician. It has a small population, about 8 million people, with only 21 people per square kilometer, of whom about 30 percent live in cities.

Hospitals. The country has a public hospital-based health system run by the Ministry of Health and local governments, along with a rural mission system, which is also hospital-based, and a network of urban and rural health centers. Large industries and mines maintain hospitals and clinics for their own employees. The private modern sector, although large, accounts for only a tiny proportion of hospital facilities. In the figure below, the first bar represents the total number of hospitals, and it is divided into four sections to show the proportion of hospitals owned by the four components of the health system.

Clinics. Outside the hospital sphere, estimates are necessary. To determine the number of outpatient facilities, shown in the second bar, we assume that all hospitals provide outpatient services and that half the doctors classified as private offer clinic services. The numbers of clinics represented by these two groups are added to known government clinics and estimated mission facilities to get an estimate of the total. Even with this conservative estimate of the size of the private sector, it accounts for about 40 percent of outpatient facilities. The private clinic sector is large relative to the private hospital sector because public hospitals allow privately attended patients.

Personnel. Zimbabwe requires annual registration of medical personnel. After accounting for physicians and nurses employed in the government, missions, and industry, there is a large residual in the third and fourth columns of the figure, labelled "private". (Some of the individuals may be retaining their licenses even though they are not practicing or are practicing in a different country.) About 92 percent of government physicians and nurses work in hospitals; government clinics are almost completely staffed by paramedics. Zimbabwe has a traditional healer registry that has so far tallied 11,000 traditional doctors. The total number of physicians, nurses, medical assistants, and health aides in the modern sector was just 11,159 in 1980.

Revenues. Although government and mission facilities charge user fees, people earning less than Z\$150 a month are exempted. To offset the resulting loss of revenue in non-MOH facilities, the Ministry of Health contributes about 76 percent of the cost of rural clinics (with local

governments contributing the balance) and 85 percent of recurrent expenses in mission hospitals. In addition, part of the cost of medical care in private industry is borne by the government through tax rebates. The Ministry of Health recovered about 4 percent of its total expenditure through user fees or insurance payments in 1980/81.

The private sector portion of each bar in the graph includes one known private expense, payments by insurance companies. The other components are estimates. Individuals are assumed to have paid fees directly to private physicians amounting to 10 percent of total insurance payments, to have purchased pharmaceuticals totalling 50 percent more than the Ministry of Health bought, and to have used the services of 20,000 traditional healers and midwives often enough for each to earn the average per capita income for Zimbabwe of Z\$400. These conservative assumptions generate roughly a 60/40 split between government and nongovernment expenditures. Foreign aid accounted for less than 1 percent of the total, a low proportion for Africa.

Insurance. Private insurance is relatively well developed in Zimbabwe and takes the place, along with medical services run by mines and other industries, of social insurance systems that are more common in Latin America and Asia. There are five voluntary insurance schemes, one of which is for government workers, covering about two-thirds of resident Europeans but less than 1 percent of Africans. Another scheme is run by the government for public and parastatal workers. Half of premiums are paid by workers and half by employers, but both receive tax rebates for part of the payments.

The government further subsidizes private insurance by charging far less than actual costs for hospital stays. For example, about 7 percent of total insurance expenditures went to the top Ministry of Health hospital, where charges covered only an average of 28 percent of costs in 1979. Most insurance expenditures go to private sector facilities and providers, even though the public sector supplies most of the hospital services.

Public health and preventive care. In 1980/81, approximately 8 percent of the Ministry of Health budget was spent on preventive services.

Conclusion. Zimbabwe's system is typical of other developing countries. Public expenditures are largely urban. Ministry of Health expenditures are almost entirely for curative care, and the government heavily subsidizes medical care for citizens working in the modern wage sector of the economy. Available data have common shortcomings. There is little information on the private or traditional sectors, including who uses them, how and how much users pay, and how much is spent for what drugs. For the public and private systems together, it is difficult to distinguish patterns of usage by different population groups. There is no information about how facilities are distributed throughout the country, how busy they are, or which income groups benefit from the public subsidies.

Sources: "Zimbabwe: Population, Health and Nutrition Sector Review (in two volumes)," (1983).
World Bank. "World Tables (Third Edition), Vol. II," (1984).

Box 3. Primary Health Care: Resources and Costs

The World Health Organization's Global Strategy for Health for All by the Year 2000, published in 1981, estimates that the cost of achieving primary health care for all people in developing countries is approximately US\$30 billion annually (or about US\$10 per capita) for 20 years (1980 to 2000). The amount now being spent on health services by public and private sources combined in the same countries is about US\$40 billion (US\$13.3 per capita) annually. Given these needs and approximate overall spending, could primary health programs be financed simply by redirecting existing public, private, and foreign aid expenditures in developing countries away from hospital-based systems?

Some such redirection might be possible. But it will not alone solve the resource problem.

First, even if all hospitals were closed down and the money used for operating them were put into rural health services, the available real inputs needed to produce health services are simply not widely available. Manpower is an example. The developed countries have slightly over nine times the number of physicians per capita and about 18 times the number of nurses per capita (WDR 1986) as developing countries. The United States has 800 people per physician compared with 3000 people per physician in the Philippines; even assuming some waste in the United States, a tenfold difference is dramatic.

Second, reallocation away from hospital care is not easy. First, there is the physical impossibility of turning a few large and costly hospitals into many small primary level health care units or of turning a nation's highly trained doctors and nurses into less trained and less expensive primary health care workers. Such facilities and personnel are not easily transformed; thus new primary level health care facilities must be built and new lower level personnel trained to carry out primary health care duties. Second, even if such facilities and personnel could be transformed, a system without any high level personnel and facilities would not be desirable. Some high level facilities and personnel are needed, as the point at which the overall referral system legitimately ends.

It is the financing of expensive hospital care that needs change, not the existence of the care per se. Government must find ways to charge those who are able to pay for the benefits of publicly-provided curative care, freeing limited public funds for critical "public good" health programs and for subsidizing care for the poor.

Sources: WHO, (1981).
World Bank, World Development Report 1986, (1986).
Patel, (1986).

[End of Box 3]

Box 4. Urban Orientation of Public Health Spending

Disparities in public spending between urban and rural areas are common. Per capita public expenditures on health care in urban areas are often over three times as high as in rural areas. National health expenditure data are not usually sufficiently disaggregated to show intra-country differences. Data from China, Senegal, and Peru do allow examination of spending patterns in those countries.

China

In China, there is a pronounced urban focus of health subsidies, primarily caused by state subsidies to urban beneficiaries of the compulsory Government and Labor Insurance schemes. Total expenditure per capita in 1981 was estimated at \$6 for rural areas and more than triple that amount, \$19, for urban areas. State subsidies to the health system averaged less than \$2 per capita in rural areas, but urban areas received almost ten times as much, \$15 per capita. Furthermore, private expenditures by rural residents were higher than by urban residents, about \$3 compared to \$2.

Following the collapse of the rural cooperative insurance system as a result of the recent economic reforms in China, the great majority of rural people now have no insurance coverage to protect against the financial risks of ill-health. These risks can be substantial in the Chinese health system which is characterized by a high degree of cost recovery--hospitals typically recover about three-quarters of their operating costs through user fees and drug sales. Recent survey estimates indicate that the cost per hospital admission averages about \$75 for urban residents and \$36 for rural peasants. With rural incomes averaging as little as \$85 per capita in some regions, these costs are virtually unaffordable for many rural people. By contrast the majority of urban residents benefit from state subsidized health insurance--about nine percent of the population are covered by the Government Insurance Scheme and another 57 percent by the Labor Insurance Scheme for state enterprise employees and their dependents. These schemes provide free medical care (no deductibles or copayments) for their primary beneficiaries and the Labor Insurance Scheme reimburses 50 percent of the costs for dependents.

Senegal

In smaller developing countries, public health sector investments and recurrent expenditures tend to favor the national capital area. Inequality in the availability of health resources is compounded by the fact that referral systems rarely function to ensure equal access to health care by those living in rural areas. Of the 10 national and regional hospitals in Senegal in 1981, three, including a university hospital center, principally served Dakar and the Cap Vert region. The Fleuve department in the north was served by three hospitals, while two other departments, Louga and Senegal Oriental, had no regional hospital at all. The ratio of population served per hospital bed ranged from 426:1 in Cap Vert to 7254:1 in

Casamanka. Fifty percent of new investment funds are earmarked for the capital region.

The urban/rural distribution of supplies and manpower follows that of hospitals. Seventy percent of Senegal's physicians and pharmacists, sixty percent of its midwives, over forty percent of its nurses, and virtually all of its dentists are concentrated in the Dakar-Cap Vert region, where less than thirty percent of the population lives. In 1981, the Dakar/Cap-Vert hospitals received seventy percent of the hospital drug budget, which is equal to fifty percent of the national drug budget. Health centers, the secondary level of health care, received 32 percent of the national drug budget, which they are supposed to share with health posts the primary level. In practice the latter receive little, and annual pharmaceutical supplies at the health post level are usually exhausted within six months, requiring local populations to purchase their own drugs over the counter.

Overall, the Dakar/Cap-Vert region received almost 60 percent of the national drug budget in 1979/80. The Fleuve department, with 10 percent of the population, received 13 percent of the drug budget. The 6 other departments, with 60 percent of the population, received less than 30 percent of the national drug budget.

The rural health system has fallen into relative neglect due to the diversion of resources to urban curative services. Out of 36 health centers in 1980, only 24 were considered operational. About half of Senegal's 492 health posts are in poor operating condition. Many health centers are thirty to fifty years old and lack basic amenities such as water, latrines and electricity.

Peru

National per capita public and private health expenditures in Peru amounted to about US\$59 in 1980. While 27 percent of the total population in 1981 lived in the metropolitan area of Lima, the percentage of total public spending increased from 37 percent to 47 percent from 1970 to 1981. Per capita Ministry of Health expenditures in Lima were nearly twice that spent in the San Martin Amazonas department and over five times that spent in Cajamarca, the most rural department.

Of total public health care expenditures in 1980 and 1981, 87 percent was spent on curative care. Over the 1978-81 period, on average 11 percent of the Ministry of Health's budget was spent on capital expenditures, primarily for the construction of hospitals in cities. Two-thirds of all doctors live in Lima, which has only 29 percent of the country's population. In most rural areas there is only about one doctor per 10,000 or more inhabitants.

Sources: Prescott and Jamison (1984).

Prescott and Jamison (1985).

World Bank. "Senegal: Rural Health Project; Staff Appraisal Report," (1982).

Mashayekhi, (1981).

World Bank. "Peru: Primary Health Project; Staff Appraisal Report," (1982).

Chester (1982).

[End of Box 4]

CHAPTER 2

POLICY REFORMS

Four policies to help address the problems of national health systems are discussed in this chapter. The policies share two common characteristics: they shift some of the burden of financing health care from the public sector to the beneficiaries--households; and they shift some decisionmaking from central planning agencies to those in closer touch with local conditions and client needs. The policies are described in broad terms--their specific application will be different in different country situations. The four policies are best thought of as a package; they are closely related and they mutually reinforce each other. Most countries could benefit from adopting only some parts of the package, and some countries may wish to move more quickly on some parts than on others. But in the long run, because the policies are complementary, all four merit consideration.

The four policies are:

- Charging users at public health services, especially for those types of curative care which benefit solely individuals and their families;
- Encouraging risk-coverage programs;
- Strengthening nongovernment sector provision of health services for which households are willing to pay;
- Decentralizing the public health system.

These policies alone will not rectify all health sector problems. They will not immediately help countries rectify the big investment mistakes -- investing too much in urban hospitals or in the wrong training facility. Nor are all aspects of these policies easy to implement: user charges must be designed to protect the poor; insurance programs are difficult to run in rural areas; decentralization of the health system may be resisted by other parts of government.

On the other hand, policy changes of the types proposed are already underway in many countries, in at least partial response to the sector's problems. Many of the details of such policies can be designed only at the country level; and only at the country level can their effects be fully evaluated and specific designs altered with experience. And as argued below, any substantial improvement in the effectiveness and fairness of national health systems is difficult to envision without change in policies along the lines proposed.

Charging Users of Government Health Facilities

Government health facilities in developing countries tend to charge no fees or very low ones for services, drugs and other supplies. An outpatient visit for an adult in Botswana, Burundi, Lesotho, Pakistan, the Philippines or Rwanda costs less than one third of the average daily agricultural wage. In Indonesia the cost is about one half the daily wage. In Malawi, Mali, Burkina Faso and Zimbabwe, the visit is free. How would increases in charges to users--even modest increases--help solve typical health sector problems?

First, higher charges at government health facilities would generate more revenue. In the long run, more revenue would allow expansion of currently underfunded but cost-effective basic health services, helping governments redress the allocation problem. In the short run, revenues from charges can be used to cover a substantial portion of the operating costs of current programs, especially programs of simple curative care. In Colombia and Indonesia, more than 15 percent of operating costs of the system as a whole are covered by fees. Health projects in Mexico, India, Indonesia, Zaire and Sierra Leone cover 20 percent or more of recurrent costs with fees; a project in Cameroon covers 95 percent of its costs with fees. Mission facilities in Africa cover as much as 70 percent of their costs with fees. These examples suggest the likelihood that in many settings, even relatively poor ones, governments could recover 15-20 percent of operating costs. On the one hand, this is not much. On the other, it is a substantial part of nonsalary costs--which as noted above tend to be underfunded.

Second, higher charges could improve access of the poor to health services. It appears that free health care would make it easier for the poor to "afford" services. But appearances are deceptive. As discussed in Chapter 1, because 60 to 80 percent of public funds are absorbed by urban, hospital-based care, it is often the middle class and the rich, not the poor, who benefit most from free services. Though the pattern of subsidizing urban hospital services may help the urban poor, it can leave the rural poor underserved. Even if the free services were available in every area, so that the rich and poor appeared to have equal access, this would not be the case. Because a consequence of greater wealth is greater ability to afford the travel and time costs of obtaining care, the rich inevitably enjoy more of the subsidized free health care than do the poor. Imposition of fees makes it possible for government to generate revenue to extend appropriate services to the underserved. The charging of appropriate fees to the rich also removes much of the unfair subsidy inherent in free care approach.

Third, even modest charges to users are likely to make delivery of government health services more efficient. Consumers will be more sensible in their demand for services. A system of fees to reflect the relative costs of the services will charge more for hospital than for clinic visits, encouraging proper use of referral systems. A small charge for a visit may help discourage patients from seeking types of services they do not really need--say, hospital care by a doctor for a minor ailment that a visit to a

clinic paramedic or home help could handle (though time and travel costs are probably more important than any small fee in discouraging frivolous use of services). Different charges for different types of services can also signal to consumers the importance of certain kinds of care; for example, the same health center could charge a low or zero charge for prenatal care and a higher charge for regular outpatient services. Fees also encourage efficiency on the supply side. Wasteful overprescription and multiple prescribing are serious problems in developing countries. In public facilities health providers will be less inclined to overprescribe if they know patients must pay for drugs. Pilferage and spoilage of drugs and other supplies are also likely to decline if providers of these goods are accountable for their charges collected. Providers are likely to be more responsive to the concerns and needs of clients. The use of fees for funding some costs of health services, by linking revenues to performance, gives staff an incentive to provide good care. If clients are not attracted to a facility, a problem will be obvious. In contrast when either few patients use free services or those who use them would not if they were not free, there is no signal of a problem to higher management. For example, the institution of fees at public facilities in a part of Nigeria led to a sudden drop in utilization, and recognition by the authorities of serious problems of service quality.

Should All Services Have Fees High Enough to Cover Costs?

Full cost recovery is not appropriate for all health services. The textbook rule is that, given certain necessary conditions, the price charged for a good or service should equal the additional (or marginal) cost of providing it.¹ This pricing rule in most cases assures that prices charged will cover costs, and that there will be an efficient allocation of resources throughout the economy. But the necessary conditions are not fulfilled for every kind of health service. Where they are not, exceptions to the price rule are appropriate. (In some cases it even makes sense to charge users nothing or to offer them incentives or subsidies for using the service.) What are the conditions, and when are exceptions justified?

Externalities. When the benefits to society of an individual consuming a service exceed the benefits to the individual, the individual will not purchase enough of the service, from society's point of view, if he or she must pay the full cost. Immunization against contagious disease has such a positive externality. But most curative hospital care does not; all the benefits of a mended broken bone are captured by the patient.

Incomplete information. If people do not know enough about their own or their family's health needs, or about what health care can do for them, they are likely to purchase more or less than they would if they had complete information. If mothers do not know that infants with diarrhea need liquids, they will not purchase oral rehydration solution. Prenatal health care, well-baby care and family planning are other examples of

¹The marginal cost is the cost of supplying the last unit provided.

services that have benefits of which may not be fully known to all consumers.

A low or zero price is one way to encourage use of a new and valuable but not fully understood service. But four points must be made about this information argument for low fees. First, the argument seldom justifies subsidies that are not fully complemented by education and information programs. Second, the argument may justify subsidies for some period of time, but not indefinitely. At some point, as consumers become aware of the private benefits of such services, they will be willing to pay an amount that permits full cost recovery. (Much of the preventive care about which consumers will eventually learn is relatively cheap to provide, however, and the costs of collecting small fees could even exceed the amounts collected.) Third, as with the externalities argument, the information argument does not justify subsidies for all types of health care. The problem of incomplete information much less often applies to curative services, because most people who are ill know they need health care. Fourth, lack of information does not necessarily justify zero prices even for services about which consumers are uninformed. A modest charge that is lower than marginal cost may in fact be a proper way to create incentives for efficient consumption and delivery of services. For example, charging for drugs may be the best way to make the distribution network responsive to "consumer" demands in rural areas, both in terms of quantity and type. A lack of information does not justify wholesale abandonment of marginal cost pricing policies. In fact, it suggests that information or health education programs should be subsidized, perhaps accompanied by subsidized health services as part of a marketing strategy.

The free-rider problem. The benefits of certain health-care services--disease control and monitoring programs among them--cannot be selectively provided, only to those individuals willing to pay and not to others in the same area. When killing flies, snails and mosquitos which carry parasitic diseases or monitoring epidemics, entire regions must be blanketed. It is simply impractical to charge since no provider-client transaction takes place. For most clinic services, however, there is no free-rider problem.

Failure in insurance and other markets. Lack of an insurance market could make it impossible for individuals to consume some kinds of health services even when they perceive the benefits of doing so, and would, through insurance premiums, be willing to pay the costs. Formal risk-sharing schemes to cover curative health care are rare in rural areas of developing countries. In Africa and South Asia, except for employees of governments and large enterprises, insurance is not common even in urban areas.

Lack of an insurance market does make it difficult to charge the full costs of expensive, hospital care. But it does not rule out charging small amounts that at least deter frivolous use and raise some revenue.

The equity argument and "merit goods." The exceptions discussed above all argue against full marginal cost pricing on efficiency grounds, that is, on the grounds that marginal cost prices would not lead to the best

allocation of resources. There is a separate equity argument as well. Some basic services, if priced at marginal cost, might not be purchased even by well-informed consumers due to insufficient income. Government may want to guarantee minimal consumption of "basic needs," (what economists refer to as "merit goods") or redistribute income in a politically acceptable manner, namely by taxing the rich to provide basic services to the poor.

This equity consideration argues particularly for subsidies to services that primarily serve the poor, such as rural health posts. In general, these have not absorbed large proportions of public health funds.

* * *

There are, in short, good reasons for charging less than full costs in the provision of public health. Three points, however, should be borne in mind:

- Because a low or zero price is justified for some health services, it is not justified for all.
- Even when some subsidy is justified, a large subsidy (large enough to keep the user price at zero) may not be.
- Even when some subsidy is justified for some period of time, it may not be justified indefinitely.

What System of Charges is Practical?

Actual experience in a few countries provides a practical guide on which services should carry fees, and what sequence of introducing fees is politically and administratively possible. Whatever fee system is selected, it should be flexible enough to allow increases and decreases in fees. Flexibility allows adjustment for changes in utilization patterns and the effects of inflation. Failure to raise fees with inflation has reduced revenues in many countries in the last decade.

The theory outlined above indicates that fees should be implemented first and be highest for curative care. Most curative care is inpatient hospital and clinic care, although some is hospital outpatient care. Except when a poor person is exempted for equity reasons, most outpatient and inpatient curative care should be provided in public health facilities only for a fee. Such curative services often account for 60 percent of total public sector health spending. Thus even fees which covered only a portion of the resource costs of such services, say one-third, could recover as much as one-fifth of the health system's total cost.

However, until insurance is widely available, anything more than nominal daily charges for hospital and clinic stays may be impractical and

unduly burden the unlucky sick. What kinds of fees are practical in the shorter run, and already in use in some countries?

- Hospital charges for private patients. Publicly-run hospitals often permit access by private physicians and private patients. In Zimbabwe, Botswana, and The Gambia private patients are charged for use of private rooms; in Botswana, the government is considering raising private fees above costs in order to subsidize public patients. In public hospitals in Indonesia, fees collected from the more affluent who elect semiprivate care are used to subsidize general ward patients; the cross-subsidization is large enough to underwrite free accommodation for indigents. Private physicians can also be charged for use of public hospital facilities, or patients using private physicians could be assigned, without choice, a private ward, and charged more than other patients.

- Hospital charges payable directly by insurance providers for insured patients. If participation in some sort of insurance scheme is compulsory for certain groups (public employees, formal sector employees) the full costs of those patients can be covered. To ease the administrative burden on hospitals, insurance providers could be billed full costs; they in turn could bill their clients any applicable deductible or copayment costs. The issue of insurance is discussed below.

- Drug charges. Instituting charges for drugs should be high on the list of possible cost recovery steps because (i) there is widespread acceptance already of the idea of purchasing drugs (a private market exists in virtually every country, even in those in which drugs obtained through the public health system are free), (ii) where the procurement and distribution of drugs in the public sector is inefficient, the ability to charge for drugs provides the public a useful management incentive, and (iii) in a revolving fund system in which revenues from charges are an important source of replenishment of drug supplies, accountability of managers and distributors can be built in and collection costs should be low (see Box 5).

<p><u>Box 5</u> Village Health Worker Financing and a Revolving Drug Fund in The Gambia [Attached at end of Chapter]</p>
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- Bypass fees. In countries where a referral system exists, higher fees should be charged for simple types of care at referral facilities. Under such a system, a person who bypasses a lower-cost level of service to go directly to a higher-cost level pays a fee at the higher level greater than would be paid for the same service at the lower level. The higher fee reflects the higher cost of providing low level services at high level facilities and provides an incentive for patients to enter the referral system at the appropriate level. Eventually (as soon as practicable) higher level facilities should cease to provide low level services.

- Modest inpatient charges (hospitals, other levels). There are many choices: a fixed fee at entrance, regardless of length of stay; a charge for use of linen, meals, etc., i.e. replenishables, with total cost to the patient rising with length of stay; specific charges for identifiable goods,

including drugs, x-ray and laboratory services; a comprehensive schedule of fees for different services. A simple structure with low administrative costs may yield higher net revenues than a complex schedule which will discourage enforcement.

- Outpatient fees (hospitals, other levels). A few countries charge a fee for an initial visit. A small charge for the registration card or other record of visits (e.g. for prenatal and pediatric care) could increase patients' incentives to keep and remember to bring their card on all visits.

How High Should Charges Be?

For most types of curative services for which some charge is appropriate, the amount of the charge or the price should generally equal the cost of providing that service. Thus a typical schedule of charges has lower charges at the primary level of service--say local dispensaries, where personnel and other costs are generally low--and successively higher fees at higher levels. (Such a schedule also allows for use of a bypass system.) However, the true cost of many health services is difficult to calculate. For example, because most services are provided jointly with other services, the time devoted to a particular service by doctors, nurses and other providers is not usually clear. For hospital, clinic and other curative services, governments will usually want to implement a pricing reform by starting with low fees that are clearly affordable to the bulk of the population--for example, assuming an average of two clinic visits a year, a fee that would not exceed 1 percent of per capita income for most families. (Table 5 provides some actual examples.) When low fees are already in place, a similar rule can govern increases in fees. Experience is then likely to indicate whether prices are too low or too high. They are probably too high if use drops by more than, say, 20 percent (and stays low for more than a few months) or certain key groups cut back on their use. For such services as hospital surgery and intensive care, sudden fee increases to cover full costs would financially overburden many households. Only as opportunities to participate in risk-sharing (insurance) schemes expand should these fees be raised substantially. But extension of insurance to cover the bulk of the population will take time--in some cases, ten years or more.

When a direct comparison between public and nongovernment facilities is possible, a useful indicator for setting fees is the fee charged for the same service at private, including mission, facilities. In most developing countries, private health-care providers charge higher (often much higher) fees than does the public sector. In Kenya, the average charge for a day of inpatient care at six missionary hospitals is more than twice that at government hospitals. In Thailand, the fee private practitioners charge for an outpatient consultation is typically 50 percent higher than at public clinics, and in the Philippines it can be twenty-eight times as high. In Peru, the prices for medicine at retailers are sometimes more than three times the official price at government facilities (where unofficial side payments are nevertheless common and medicines are often out of stock).

Table 5. Typical Charges, Public Health Facilities, Selected Countries

Country	Services					
	Out-patient consult	Drugs	In-patient fees	Immuni-zations	Maternal & Child Health	Delivery
Botswana, 1983	\$0.45	free			\$0.45	\$0.55
Burkina Faso 1982	free	free	minor	\$0.12 per registr.		
Burundi, 1983	\$0.22	free	\$2.20/ week		free	
Cameroon, 1983	free	free	\$2 regis- tration			
China, 1982	regist. fee	15-30% above whole- sale	charge for room, food, treatment	service fee	free	
Ecuador, 1985	free	charge	free			
Ethiopia, 1984	\$0.25-0.50	cost price of drugs	\$1.09-\$14.53			
Ghana, 1980	charge		charge			
Indonesia, 1983	\$0.36	free	charge for room and treatment			
Jamaica, 1985	\$0.90	\$0.90	\$5.60		free	\$9.30
Lesotho, 1980	\$1.20	free	\$0.60/day & treatment			
Malawi, 1981	free	free	free	free	free	\$1-3
Mali, 1982	free	free				
Morocco, 1985	free	free	free	free	free	free
Pakistan, FY82	free 2 (provinces) Rs 1 (2 provinces)		charge (2 provinces)			
Philippines 1982	free	free	charges			
Rwanda, 1977	charge		charge			
Togo, 1979			\$0.50-70/ day & treatment			\$1-2
Uganda, 1985	free	free	free	free	free	free
Zimbabwe, 1983	free	free	free	free		free

Notes: When drugs are included in the outpatient consultation fee, they are recorded as free. Although not noted, most countries have a special fee schedule for "private" in-patients who desire superior accommodations.

Source: Ainsworth, 1984, p. 15, and World Bank Sector Reports.

In parts of Java, a visit to a traditional practitioner may cost a person ten times as much as a visit to a public clinic.

Can Most Households Afford Higher Charges?

Household spending on health care equals 2 to 5 percent of annual household income in many developing countries. Rural households often spend much more in years of poor health; survey evidence shows drug purchases alone take up 5 percent of income in parts of rural Mali, and in Malawi and Indonesia fees of traditional practitioners may take up 10 percent of annual income. On the one hand this is already a substantial amount, and additional fees and charges at public facilities might be difficult to bear. On the other hand, that level of spending indicates an ability and willingness to pay for traditional curative care and perhaps for some ineffectual drugs which the public sector could tap to finance modern curative care and effective drugs (freeing public funds for preventive programs).

Most households could probably afford modest fees at public facilities. Consider as an example a fee of U.S.\$0.25 for an outpatient visit. A four person household with a low per capita income of US\$200 annually would spend just 1 percent of income to reach the WHO norm of two visits per person per year. A household with only half as much income (US\$100) would require 2 percent.² Charges to cover the cost of drugs in public facilities might actually reduce overall household spending on drugs, if the result of charges were to provide funds which were used to make drugs more often available in public facilities, saving clients the higher costs (and sometimes wasteful overprescribing) of private pharmacists. The availability of drugs in public facilities would provide effective competition for the private pharmacies and eventually drive down high profits often possible because of their near monopoly over available drugs.

Existing private spending suggests consumers would be able to pay for public health services. But would they be willing to pay, or would they simply stop using public services? The evidence from household surveys of health care utilization is clear on this point: fees per se are not critical in determining utilization. Studies in Malaysia and the Philippines show that proximity and quality matter more than fees in determining whether and what type of health care individuals use. If public

²The question of affordability arises in many countries in a context in which user charges are simultaneously being introduced for other public services as well: education, water supply, irrigation, and so forth. This is not an issue which can be treated adequately in this paper. However we do note that (1) user charges for health would be small compared with new charges for water, electricity, even education; and (2) user charges at public facilities might not raise total household spending, but simply divert spending away from less effective traditional care and nontherapeutic drugs.

services are not of good quality or are too far away, even free services will not attract clients. In the Philippines, the frequency of visits to private (including traditional practitioners) instead of public services was not affected by relative fees, despite the fact that the nongovernment clinics and hospitals had average charges 28 times as great as the government clinics and hospitals. Even demand for preventive care for mothers and infants was found not to be particularly sensitive to fee level.

Studies to date, however, have not examined in detail the differences between the non-poor and the poor in their responses to prices. Even though very little if any reduction in overall health care use appears to result from moderate price increases in many developing countries, it is plausible that the reduction of use by the very poor is greater than average. For that reason fee systems must be designed to protect the poor.

What About the Poor?

How can the poor be safeguarded from unaffordable costs?

Ironically, the poor in some cases may be better protected in the private sector. A sliding scale of fees, allowing low or even no charge for the poor, is common on an informal basis in missions and at the village level, where ability to pay of any individual household is widely known. (Traditional practitioners are known to charge different patients different amounts depending on patient income.) But a sliding fee schedule in a formal public system would be high in administrative costs, and experience with this approach is lacking.

Employer and community insurance schemes, discussed below, can help, but the very poor are those least likely to be included in such schemes. Some form of differential pricing (whereby disadvantaged groups, households, or individuals would be charged smaller fees) is thus necessary in public systems.

One practical approach is to charge different fees based on where users live. For instance, people in predominantly poor rural areas would pay a low or even zero charge while those in urban districts pay more. (Though some travel of urban residents to free rural health posts is possible, travel and time costs and perceptions of higher quality care in urban areas are likely to obviate this problem.) Combined with higher charges for hospital care, these would not only protect the poor, but would improve the targeting of existing government health spending. Higher charges even for the apparently same service in urban areas may be justified aside from concern for the poor--since urban services are usually better staffed and equipped. Another option is issuance of vouchers to the poor, based on certification of poor households by local community leaders (a practice which appears to work well in Ethiopia). Other options to protect the poor include allowing staff discretion in collecting charges (though this is difficult to do in the government sector), or in middle-income countries the use of means tests (which often already exist for other programs). A few countries, including Jamaica, Indonesia, and Thailand are experimenting with

more or less formal income tests, relying either on self-declarations by patients or on documentation from the patient's village headman or other community leader. In Thailand a means test establishes eligibility for a "free card" program which is coordinated with the use of health cards which are not free in a rural risk-sharing scheme (see Box 7 below). Finally, some of the above suggestions for fees, such as higher fees for private and semi-private accommodation in public hospitals and free or low-cost care at referral facilities for patients referred from lower level facilities, also implicitly protect the poor.

Providing Insurance Or Other Risk-Coverage

If initial cost recovery measures are confined to small bypass and outpatient fees for regularly used services, and to payment for frequently used pharmaceuticals (aspirin, chloroquine, contraceptives), the issue of insurance can safely be ignored. This may be a reasonable strategy in the short run, especially for low income countries. There are several problems with this strategy in the long run, however:

- An equity problem--like an indirect tax, these routine charges place a higher relative burden on the poor, given their lower income.
- A revenue problem--the proportion of total costs that can be recovered is not likely to be high.
- An efficiency problem--the structure consisting only of low fees does nothing to discourage excess demand for high cost hospital care; some of the potential efficiency gains of fees are forfeited.

Fees that would cover full costs for major hospital and other inpatient treatment do not present these problems. But inpatient care, though of low probability for any particular household, is expensive. Thus full-cost fees cannot be introduced until large parts of the population participate in some form of risk-sharing: either "insurance," under which fees paid by users are reimbursed by the insurer; or "prepayment" systems, including health maintenance organizations (HMOs), under which all participants regularly pay a fixed amount and in turn receive full care.

The Situation Today

Such programs, however, currently cover only a small proportion of low-income households in most developing countries, and especially in Africa and South Asia. Outside of China, no more than 15 percent of the people in developing countries take part in any form of risk-coverage scheme. Adding China boosts the figure to between 15 and 25 percent, reflecting China's urban risk-coverage program (which covers the majority of urban residents), some coverage in rural areas (though rural coverage has declined with the recent privatization of production), and the large population. (In a sense, of course, risk-coverage plans have existed ever since the extended family

has existed; in many developing countries the family is still the most important mechanism for sharing risk.)

Perhaps the most important form of health insurance comes through government-sponsored social insurance programs, most common in the middle-income countries of Latin America. In Brazil and Chile, social insurance plans provide health coverage for more than 85 percent of the population. Government-sponsored social insurance is often compulsory for public employees. Such a public employee system in India serves about 5 percent of the total population, and covers its own costs. Thus at least part of the population directly pays for its health care. In Indonesia, there is some evidence that the insured in a compulsory public employee insurance program provide a slight subsidy to the public health system.

Employer plans are a second category of coverage. They either provide care directly through employer-owned, on-site health facilities, or rely on contracts with outside providers or health-maintenance organizations. In India, employers that sponsor group policies can turn to the private market, or can, under certain conditions, join the public employees' government-run scheme. In Chile, individuals or employers can form health insurance plans into which employee contributions which otherwise would go into the public insurance system are paid. Agricultural estates, such as banana plantations in Honduras, rubber forests in Zaire and Liberia, and tea estates in India, typically use the direct pattern of care, maintaining their own medical staffs and health facilities in the rural locations where their employees live and work.

In a third category of risk-sharing are prepayment plans; individuals form or join a group to which they make payments in return for the receipt of needed health care. Within this category fall personal prepayment plans, community-sponsored plans (such as a village fund for purchasing medicines or a broader self-supporting network of local clinics) and cooperative-based programs (such as a dairy farmers association in India or a coffee-growers group in Colombia). Prepayment plans include health maintenance organizations, and so-called preferred provider plans (Box 6). But prepayment and community plans remain both few in number and small in scope--probably reaching less than half a percent of those not covered by social insurance or an employer plan.

<p>Box 6 Prepaid Health Care Organizations [Attached at end of Chapter]</p>

Finally, there is private insurance to cover fees. In countries where most health care is provided by the public sector at low or zero cost to users, the market for private insurance is limited to those who wish to use private practitioners. In Zimbabwe, the majority of holders of private insurance are high-income Europeans; large tax rebates on their insurance premiums mean the public system is actually subsidizing them. In Jamaica, private insurance has become increasingly popular for those who desire better service than the public sector provides, and in Brazil private insurance is increasingly available.

Many countries are already taking steps to extend risk coverage. In Indonesia, there are plans to broaden the government program to cover all employees of private firms. In Thailand, an innovative health card system is providing risk coverage for some rural people (Box 7). In Latin America the percentage of the population covered by social insurance rose from 21 percent in 1960 to 40 percent in 1980. Risk-coverage programs that did not exist twenty-five years ago now serve millions in Egypt, China, and the Philippines. Most employer plans, other than those of the older agricultural estates, have either come into being or been rapidly enlarged in recent years, as have all but a handful of the community and cooperative schemes now operating.

<p><u>Box 7</u> Rural Risk Coverage: Thailand's Health Card System [Attached at end of Chapter]</p>
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But change is slow. In most countries governments that are introducing cost recovery in the health sector face the question of what to do to encourage or provide systems of risk-sharing that cover much larger proportions of the population than are now covered, at reasonable administrative cost.

How Can Government Encourage Risk-Sharing?

In any risk-sharing scheme, small amounts of revenue are collected from each participant (or from taxpayers) when the risk-sharing is accomplished through a national service type system so that the large cost of unexpected events can be shared. The only "economic" cost of risk coverage scheme is the administrative cost. At the societal level, risk-sharing makes sense under certain condition: when the event insured against is largely unpredictable and the event's likelihood cannot be significantly reduced by the behavior of the individual; when the cost of the event's occurrence is large; and there is consensus that remedies are necessary to alleviate the harm caused by the event. In health, such is the case. The probability of the need for medical care (of the unpredictable and nonvoluntary type) is generally low while the cost to those stricken may be very large.

Thus there ought to be a viable market for health coverage. Why is such privately provided coverage so limited in developing countries? There are at least two reasons: First, as long as services in the government sector are free (or almost free), only those willing to pay extra to use private health care will be interested in risk coverage. Of course, if higher charges are introduced for once-free government services, this problem will disappear. Second, and more problematic in the long run, the administrative costs of organizing risk-sharing programs, monitoring service, making payments, and so on, may be very large in countries where communications are poor and literacy is low.

Under this second circumstance, what can government do to encourage viable, low-cost risk-sharing? Two approaches will help:

- Making coverage compulsory. An effective approach is for government to make health insurance compulsory, at least for employees in the formal

salaried sector.³ (As explained below, this need not imply government itself is the provider of insurance, though it may be.) Making coverage compulsory has several attractive features. First, the more participants there are, the larger the revenue collected. A higher proportion of the costs of health services not covered by fees will be recovered via the insurance system. Second, a large number of enrollees spreads risks widely, making the system more viable and more fair (see Box 8). The burden of caring for those who, if allowed would choose not to protect themselves against the risk of illness is removed from others. Third, a large "market" is created; this will encourage private suppliers to enter the market and introduce a range of alternative risk-coverage plans to attract customers. The government under such a system could collect compulsory premiums, but allow consumers to subscribe to any one of a number of government or nongovernment risk-sharing systems. Fourth, but not least in importance, with compulsory coverage the problem of adverse selection, the tendency of the healthy to avoid joining or paying their premium, is effectively avoided. With adverse selection those who remain in the plans, usually the less wealthy who also suffer more illness, will face larger and larger premiums as the average health level of the members decreases. Some would suggest, however, that if some illness is due at least partly to poor habits (smoking, drinking, lack of exercise, or poor dietary choices), the careful, diligent, and strong-willed are paying for health costs of the lazy, careless, and self-indulgent. In practical terms, perhaps little can be done about this unfairness, other than to assure that the plan covers a large and diverse enough group to spread the risks related to poor habits, and to retain deductibles and copayments to reduce the attractiveness of the use of health-care services.

<p> Box 8 Social Security Financing of Health Care in Latin America [Attached at end of Chapter] </p>
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- Keeping coverage simple. Compulsory insurance plans (run or subsidized by government) should aim, where politically possible, to avoid covering small predictable costs (as they tend to do, for example, under the social insurance schemes in Latin America). To collect from everyone the amount needed to pay for routine check-ups and other such predictably needed services and then to return the same amounts to each participant as the services are provided makes little sense. (If society considers check-ups necessary but unlikely to be purchased, or if it wishes to subsidize them for the poor, then it is reasonable to provide them at a low fee or even free of charge, but it is inefficient to collect from all members of the coverage plan to pay for such health care.)

³ It should be noted that financing health insurance through a labor tax can introduce a distortion in the labor market, and if the wage costs are passed to consumers, could be simply a new form of a regressive sales tax. This is an important reason for keeping compulsory coverage simple and limited, as argued below.

Only under prepayment plans does it make sense to cover low-cost services. In prepayment systems, health personnel have incentives to use supplies, equipment, and time wisely, and customers cannot successfully ask for more expensive services than needed. At the same time, competition among plans gives providers an incentive to be sure participants receive adequate care.

Avoiding Cost Escalation

In some developed countries and in developing countries with large social insurance schemes, runaway costs in the health sector as a whole have become a problem. These are less the result of insurance per se than of poorly designed insurance. Two aspects of insurance can assure that costs will not escalate in the long run.

Deductibles and copayments. Services should not be seen by users and providers as free. If those covered by compulsory insurance receive services at no cost at all they will make too much use of costly services. In fee-for-service systems, a deductible (an amount users must pay before their insurance coverage begins) and a copayment (a percentage of total costs above the deductible paid by the user) each help prevent overuse of scarce personnel, equipment and supplies. Even small deductibles (e.g. 1 percent of household income in a year period) and small copayments (10 percent or so of the cost of services received) can significantly reduce the less-than-necessary use of medical care by patients. In richer countries such as the U.S., insurance firms have experienced such high costs with plans that do not have deductibles and copayments that they have almost ceased to offer such coverage. With copayments suppliers also then have an incentive to avoid waste. Once patients begin to view services as something they must pay for, the incentives for suppliers to charge reasonable prices increase. (Why should a supplier husband resources in systems where whatever is used will be paid for without argument?) Accordingly, it generally makes sense even in prepaid plans to charge at least a small fee for each visit.

Competition among risk-sharing schemes. Only effective competition will guarantee administrative costs will be minimized and a variety of options offered. Wherever possible, government should thus avoid crowding out private insurers. It may be even a good idea for government to subsidize private insurers for a limited period (as it has in the Philippines). Government can also set up a system to reinsure private insurers against large losses that occur before they have been in operation long enough to build up a sufficient reserve to survive.

Where a private market is unlikely to develop, government should provide a range of options for coverage to purchasers. Some customers will opt for small premiums with large copayments (payment only for large cost illnesses). By so doing they put themselves in a pool of customers who have incentives to keep expenditures (and therefore future premiums) low, while effectively protecting themselves against catastrophic costs. Others will find that HMO-type prepayment plans offer more for their money.

Protecting the Poor

What about the poor, who cannot afford even low premiums and cannot afford deductibles and copayments? The cost of premiums can be subsidized through vouchers to the poor (perhaps through a health card system). In fee-based systems, when catastrophic illness strikes and even a small charge per service adds up to a large financial burden, payments above a specified level can be forgiven. Deductibles and copayments can be reduced for the poor. The main practical problem with all these is identifying the poor--an administrative difficulty everywhere since means tests are difficult to apply.

Using Nongovernment Resources Effectively

In Chapter 1 the widespread provision of health care in the nongovernment sector of health care in the developing world was documented. Religious missions and other nonprofit groups, independent physicians and pharmacists and traditional healers and midwives are all active, and direct payments to these providers account for up to half of all health spending in many countries.

There is no "correct" size of this nongovernment sector compared with government; the relative roles of the government and nongovernment sectors are bound to vary among countries. However, governments reduce their own options for expanding access to health when they actively discourage nongovernment suppliers, or fail to seek efficient ways to encourage them. Even the Chinese health system relies heavily on "private" practitioners and private payments (see Box 9). Expansion of non-government services, including private for non-profit services, can reduce the administrative and fiscal burden on the government sector and broaden consumers' options. For some types of health care, especially simple curative care, private for profit and non-profit providers may well be more efficient than the government, providing comparable or better-quality services at lower unit cost.³ Finally, competition from the nongovernment sector can encourage improved efficiency in government services.

<p><u>Box 9</u> The Chinese Health Finance System [Attached at end of Chapter]</p>
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The charging of fees at public facilities and the encouragement of risk coverage systems will in themselves provide incentives for the further development of nongovernment health care. With the institution of fees at

³Hard evidence is not readily available, in part because it is so difficult to establish comparability, taking quality into account. For example, a recent study comparing government and nongovernment hospitals in Chile concluded that the nongovernment hospitals were more efficient because the number of days per patient spent in these hospitals was smaller. However, whether number of days spent in the hospital per patient is a satisfactory efficiency measure is subject to debate.

public facilities private health-care providers are not forced to compete with free services at public facilities; and under risk-sharing plans designed to pay for treatment in the nongovernment sector (such as that introduced in Chile), private professionals or organizations can be utilized to provide some of the services covered by government or private insurance.

This section describes how public policy can encourage the nongovernment sector, and discusses the need for regulation, especially of the private for-profit sector, as a result of the special characteristics of the health market. The conditions under which nongovernment provision of health services is likely to make sense have been discussed in the fee and risk-coverage sections above. Nongovernment provision is likely to make sense for most curative services, in which the full benefits of care accrue to the patient, but not for vector control, immunizations, and certain preventive services which benefit communities as well as individuals. Put another way, nongovernment provision makes sense for those curative services for which users all over the world have demonstrated a willingness to pay, as attested by the high proportions of total health expenditures accounted for by private household spending throughout the developing world--ranging up to 70 percent and more in a few countries (see Table 3 in Chapter 1). (In a few countries, it may even be practical to make use of the private, nongovernment sector in provision of preventive care of the type for which many benefits accrue to others than the recipient. The public health authorities might contract to private providers for certain levels of provision of these "public goods." Such use of the private (for profit and non-profit) sector would require supervision and inspection by authorities as well as public information campaigns to inform the people of the obligations of the private sector institutions.)

Encouraging Nongovernment Health Care Services

The barriers that restrict community organizations and private groups from initiating, expanding, or improving health care services are varied and formidable. In Cameroon, Chad, Togo, and Benin care independent of the state-administered health system is discouraged. In Malawi restrictions on private practice have led to the emigration of indigenous doctors. Private voluntary organizations (including churches) are often treated more as a nuisance than as a partner by government authorities. Approvals for expansion are delayed, access to government sources for purchasing medicines and supplies is denied, and long-range planning is limited. Nongovernment community groups--for instance, a village or neighborhood that wants to have its own health post--still get little assistance from higher-level public agencies in many countries during the difficult start-up phase. In some societies traditional practitioners--instead of getting training and support that would enable them to collaborate better with the modern sector to promote primary health care--are dismissed as incompetent. Employees and volunteers of non-profit and voluntary organizations are often treated in a similar fashion.

To encourage community-run and private sector sources of health services, the first step that many countries need to take is to reverse past tendencies toward unnecessary restrictions, hostility, and neglect. Additional positive steps include:

- Increasing public funding for training and back-up support (including technical supervision and assistance in procurement) to help community-based nongovernment schemes get started.

- Providing technical and financial assistance to private voluntary organizations for training (especially in such areas as management), and coordination of activities.

- Making credits accessible (especially where credit markets are restricted) to communities and private ventures that want to expand or upgrade services and facilities.

- Transferring (through sale, lease or contract) operation of health government care facilities to nongovernment health care providers. Such a step is appropriate for curative care facilities where the benefits of care accrue directly to those served (Box 10).

Box 10
Public-Private Cooperation
[Attached at end of Chapter]

Regulating Nongovernment Health Care

There are certain critical functions the public sector must perform. The government in virtually every country plays an important role in training--and must do so, for example, to assure that health professionals are trained in public health and preventive care (though those trained should pay most or even all of the costs, through fees or service after training). The government sector, for the same "public good" reasons, must support research and development in developing countries on improved approaches to control of local diseases.

Most important, and more difficult, the government sector must take steps to make the private for-profit market for individual health services as competitive as possible. This requires heavy emphasis on consumer information programs. The government can aid individuals to become better purchasers of health care by providing such information as the prices charged by health providers for specific types of care, the effective treatment for various ailments, the equipment appropriate for treatment of kinds of illness, and why insurance coverage is important. Even with information available, however, the effort to increase competitive incentives will also require regulation. A nongovernment health sector will need to be regulated because not all consumers will always be sufficiently informed about their own needs (this is indeed why they seek help) and the options available to them.

Quality control. On the one hand, fostering faster expansion of the nongovernment sector will not necessarily threaten quality. In fact, World Bank health analysts report that nongovernment providers in many countries (Zambia, Ecuador, Thailand) offer better quality care than government facilities. In Nigeria and Uganda, mission hospitals and clinics have medicines and other supplies when public facilities do not. In Malawi, consumers walk miles past nearly free government health centers to get to mission clinics that charge many times as much. In the Philippines, low-income people pay to use private for profit high-quality facilities when free government clinics are available. (One aspect of quality to which consumers are likely to be sensitive is waiting time. "Free" government clinics may cost more to use if many hours are lost waiting on line.)

On the other hand, some government monitoring is likely to be critical to prevent untrained people from providing incorrect or harmful treatments and to prevent unscrupulous health providers from charging for services which are not needed or for charging userous prices for necessary services over which they have a monopoly.

Periodic reviews by government monitoring teams of private facilities backed by a certification process is an option, though in poor countries it may be too costly. Examination and licensing of individuals at the time they enter the health profession is common and practical. Government can also encourage and monitor self-policing by providers. Private for-profit providers frequently develop their own means of dealing with low quality, through professional association and accreditation requirements (as developed for various types of healers in India even before the government intervened).

Where health resources are extremely scarce (as they are in most of Africa and the poorer rural parts of many other countries), the benefits of quality control must be balanced against the costs. Where shortages are severe, the most constructive approach to quality control may be to help support private for profit and non-profit practitioners through advisory visits aimed at building up skills, periodic free training at various levels, and sponsoring of professional workshops. Where the nongovernment sector is already active but of lower quality than government health services, it may be less costly to upgrade through training than to restrict or regulate their activities. This is obviously most true where government health services are not widely accessible. Many countries now train traditional midwives in modern techniques of prenatal, birthing and postnatal care. Traditional practitioners have been licensed to provide psychiatric care in parts of West Africa. Several countries have schemes under which the public sector subsidizes the commercial distribution of contraceptives.

Cost Control. An effective way to regulate for cost control is to require that payments to providers be through prepayment plans or capitation (per patient served during the period) payments to providers. Under such systems physicians and hospitals cannot increase their revenues by the choices of treatment they make for the patient. If the patient has a choice among doctors or prepaid plan to whom the capitation fee is paid the problem

of lack of incentives to provide high quality care will also be alleviated. Governments or insurance authorities retain the power under such a system to regulate both service quality and the medical conditions that must be covered by providers.

Governments need to maintain some control over cost in fee-for-service insurance systems--especially where competition has not developed among insurance providers. As discussed above, deductibles and copayments are vital to control of health costs. Use of diagnostically related groups (DRGs) eliminates some of the minutiae associated with voluminous price lists and creates incentives for cost-conscious behavior by providers. Related medical procedures are aggregated into "groupings," and payments for each such DRG are based on historical average costs across different institutions. Providers who can reduce their costs below the average keep the difference, and this incentive tends to reduce current average costs on which future reimbursements will be based.

Competition for Scarce Resources

Price regulation is always difficult in every sector. In the long run competition among service and insurance providers to gain customers by providing good service for a specified cost will be a better answer to the cost escalation problem. But would encouraging private for-profit providers to expand create competition between public and private providers, in turn causing shortages or sharp price increases for scarce health resources?

The principal concern is that shortages of skilled personnel in the government sector, especially doctors and nurses, will be exacerbated if the private sector expands. Shortages of trained health professionals are severe in many countries and to train more--the solution--takes a long time. Increasing the supply of physicians, for example, requires at least three to five years--even more if medical schools must be expanded or upgraded before additional students can be admitted. Worse, where the training itself is highly subsidized, the solution of training more people raises public costs.

There are several ways countries can deal with this problem. In a number of countries, including the Philippines, a period of public service is required of doctors before they can open a private practice. In many places in Asia, the practice of allowing private practice in off duty hours has helped to attract doctors to the public sector. Where shortages are severe, countries may need to rely for some period on use of foreign staff to staff public programs---a sensible interim solution for countries that can afford it or have access to donor funds. Donor funds might also be used to raise public sector salaries of highly-trained personnel, or to provide international professional contacts and in-service training of a calibre that would help attract the best local graduates of professional training to public careers.

In the long run, the training of high-level health professionals, especially doctors, should not be so highly subsidized from public funds. Few countries today in Africa, South Asia, or even East Asia charge the full

costs of training physicians and other health personnel, and the cost of training a physician is often in the range of US\$10-20,000 per year of studies. Because the training is subsidized, "leakage" of personnel to the private for-profit sector involves considerable loss to the public system. (Ironically, the result of free training in countries such as India is an apparent "oversupply" of doctors; students have little to lose going through medical school that is free even in the face of future underemployment.) Training could be financed by government-backed loans to students. If students must borrow for their training, a publicly-sponsored loan scheme can include stipulations forgiving portions of the loan for persons who serve in rural areas or accept lower salaries in the public sector. This is one example of how increased cost recovery in one sector (education) can reduce problems in another (health).

A more fundamental problem is the potential effect of a large, rich and privileged private for-profit medical sector on public perceptions of what constitutes "good" health care--a potential confusion between good care and costly care. The solution to this problem is not, however, for government to restrict the nongovernment sector; restrictions are likely to drain talent away from the health sector altogether and to place the full administrative burden of curative care on already overburdened public sectors. The solution is for government to play an aggressive role in developing truly "public," usually preventive programs, and in educating consumers about these programs and their critical role in improving health.

Decentralizing Government Health Services

Even assuming considerable involvement of nongovernment providers in health care, the role of the government sector in health care will remain large. The government will continue to be responsible for such "public" type programs as communicable disease control and most aspects of preventive care for which there is no real "market." In low-income rural areas and even in many urban areas, even simple modern curative care will continue to be provided by government for the foreseeable future because of the difficulty of attracting private for-profit or non-profit health practitioners. In most developing countries, government service networks sensibly combine curative and preventive care at the local level.

Thus the issue of improving the efficiency of public health services cannot be neglected. In countries where managerial resources are scarce, communication is difficult, transportation is slow, and many people are isolated, decentralization of the government service system should be considered as one possible way to improve efficiency.

Decentralization of government health services means granting greater financial (and management) autonomy to local units of the system. Decentralization is an approach appropriate primarily for the types of services provided directly to people in dispersed facilities, where user charges for drugs and curative care are implemented. Decentralization is less likely to make sense for tax-supported "public" type goods, such as immunizations and control of vector borne diseases. These programs are more

logically administered centrally, though even these programs can be, and are in some countries, "contracted out" by the central government to local governments.

Decentralization gives local units greater responsibility for planning and budgeting, for collecting user charges and for determining how collected funds and transfers from the central government will be spent. It does not imply loss of control of the central government over broad policy development. Even with decentralization, the central government should continue to retain control over such areas as training policy, assignment of some personnel, and overall system planning--when and where to invest in new facilities.

There should be two general aims of financial devolution to facilities where fees are charged. The first is to give managers planning and budgeting autonomy, including the freedom to economize on inputs and adjust their service mix more to demand. The second is more controversial: to give managers incentives to generate fee revenue by crediting fees to the management accounts rather than to the central government, and by not reducing automatically any central government budget support in proportion to fees collected.

Control of Fees at What Level?

In practical terms, the question of at what level revenues from cost recovery should be controlled takes two forms: first, should revenues be controlled by the Ministry of Finance or by the Ministry of Health?; and second, if controlled within a particular Ministry, how centralized should that control be? For optimal allocation of given resources, one view is that all revenues should go to a central government fund, where revenues can be allocated across all sectors and activities in a way which assures their best possible use. Thus revenues collected in health clinics might, at the margin, be best used to improve agricultural research, to retire part of the national debt, or to reduce what may be highly distortionary levels of taxation. Within any one sector, an analogous argument applies; central control of health revenues within the health ministry could allow fees collected for hospital meals to finance immunizations, if that were viewed as optimal for the sector as a whole.

Several other considerations, however, argue for control of revenues as close as possible to the point of collection. These have to do with possible high costs of administering a system to collect fees, and with problems of policing against misuse of collected revenues.

- Improving the incentive for fee payment and collection. When fees are not retained at the service delivery point, local users are less likely to see obvious value from their payments, and local health care providers will have less of an incentive to enforce client payment. In some situations collusion could develop between local provider and clients in nonpayment. In hospitals, for example, staff who believe fees they collect from the sick will not be used to improve the hospital environment have

little incentive to collect such fees. The benefit to friends and acquaintances of collecting no fees is obvious; the benefit to society of added revenues in central government funds is less readily perceived.

- **Accountability.** Where fees are retained at the service delivery point and used to replenish drug supplies, maintain buildings, or for other valued programs, service users implicitly police the use of their payments on the part of the local service staff, reducing considerably the policing costs to the public sector itself.

- **Signalling the center.** Where revenues are collected and controlled at the service level, service staff have greater latitude over whether, for example, to replace the clinic well or purchase more drugs. The local choice is more likely to reflect local need than a central decision. The center itself receives signals as to what resources are valued and needed by observing the spending patterns of the service units.

- **Community development.** The collection and allocation of revenues in small communities can provide one impetus for more generalized community participation in development activities. For example, local management of a village revolving fund for drugs can be the impetus for related community health work such as environmental sanitation. The involvement of local persons in decisions of local importance develops the capacity for decision-making and self-government in the community.

- **Minimizing administrative costs.** The immediate cost of collection is the staff time allocated to enforce payment of fees by users at the service delivery point. Additional administrative costs are incurred if revenues are then shifted to higher levels, with necessary accounting.

In general, the higher the transactions and information costs of collecting fees and administering revenues--that is the smaller the amounts being collected, the more differentiated the amounts (e.g., different charges for different drugs) and the more frequent the collection--the stronger are the arguments for control of revenues closer to the point of service delivery. This argument often applies to local health posts. In China local facilities have paid all non-salary costs from locally collected user charges and drug fees for many years and in Pakistan the government is considering retention of fees by local facilities. It also applies to drugs: in a revolving fund for drugs, stocks at local levels must be periodically replenished through fees. And it can apply to hospitals (as is being tried in Jamaica). In Zambia, a public hospital operates as a parastatal with complete financial autonomy; Burkina Faso and Cote d'Ivoire are considering a similar arrangement. Setting up a hospital as a parastatal can make it more financially self-sufficient and less of a drain on public health funds.

Is there point at which revenues collected in public health facilities should be used to reduce the central budget allocation to the health sector, thus relieving fiscal pressure on the central government? The thrust of the argument throughout this paper is that certain health programs of a "public" nature are now underfunded. As revenue collection in public facilities

makes large "private" curative services financially self-sustaining, the freed government funds should be absorbed in truly "public" health activities and in subsidizing "private" care for the poor. The situation in every country will be different; but what this principle implies is that the overall central budget allocation to health should be protected over a period when user charges are introduced. Only if and when the point of adequate provision of "public" type health activities by the central government is eventually achieved and there is critical curative care for the poor should reduced public funding for health be considered.

Appropriate Transfers from Central Government to Local Facilities

Decentralization and greater financial control by no means imply complete financial independence of each individual facility. Government facilities that provide integrated curative and preventive services in rural areas and to the urban poor will continue to require budget transfers from the center. In fact, in rural areas the appropriate "unit" for purposes of decentralized planning and budgeting is likely to be a regional or district office, not each of many small health posts. At the same time, government hospitals in urban areas could eventually transfer some collected revenues to the center, to supplement general revenues in financing other government health programs.

The ideal form for transfers from the center to local areas would be in the form of vouchers directly to individuals, who could then spend the funds at the facility (government or nongovernment) of their choice. Thailand (see Box 7 above) and Chile are experimenting with this approach. In most countries, however, central governments transfers are made directly to local facilities on an annual basis. The amount of the transfer is usually based on a dialogue between the center and local levels. This approach relies heavily on the quality of the dialogue between the central government (usually the health ministry) and the local facility (or district or other-level management). Frequent and honest interchanges can allow units to defend and explain their requests--and to understand better the central government's constraints. But such interchanges may not always operate well, especially for the areas and local units farthest from the center. Full annual reviews require a large staff with special capabilities that many health ministries lack.

An alternative is to rely on one or another formula for the size of the annual grant. Three types of formulas are:

- A matching grant, using a "throughput" approach, in which the amount is set per unit of output, and output is measured as some proportion of fee revenue. The proportion of fee revenue subsidized can be adjusted to reflect the social value of different services. For example, children's medical fees might have a matching grant of 200 percent while general geriatric care would have no matching grant. The proportion can also be adjusted for different regions according to need and the ability to pay.

This approach is likely to work best for hospitals in middle-income countries with sufficiently developed insurance systems to allow for fees close to costs. It will not work in primary care facilities at district levels, where many services carry no fee at all.

- The capitation (a reference to "per capita") approach, which distributes resources according to the size of the population served. Some such plans also take such socioeconomic characteristics as age and income distributions into account; since these affect needs. The capitation approach is sensible for annual transfers to regional or district level systems from a central health ministry.

- The diagnostic related grouping (DRG) approach, based on the number of patients served rather than the general population's size and characteristics. The DRG approach is appropriate for inpatient facilities. Estimates of the resources required to treat each group of patients adequately are classified according to reported diagnoses. Under this system, a service unit that sees many patients needing expensive care receives more transfer funds than one that deals with mostly minor cases. As long as providers' diagnoses are not influenced by its adoption, a DRG strategy is as attractive on equity grounds and to apply than capitation-- because information is more readily available on patients than on entire populations. However, administrative and record-keeping costs are high (the U.S. system has more than 450 groups and a similar system in Chile has over 3000) and frequent and careful reviews of categories and allowable payments are needed. Experience in the United States and the Federal Republic of Germany also shows a tendency for reported diagnoses tend to respond to the system, with more patients appearing in the more highly compensated categories once the system is in place.

For developing countries, a sensible early step is small-scale experimentation with a capitation system for regional-level facilities and a simple DRG system for hospitals.

Another point about annual budgetary transfers to local facilities is worth noting. Transfers should be made on a prospective basis; cross-year recoupment should be avoided. The central government should neither take away any surplus that efficient operation allows a local facility to achieve nor make good any deficit by adjusting the next year's amount. In Java's Cirebon district the government hospital receives a central government grant for about 40 percent of its revenue. The amount is paid regardless of how well or poorly the facility provides services to the surrounding population. Hospital managers have an incentive to save on costs.

* * *

Decentralization of government health services will not be easy, and of the four policy recommendations is probably the least tried. Where other parts of government are highly centralized, there will be considerable obstacles in attempting decentralization (but considerable benefits as well

since except for agricultural extension, perhaps no other government service is as highly dispersed geographically in its activities). Where overall administrative systems are weak, the quality of staff in remote areas is poor, or positions are unfilled due to long standing difficulties in attracting staff away from large cities, decentralization will have to be planned and introduced gradually. In some countries, where staff of regional agencies, local hospitals, and clinics have little experience in managing revenues and expenditures, training in such skills and a period of practice of such skills will need to precede decentralization.

Financing Reforms: Problems and Pitfalls

Implementation of these reforms will not solve all the problems of the health sector. User charges in public facilities will not generate foreign exchange to pay for imported pharmaceuticals. Insurance programs will not in and of themselves assure better quality. Decentralization will not eliminate the need for difficult political decisions regarding new investments, training subsidies, and wage scales for public workers. Even a high-quality nongovernment sector will not fill such critical needs as environmental disease control, and may not adequately serve the poor in remote rural areas. Financing reforms will have little impact without a political commitment by government to making the health sector more effective. As noted above, user charges (and other financing reforms) alone will not assure that government resources freed up will be well used; decisions made largely in the political arena will determine whether freed funds are used for the poor and for "public" type services, rather than for building urban hospitals and buying expensive nonessential equipment. Political decisions will largely govern whether freed revenues are used to improve access to and quality of services sufficiently to attract fee-paying and insurance buying customers. Only government action can bring necessary changes in management and training programs—for example in the medical education system so that training of doctors is more appropriate to needs and training of paramedical personnel is strengthened.

Nor is the finance policy package itself a simple one to implement; each of the four parts has potential drawbacks if implemented without due care. User charges could deter those with the greatest capacity to benefit from seeking care, without recycling funds into health. Risk-sharing schemes could raise costs and augment existing disparities. Deregulation of the nongovernment sector and administrative decentralization could increase geographical inequality and decrease quality of services.

Avoiding the pitfalls requires that political and social boldness in innovating on the policy side be complemented by systematic and sustained attention on the program monitoring side. At the country level, specific approaches to implementation need to be monitored as they are tried; flexibility in such areas as the size of user charges and the approach to decentralization needs to be maintained.

For these reasons, implementation must be expected to take time; this is all the more true in countries where administrative capability is weak. Indeed, implementation is bound to occur at paces which differ according to the circumstances in each nation. For example, in many countries, changes in policy will require changes in administrative support systems (for example cash-handling rules) and legislative changes. In countries where overall administration is weak, change will need to be introduced gradually.

But in every country, initial steps are possible (see Box 11). The most important first step is to begin to charge some amount to most users of curative public health care services.

In some countries the ability to differentiate the poor from the not so poor will allow charges for these "private" type services to be raised toward marginal cost quickly; in others overall fees will have to remain modest until methods to identify the poor are tested.

<p><u>Box 11</u> Health Finance Reforms Are Already Underway [Attached at end of Chapter]</p>
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The necessary pace of introduction of risk-coverage protection will be determined by the speed with which fees can be instituted and increased toward full service cost for the non-poor. As fees become higher the necessity for risk coverage plans will increase.

Timing of the reforms to more effectively use the nongovernment sector will vary greatly by society. In some nations the nongovernment sector is strong and prevalent, both in a technical and a political sense, and the important issues are ones of appropriate regulation and cost control. In other nations both political reality and lack of a strong nongovernment sector mean that more effective use of the nongovernment sector activities will be a longer term goal.

How quickly greater decentralization of public health systems can be accomplished will also vary by nation. In some cases management ability, record-keeping and local resources will be available in many localities and decentralization of certain facilities will be relatively easy. In others movement toward greater decisionmaking and resource control at the local level will only be feasible after a period of training and experimentation, development of costing and accounting procedures, and design of complementary regulatory and supervisory programs.

Box 5. Village Health Worker Financing and a Revolving Drug Fund in the Gambia

Many primary health care programs have successfully incorporated elements of self finance, usually in the form of community support and sale of drugs. In the Gambia, village level services are provided by a village health worker, who is trained to administer simple curative health services and preventive care, and by a traditional birth attendant, who is trained in maternity care. Both workers are chosen by a village development committee. Following a short training period, they work in their villages under the supervision of a community health nurse who visits the 4 or 5 villages for which he or she is responsible once a week.

Village health workers are paid a salary by the village development committee or may be subsidized by people in the village helping to work their fields. The traditional birth attendant is compensated for services directly by the patients, as is traditional. These components constitute the "community contribution" to the health workers.

Drugs are financed by a revolving fund. Initially a three-month supply of drugs is donated to the village by the central government. A small flat charge of dalasis .06 (less than U.S. \$.06) per tablet or teaspoon is charged by the health worker. Revenues are turned over to the development council, which pays to replenish the stock of drugs. Purchase orders for pharmaceuticals are written by the community nurse and picked up by the village health workers at the Ministry of Health's regional store. The central government subsidizes these purchases only to the extent of absorbing transport and handling charges to the point of the regional store. Village pharmaceutical stocks and accounts are physically separated from the rest of the health system to help insulate village health workers from shortages.

[End of Box 5]

Box 6. Prepaid Health Care Organizations

There are a variety of ways of organizing private groups for the provision of prepaid health care. In each of these charges all participants pay a participation fee or prepayment. This spreads the risk of health care costs over the entire group. Some schemes also charge small additional fees for care (copayments) to discourage overuse, but the general pattern is that the one payment entitles the participant to all health services and care needed over the period. The premia collected provide the funds for paying staff and buying all supplies and equipment. Providers have incentives to provide care in a cost effective manner because providing more or more expensive services does not produce added revenues. There are also incentives to provide cost effective preventive care to the participants to reduce illness and thus lower costs for curative care. So long as participants have a choice of providers, competition among providers prevents the provision of low quality care, which would drive away clients.

Prepayment plans may differ in whether services are provided by salaried employees or private doctors who participate as "preferred providers". The so-called Health Maintenance Organizations (HMO's) directly provide care with salaried employees in facilities owned by the organizations.

The preferred Provider Organizations (PPO's) indirectly provide care by allowing participants to choose among participating professionals. Participating professionals in turn may be paid on either a fee for service or a capitation (fixed amount per participant per year) basis.

Community and cooperative prepayment programs are generally organized on either the direct provision (HMO) or indirect provision (PPO) basis.

[End of Box 6]

Box 7. Rural Risk Coverage: Thailand's Health Card System

The provision of risk coverage is difficult in rural areas for several reasons. Poor communication, the dispersion of the population, and low money income restrict the market for private insurance and prepaid plans. Collection of premiums and reimbursement would be difficult for a government run risk sharing plan as well as for a private plan. Record-keeping for catastrophic coverage (i.e. the amount spent by an individual or household per illness or per time period) or for billing the risk coverage plan when deductibles or co-payments are used, is simply impractical in many facilities.

In 1983 the Ministry of Public Health initiated a health card system in rural areas. Households are sold a card entitling the bearer to treatment for a specified number (usually eight) of illness episodes during the period of the card's validity. The cards are sold at a modest price, so that most households can afford them. Not only do they entitle the purchaser to the illness treatments, but also to unlimited visits for the preventive care services of maternal and child health and immunizations. The system is set up so that cardholders must enter the health system at the health center or drug fund level. Entry to a district or provincial hospital for higher level care requires a referral from the lower level facility. With the referral slip a cardholder is entitled to quick attention at the referral hospital via a "green channel" or "expressway"; this reduction of waiting time increases the incentive for the purchase of the health card.

In principle the health cards should encourage the use of preventive health care (which is free to holder), increase the use of local health centers (which had in the past often been bypassed by care seekers), reduce waiting time and congestion for those referred to hospitals, raise capital to finance better and more health services, and allow households to protect themselves against catastrophic health costs.

An evaluative survey carried out several months after the program started found "uniform enthusiasm for the funds among cardholders." In the five villages covered by the card funds, from 55 to 100 percent of villagers purchased the cards. The cards, which are priced at less than the households on average were spending, mostly for private care, have captured new revenues for the public sector. While the program is still too new to declare it successful, there is room for optimism about the prospects that card systems can help improve rural health care in Thailand and other developing countries.

Sources: World Bank sector reviews and analysis, and Myers, Dow, and Causino (1985).

[End of Box 7]

Box 8. Social Security Financing of Health Care in Latin America

A health financing method that has been used for over 60 years in Latin America is social insurance. Sixteen Latin American countries have social insurance systems that provide health care to some portion of the population.

Social insurance systems are thought to contribute to development of dual public health systems--a Ministry of Health system for indigents and a comparatively wealthy social security system for already well-off modern sector workers. They are said to create an environment in which expensive, high technology curative services are overemphasized to the neglect of less sophisticated types of care and preventive services. They are widely believed to contribute to the concentration of facilities and personnel in urban areas and to compete with public systems for scarce personnel and equipment.

The evidence on these points, however, is not clearcut. First, the dual nature of health systems in Latin America is declining as social insurance coverage expands. Generally, social insurance only covers workers (and sometimes dependents) in the wage sector, a restriction which excludes the poorest occupational groups, such as farmers, agricultural workers, and domestic servants. However, as countries develop, and more workers are brought into the modern wage sector, more are covered, and as incomes rise countries can afford broader coverage. In fact, throughout Latin America, coverage has been increasing, and is much higher in middle-income than lower-income countries (see figure).

The Brazilian system has expanded rapidly since the 1960s, extending coverage from 23 percent of the economically active population in 1963 to over 85 percent by 1984. Coverage of rural areas and indigents has been accomplished by federal subsidies, acreage taxes, taxes on agricultural sales, and taxes on rural employers. Any Brazilian needing emergency care will be treated in social security facilities. In Mexico, the social security system covered about 35 percent of the population in 1978. Between 1978 and 1980, federal subsidies were used to build 2100 rural health clinics that are run by the social security system. This program has brought about a third of rural residents into the social security system (although they have access only to these clinics, not to hospital care). Ecuador has extended medical care under social insurance to about ten percent of rural residents.

Second, within most social security systems, benefits are relatively equitably distributed. Workers usually pay a fixed percentage of wages to the system, so contributions are proportional to wage income (at least within same range of earnings). Medical benefits are generally not closely related to income, so all members are eligible for the same health services despite their unequal contributions. In systems with broad coverage, this arrangement can create desirable redistributions from the more wealthy to the less. In Brazil in 1981, for example, the social security system

collected 42 percent of its revenues in the State of Sao Paulo (the richest state) but made only 24 percent of its health expenditures there.

Social security systems do spend a large amount per beneficiary on health care, probably more than do the corresponding public health systems, especially in the lower income countries. The social security systems of the seven higher income Latin American countries spent an average of US\$44 per beneficiary in 1977, while the lower income countries actually spent more on average, US\$53 per capita.

On the other hand, the systems are usually self-financing, based primarily on payroll taxes. There were no state subsidies in Argentina, Bolivia, the Dominican Republic, or El Salvador in 1977. In Costa Rica and Panama, state subsidies were less than 4 percent of revenues; in Uruguay, 12 percent; and in Venezuela, 15 percent. In Colombia, the state subsidy is rather high--26 percent of total revenues, but this 26 percent does include the government's contribution for government employees. Thus the systems are fair in the sense that the benefits are paid for by those who receive them. The results can of course be judged inequitable insofar as the poor receive little coverage.

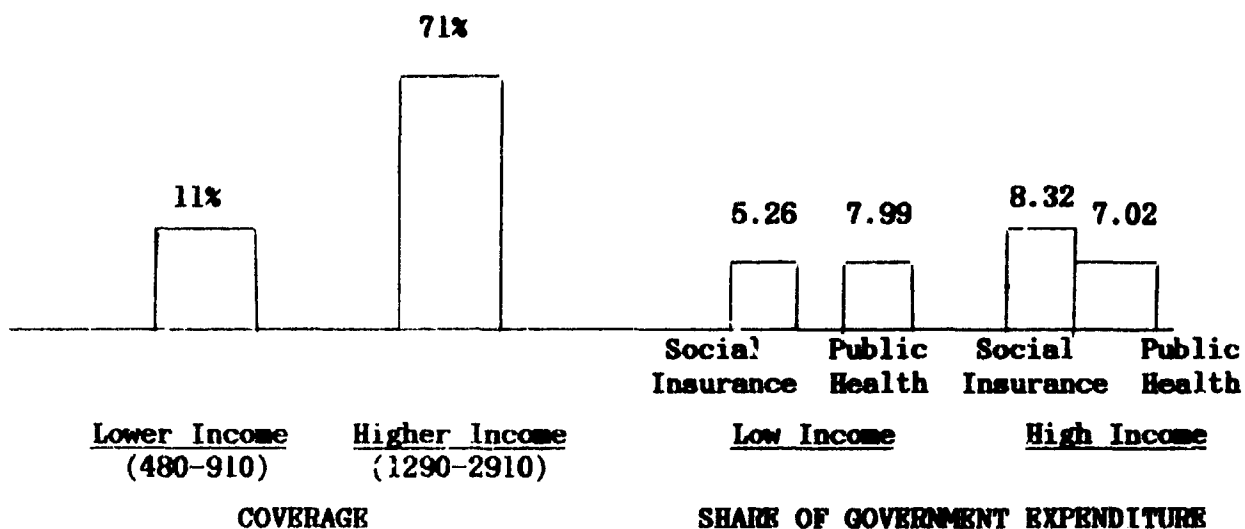
The effect of social insurance on health care is undoubtedly to expand the hospital-based system. However, people who are covered by social security systems generally also have a better record of immunizations, attended deliveries, and prenatal care than do people covered only by public health systems.

Whether social insurance systems contribute to the centralization of health resources is equally questionable. Care has been extended to rural areas through social insurance in Brazil, Ecuador, and Mexico. Most hospital services paid for by social security in Brazil are provided under contract by the private sector. Public and philanthropic institutions provide services to social security beneficiaries who live long distances from social security facilities.

In summary, inequities created by social insurance systems in Latin America appear to be mainly a matter of incomplete coverage. Within a given fund (except in Chile) health care benefits are the same for rich or poor participants. Moreover, in these countries social insurance has proven its ability to generate revenue for health.

Several countries have had problems with over-consumption of health services (similar to problems in developed countries). As a result, there is wide experimentation with different health delivery systems, coverage plans, and prepayment and co-payment reimbursement policies. Brazil, for example, has introduced a diagnosis related group (DRG) system with reasonable success at cost containment. The need for reform measures to reduce cost inflation should not be itself a cause for overlooking positive aspects of the systems.

Figure. Coverage and Share of Government Expenditures of Social Insurance Medical Plans, South America, 1977



These are averages across countries, weighted by population.

High Income: Argentina, Brazil, Costa Rica, Mexico, Panama, Uruguay, Venezuela.

Lower Income: Bolivia, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Paraguay, Peru.

Summary Table. Overview of Medical Care Under Social Insurance in 16 Latin American Countries

Countries (in order of per capita income)	Percent Popula- tion Covered	Per Capita Cost of Medical Care Under Social Insurance (\$U.S.)		Health Care Share of Government Expenditures		
		Health Care Share of GDP S.I.	P.H.	S.I.	P.H.	
Higher-income countries						
Venezuela	30	59	0.7	2.2	2.3	7.3
Argentina	80	n.a.	n.a.	n.a.	n.a.	n.a.
Uruguay	50	14	0.5	0.9	2.2	2.0
Brazil	83	23	1.4	0.7	7.4	8.1
Panama	47	74	3.1	4.3	10.3	14.5
Costa Rica	82	51	3.8	0.6	19.4	3.2
Mexico	56	n.a.	n.a.	n.a.	n.a.	n.a.
	--	----				
	71	44.2				
Lower-income countries						
Dominican Republic	4	73	0.4	1.2	2.6	6.5
Ecuador	5	89	0.7	1.3	5.0	9.9
Guatemala	14	25	0.5	0.8	5.0	7.6
Colombia	10	49	0.9	0.8	8.0	8.6
Peru	12	36	0.8	1.4	4.3	5.9
Paraguay	13	n.a.	n.a.	n.a.	n.a.	n.a.
Bolivia	13	52	1.3	1.0	10.4	8.0
El Salvador	5	52	0.6	1.4	3.9	9.8
Honduras	7	48	0.8	1.6	3.8	8.5
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	11	53				

Notes: S.I. = Social Insurance; P.H. = Public Health.

Sources: Zschock (1983) and (1983b).
International Labour Office (1985).

[End of Box 8]

Box 9. The Chinese Health Finance System

The Chinese health system provides an important example of success in the effective delivery of low-cost health services. Along with China's high level of literacy and its food policies which help assure adequate nutrition, China's health service system has been important in raising life expectancy to almost 70 years, well above the average for countries of comparable income.

How is the Chinese health system financed? Consider how China has used each of the four approaches proposed in this paper.

User charges. The Chinese do charge users of public facilities. The central government pays 100 percent of the salaries of the health workers in state-owned hospitals and health centers and 60 percent of the salaries of workers in collectively owned health centers. The government also provides very small subsidies to village doctors working in some remote areas. User charges, however, cover all other costs. All drugs are sold at a 15 to 25 percent profit, and fees for services are set at a level to cover all non-salary costs not covered by the drug revenues. Hospitals typically cover 75 percent of operating costs through drug fees and user charges.

Risk coverage. The Chinese system provides health insurance for a significant part of the population. A state-sponsored compulsory Government Insurance Scheme covers about 20 million people, and a Labor Insurance Scheme covers another 120 million state enterprise employees and their dependents. The two programs, introduced in 1952, cover approximately 14 percent of the population, mostly in urban areas. Most rural residents were covered by a rural cooperative insurance system until recent economic reforms led to its collapse. The great majority of rural people now have no insurance coverage, a situation causing large risk because of the high user charges.

Effective use of the private sector. "Barefoot doctors," now officially called rural or village doctors, are all effectively nongovernment for profit practitioners. They cover their own costs through charges to patients for curative services and through drug sales (at a markup of 15 percent for Western drugs and 25 percent for traditional drugs). They are typically well trained (one to three years) and well paid (incomes greater than average).

Decentralization. China has a long standing policy that fees collected are used by the collecting facility as it sees fit. As would be the case elsewhere, decentralization may itself bring problems. For example, a recent decision to permit hospitals to distribute profits in the form of bonuses to employees may have contributed to an increase in drug sales (particularly to insured patients). If additional drugs were not actually needed, this would amount to supplier-induced demand.

Sources: World Bank sector reviews and analysis.
Prescott and Jamison (1984) and (1985).

Box 10. Public-Private Cooperation

Cooperation between the public and non-governmental sector in providing health care has been deliberately fostered by governments, particularly in countries where non-government entities have historically provided an important share of health care services and where the government sector has been unable to expand rapidly enough to satisfy demand. This cooperation can take several different forms.

Subsidizing Nongovernmental Organizations

In Rwanda, where missions provide 40 percent of health care services, the government reimburses them for 86 percent of the salaries of Rwandese staff. These public subsidies account for about 4 to 5 percent of recurrent public health spending.

In Zimbabwe, the government provided missions with Z\$4.6 million (about US\$6.6 million) in 1980/81 to reimburse them for providing health care to indigents. This subsidy represented 4 percent of central government health care spending, but an estimated 85 percent of mission health service revenues. In addition, the government purchased Z\$.9 million in services from hospitals owned by industrial or mining companies.

In Zambia, the government provides missions with K6.6 million (about US\$9.4 million) which is over half of missions' expenditures on health care. Mining companies received K.08 million to reimburse them for health care services to indigents, representing approximately 2.5 percent of total health expenditures by the mines.

Contracting to Nongovernment Providers

In Indonesia, the government employees' health insurance scheme pays nearly 20 percent of its total health expenditures to private health providers.

In Colombia, the Social Security Institute contracts for beds in private sector hospitals.

In the Philippines, the government compensates private hospitals to maintain charity beds in areas not covered by the public system, and it pays private hospitals for services that are unavailable through public hospitals. The Philippine social insurance system pays the full cost of inpatient services in public hospitals, but patients are free to use the cash value of that coverage as a partial payment for services from more expensive private providers. To solve a problem of few providers in some rural areas where the Philippine system has beneficiaries, the government has supported the construction of at least 29 new private hospitals.

Incentives

In Chile, following legislative changes in 1979/80, all employees make mandatory contributions of 6 percent of their income for health care either to the public social security health system (FONASA) or a private social security fund (ISAPRE). Those who choose coverage under the public social security scheme can opt to receive private health services through a voucher system. Most of the private social security funds are financial intermediaries that receive fees and reimburse the provider of the patient's choosing. Some provide services directly; the largest operates a complete range of outpatient and inpatient health care facilities. Overall the result has been an expansion of private services. A decrease in government spending has been more than offset by an increase in nongovernment spending over the period 1980-1982.

In Uruguay, the social security system does not have its own facilities, but encourages purchase of services from nongovernment health maintenance organizations (HMOs), which are now the primary source of care for beneficiaries of the system. The HMOs provide services to 45 percent of the population. Monthly fees, copayments, and required services in Uruguay's 23 HMOs are closely regulated by the Ministry of Health.

In Brazil, services financed by the social security fund may be purchased from the private for profit sector. Starting in the early 1960s firms have been allowed to contract with prepaid health organizations to provide the same benefits that are otherwise provided by the social security system, and to retain their social security contribution for that purpose. This has fostered an enormous expansion of health maintenance organizations (HMOs). Between 1961 and 1979, over 200 HMOs were organized. In 1981 this provision was frozen, except for firms already contracting with HMOs, because of financial problems within the social security system.

[End of Box 10]

Box 11. Health Finance Reforms Are Already Underway

Several nations have already begun to institute the types of reforms discussed here.

Jamaica

After discussions with the Bank, the government made several changes in the health finance system. A procedure for exempting the poor from fees, based on eligibility for an already operating food aid program, was adopted. The Ministry of Health (MOH) obtained central government approval for a decentralization plan under which 50 percent of fees are kept by the collecting health facility and the remaining 50 percent remains with the MOH. A study of risk-sharing alternatives has been commissioned and plans are being made for a pilot test of a prepaid health system for rural areas.

Thailand

A card system which effectively both provides risk-coverage and subsidizes the use of medical care by the poor has been put into operation in several rural areas. (See Box 7.)

Somalia

The private practice of medicine, which had been forbidden, has recently been legalized. World Bank staff are recommending increased levels of cost recovery for selected health services.

Zambia

Because the constitution prohibits charging citizens for health services plans are being made for making the university hospital at Lusaka a parastatal, with charges for services and drugs for expatriate clients. Public funds replaced by the fee revenues at the hospital will be transferred to finance the operating costs of new maternal and child health/family planning services.

Zimbabwe

The government has introduced a fee for patients who bypass lower levels of the health system and raised room fees for private patients in public hospitals. A national health insurance scheme, as a part of the social security system, is being initiated.

The Gambia

A plan has been implemented under which fees are charged for drugs and the revenues collected are used by the village development council to purchase replacement drug supplies (a so-called revolving drug fund). (See Box 5.)

Plans are being made to increase user fees and allow them to be retained by the Ministry of Health (rather than be sent to the Finance Ministry), and to have the private for profit sector largely take over the pharmaceutical supply function.

China

A risk-coverage plan is being tested in selected rural areas. Plans are being made for a provincial-level revolving fund (with capitalization financed by a World Bank loan) to make loans to provincial hospitals, which in turn would generate funds to repay the loans through raising fees to hospital service users.

Brazil

The recession beginning in 1981 prompted Brazilian authorities to contain health costs. The social security medical system closed several large hospitals for tuberculosis and psychiatric care that were underused. Contracts with private hospitals were rewritten for payment on the basis of diagnostically related groups. The system expanded its payments to state and local governments providing basic health care on a capitation basis, rather than for services delivered. Costs had been growing by 22 percent per annum in the 1970s but fell in the early 1980s, and are projected to grow by no more than 6 percent per annum through 1989. Cost containment has been achieved with no evidence of declining quality; more effective incentives prompted providers to eliminate waste and unnecessary use of services.

Sources: (1) World Bank documents; Birdsall 1986; McGreevey, 1986.

[End of Box 11]

CHAPTER 3

WHAT THE WORLD BANK CAN DO

The World Bank began direct lending for health in 1980. By 1983, the Bank, along with Japan and the United States, was among the three largest funders of health projects, lending over \$100 million annually. Lending operations in over twenty countries have focussed on development of basic health care programs, including expansion of primary health care, provision of drugs, and support for training and technical assistance. Lending operations have generally been preceded by systematic studies of the health sector as a whole. These studies have enabled the Bank to carry on a policy dialogue regarding system-wide issues with government officials (See Box 12).

Stimulating Consideration Of Financing Reforms

The Bank is now broadening that dialogue, both with borrowers and other donors, encouraging consideration of new financing approaches, and rethinking of prevailing strategies and the concepts on which they are based. Many countries, before they can carry out policy reforms, must clarify for themselves what their alternatives are and why change may be desirable. The financing climate in the health sector differs markedly from that in, say, public utilities. For example, while charging prices for electricity is acceptable everywhere, the argument for charging fees for governmentally provided health services is not widely appreciated.

<p><u>Box 12</u> World Bank Health Lending and Sector Work [Attached at end of Chapter]</p>

Policy dialogue is supported by staff analysis of health finance issues in the form of sector studies, in the context of project design work, and in economic studies of overall public investments. Opportunities are being sought for discussions with the highest levels of government (inside and outside the health ministry). The issues addressed are being expanded and altered. To the recent main agenda items--expenditure and revenue trends, public sector fees, and financial management problems--are being added risk coverage, stimulation of the nongovernment sector, and decentralization of the public sector. Operational studies of these are being suggested and supported.

The added evidence and experience accumulated from staff analyses should increase the Bank's ability to make sound suggestions on specific programs. New operational studies should help the Bank to acquire practical information about the progress of health financing reforms, and thus to improve future discussions and advice.

Discussions and exchanges of ideas and research findings with other multilateral and with bilateral aid organizations are also going on, and are meant to forge greater agreement on approaches to health finance in

developing countries. The Bank is one of the few institutions able to press strongly for greater attention to health financing. It is doing so aggressively through routine meetings, through special conferences on the subject, and through interaction with other donors at the country level. The coordination of strategies and approaches should benefit the developing countries, which must respond to what have been at times contradictory suggestions on health financing.

The Bank is also increasing its support for training courses for country officials in health finance and health economics. The Bank's Economic Development Institute courses on health care include a financing module; special courses on financing issues for government staff of health, finance and planning ministries are planned. Support for training is also provided through inclusion of funds for fellowships in project loans.

Expanding Lending

Bank lending operations can be and are being used to assist countries with health financing reforms. Finance-related activities are being incorporated into projects mainly focused on other health care issues. For example, a project might include support for training of health managers in the fundamentals of new approaches to financing. Or support for the development of a new essential drugs program might be accompanied by the introduction of new charges for drugs that would over time assure that the new program could be sustained. Lending can cover the start-up costs of new finance policies, such as the design and testing of pilot insurance schemes or new programs of user charges, and the development of accounting systems for health facilities. Lending can also be used to assure the quality of public services (necessary to begin attracting fee-paying customers) and to implement decentralization.

Conducting Research

Progress in spreading new ideas and challenging old ones has been slow because evidence on some topics is scarce. Sector studies can help, but more extensive data collection and analysis, much of which can be carried out in conjunction with operational work, is also required. The knowledge of health financing is at a stage where the potential payoff to well-chosen research projects is high. The central issues are clear, the hypotheses exist, the audience to be persuaded is large and important, and the techniques needed to obtain the needed information are available.

Indicative of the possibilities for Bank-supported research are investigations of:

1. What access to services of what quality is there now? What are nongovernment expenditures on health care? How much do people now pay? How much can they afford? How would utilization of services be affected were prices raised? Would demand fall for services important from a health point of view? Would utilization by the poor decline?

2. How much revenue can be raised from what size charges? What are collection costs likely to be? What is a reasonable schedule of charges at different levels of the system?

3. What health insurance programs now exist? Who is covered at what cost? Are there informal insurance systems within extended families?

4. How equitable is the existing health system? What groups now benefit from what services, at what cost to the government purse? What are practical means of identifying and protecting those unable to pay for health care.

5. How active is the nongovernment health sector? Is the for-profit sector competitive? Are there private physicians, pharmacists, and other trained health practitioners in rural areas? What income groups does the nonpublic sector serve? What are alternative means, and their relative costs, for improving information to consumers about the quality and prices of private health services? How can both public and non-government health providers be regulated and supervised so that the clients are protected from ill-advised and overpriced services?

6. How can management of public health facilities be organized and overseen so that resources are used efficiently and workers perform well? What steps can be taken to ensure sustained political and popular support for health financing reforms?

* * * * *

Fostering improved health sector finance is among the most valuable contributions the World Bank can make to better health care in low-income countries. Through its sector work, through innovative lending strategies, through dialogue with other donor agencies, and through research and operational evaluation, the Bank can help direct the attention of governments and international agencies to the neglected matter of health sector finance. The Bank consistently has advocated that overall economic policy be grounded in sound principles of finance and project selection; the agenda for health financing reform proposed in this paper is consistent with and would reinforce that role in the health sector.

Box 12. World Bank Health Lending and Sector Work

A March 1975 Health Policy Paper limited World Bank health operations to support for project components in other sectors; then in late 1979 the Board approved direct lending for health. The 1980 Health Sector Policy Paper identified likely activities for inclusion in health projects:

- a) Development of basic health infrastructure;
- b) Training of community health workers and para-professional staff;
- c) Strengthening of logistics and supply of essential drugs;
- d) Promotion of proper nutrition;
- e) Provision of maternal and child health care, including family planning;
- f) Prevention and control of endemic and epidemic diseases; and
- g) Development of management, supervision, and evaluation systems.

Since the Bank began direct health lending in 1980, 1 projects have been approved by the Board. A total of over \$600 million was committed during the five fiscal years from 1981 through 1985.

World Bank lending operations are generally preceded by health sector work--staff studies designed to improve knowledge of specific country situations. Sector work by the Bank has often had a positive effect on governments' approaches to financing health. In Zambia, the National Committee for Development planning appointed a Committee that produced comprehensive response to the Bank's sector report. The President held a press conference at which he discussed the need for greater efficiency in the health sector and the need for cost recovery. The Jordan Health Sector Review probably contributed to government decision to scale back planned hospital construction. In the Philippines, China, Comoros, and Burkina Faso, Bank sector reports have contributed to new thinking about finance issues. Bank reports also serve as a means of communication with other donors on financing as well as other health sector issues.

Source: Measham, (1986).

[End of Box 12]

Bibliographical Notes

This report uses information from a wide variety of World Bank and outside sources. World Bank sector reviews and project reports proved especially useful and are listed in the references. Ongoing economic analyses and research as well as project reports for specific countries provided valuable facts. World Development Reports for 1982, 1984 and 1986 were sources of information. Discussions of the major sources for each section of the report follow. Sources for tables, figures and boxes are shown at the end of each.

Chapter 1. The Health Sector and Its Problems

World Bank sector and appraisal reports provided much of the factual information; especially useful were reports on Colombia, Ethiopia, The Gambia, Lesotho, Niger, Nigeria, Somalia, Swaziland, Zambia and Zimbabwe. For the section, "Health and the Health Sector in Developing Countries," other major sources were the Pakistan Population Planning and Social Services Report (World Bank, 1978) and Birdsall (1986) on morbidity; Akin, et al. (1985), Birdsall, Orivel, Ainsworth and Chuhan (1983), and International Statistical Institute (1979) on service usage patterns, and Clower et al. (1966) on the Firestone Company's health care system in Liberia. The descriptions of existing health care systems are based on Bose (1983), Valenzuela (1981) and Jonsson (1986).

The discussion of the problem of insufficient spending for cost-effective programs used Patel (1986), WHO (1981), de Ferranti (1985) and USAID (1985) for expenditure information and estimates of the cost of primary health care interventions. Examples for the section on inefficiency came from Bose and Desai (1983), Bloom (1984), and Gesler (1979), Gershenberg and Haskell (1972), and Lasker (1981) on rationing by queue. The discussion of supply problems is based on Ainsworth (1983a), Danzon (1985), Gray (1986), USAID (1985), WHO (1984), Jonsson (1986), and Gwatkin, Berman, and Burger (1986). The discussion of the equity problem is based on sector and appraisal reports, and on Jonsson (1986) from which much Tanzanian information came; Jimenez (1985a) for information on Colombia, Malaysia, Indonesia and China; Melrose (1982) on high technology medicine in Bangladesh; Bergsman (1979) on tax incidence in developing countries; and Mesa-Lago (1983) on Latin American social security systems.

Chapter 2. Policy Reforms

Especially useful for Chapter 2 were World Bank sector and other reports on Argentina, Bangladesh, Botswana, Brazil, Cameroon, China, Colombia, Ecuador, India, Indonesia, Ivory Coast, Kenya, Lesotho, Malawi, the Philippines, Rwanda, Thailand, Zambia, and Zimbabwe. The section on charging the fees relies for the general argument on de Ferranti (1985), Birdsall (1986), Akin, et al. (1985), and Jimenez (1985a).

The World Development Report, 1983 and Saunders and Warford (1976) were sources on marginal cost pricing methodology; Roemer and Shain (1959), Pauly and Satterthwaite (1981), and Feldstein (1972) on supplier induced demand; and Heller (1976), Birdsall, et al. (1983), Akin and Schwartz (1985), Ainsworth (1983a), and de Ferranti (1983b) on the responsiveness of health service purchases to prices. Sources for the section on risk coverage include Prescott and Jamison (1984), Abel-Smith (1985), and Newhouse (1981). The discussion of the private sector benefitted from Fisk (1978) and Savas (1981) on the pros and cons of contracting public services out to private providers; Olson (1981) and Dobson (1978) on the problems with the periodic review method of regulation for both facilities and individual practitioners; and Stinson (1982) on community-based health finance systems. The discussion of decentralization benefitted from the World Development Report, 1982, and Birdsall (1986).

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APPENDIX TABLES

Table 1. Basic indicators

	Population (millions) mid-1984	Area (thousands of square kilometers)	GNP per capita ^a		Life expectancy at birth (years) 1984
			Dollars 1984	Average annual growth rate (percent) 1985-84 ^b	
Low-income economies	2,389.5 t	31,796 t	260 w	2.8 w	60 w
China and India	1,778.3 t	12,849 t	290 w	3.3 w	63 w
Other low-income	611.2 t	18,946 t	190 w	0.9 w	52 w
Sub-Saharan Africa	257.7 t	15,846 t	210 w	-0.1 w	48 w
1 Ethiopia	42.2	1,222	110	0.4	44
2 Bangladesh	98.1	144	130	0.6	50
3 Mali	7.3	1,240	140	1.1	46
4 Zaïre	29.7	2,345	140	-1.6	51
5 Burkina Faso	6.6	274	160	1.2	45
6 Nepal	16.1	141	160	0.2	47
7 Burma	36.1	677	180	2.3	58
8 Malawi	6.8	118	180	1.7	45
9 Niger	6.2	1,267	190	-1.3	43
10 Tanzania	21.5	945	210	0.6	52
11 Burundi	4.6	28	220	1.9	48
12 Uganda	15.0	236	230	2.9	51
13 Togo	2.9	57	250	0.5	51
14 Central African Rep	2.5	623	260	-0.1	49
15 India	749.2	3,288	260	1.6	56
16 Madagascar	9.9	587	260	-1.6	52
17 Somalia	5.2	638	260		46
18 Benin	3.9	113	270	1.0	49
19 Rwanda	5.8	26	280	2.3	47
20 China	1,029.2	9,561	310	4.5	69
21 Kenya	19.6	583	310	2.1	54
22 Sierra Leone	3.7	72	310	0.6	38
23 Haiti	5.4	28	320	1.0	55
24 Guinea	5.9	246	330	1.1	38
25 Ghana	12.3	239	350	-1.9	53
26 Sri Lanka	15.9	66	360	2.9	70
27 Sudan	21.3	2,506	360	1.2	48
28 Pakistan	92.4	804	380	2.5	51
29 Senegal	6.4	196	380	-0.5	46
30 Afghanistan		648			
31 Bhutan	1.2	47			44
32 Chad	4.9	1,284			44
33 Kampuchea, Dem		181			
34 Lao PDR	3.5	237			45
35 Mozambique	13.4	802			46
36 Viet Nam	60.1	330			65
Middle-income economies	1,187.6 t	40,927 t	1,250 w	3.1 w	61 w
Oil exporters	556.1 t	15,510 t	1,000 w	3.3 w	58 w
Oil importers	631.5 t	25,417 t	1,480 w	3.1 w	64 w
Sub-Saharan Africa	148.4 t	8,226 t	680 w	2.4 w	50 w
Lower middle-income	691.1 t	19,132	740 w	3.0 w	58 w
37 Mauritania	1.7	1,031	450	0.3	46
38 Liberia	2.1	111	470	0.5	50
39 Zambia	6.4	753	470	-1.3	52
40 Lesotho	1.5	30	530	5.9	54
41 Bolivia	6.2	1,099	540	0.2	53
42 Indonesia	158.9	1,919	540	4.9	55
43 Yemen Arab Rep	7.8	195	550	5.9	45
44 Yemen PDR	2.0	333	550		47
45 Cote d'Ivoire	9.9	322	610	0.2	52
46 Philippines	53.4	300	660	2.6	63
47 Morocco	21.4	447	670	2.8	59
48 Honduras	4.2	112	700	0.5	61
49 El Salvador	5.4	21	710	-0.6	65
50 Papua New Guinea	3.4	462	710	0.6	52
51 Egypt, Arab Rep	45.9	1,001	720	4.3	60
52 Nigeria	96.5	924	730	2.8	50
53 Zimbabwe	8.1	391	760	1.5	57
54 Cameroon	9.9	475	800	2.9	54
55 Nicaragua	3.2	130	860	-1.5	60
56 Thailand	50.0	514	860	4.2	64
57 Botswana	1.0	600	960	8.4	58
58 Dominican Rep	6.1	49	970	3.2	64
59 Peru	18.2	285	1,000	-0.1	59
60 Mauritius	1.0	2	1,090	2.7	66
61 Congo, People's Rep	1.8	342	1,140	3.7	57
62 Ecuador	9.1	284	1,150	3.8	65
63 Jamaica	2.2	11	1,150	-0.4	73
64 Guatemala	7.7	109	1,160	2.0	60
65 Turkey	48.4	781	1,160	2.9	64

See Notes at end of Appendix for sources and notes.

Table 1 (continued)

	Population (millions) mid-1984	Area (thousands of square kilometers)	GNP per capita ^a		Life expectancy at birth (years) 1984
			Dollars 1984	Average annual growth rate (percent) 1965-84 ^b	
66 Costa Rica	2.5	51	1 190	1.6	73
67 Paraguay	3.3	407	1 240	4.4	66
68 Tunisia	7.0	164	1 270	4.4	62
69 Colombia	28.4	1 139	1 390	3.0	65
70 Jordan	3.4	98	1 570	4.8	64
71 Syrian Arab Rep	10.1	185	1 620	4.5	63
72 Angola	9.9	1 247			43
73 Cuba	9.9	115			75
74 Korea, Dem Rep	19.9	121			68
75 Lebanon		10			
76 Mongolia	1.9	1 565			63
Upper middle-income	498.6 t	21,795 t	1,950 w	3.3 w	65 w
77 Chile	11.8	757	1 700	-0.1	70
78 Brazil	132.6	8 512	1 720	4.6	64
79 Portugal	10.2	92	1 970	3.5	74
80 Malaysia	15.3	330	1 980	4.5	69
81 Panama	2.1	77	1 980	2.6	71
82 Uruguay	3.0	176	1 980	1.8	73
83 Mexico	76.8	1 973	2 040	2.9	66
84 Korea, Rep of	40.1	98	2 110	6.6	68
85 Yugoslavia	23.0	256	2 120	4.3	69
86 Argentina	30.1	2 767	2 230	0.3	70
87 South Africa	31.6	1 221	2 340	1.4	64
88 Algeria	21.2	2 382	2 410	3.6	60
89 Venezuela	16.8	912	3 410	0.9	69
90 Greece	9.9	132	3 770	3.8	75
91 Israel	4.2	21	5 060	2.7	75
92 Hong Kong	5.4	1	6 330	6.2	76
93 Trinidad and Tobago	1.2	5	7 150	2.6	69
94 Singapore	2.5	1	7 260	7.8	72
95 Iran, Islamic Rep	43.8	1 648			61
96 Iraq	15.1	435			60
High-income oil exporters	18.6 t	4,311 t	11,250 w	3.2 w	62 w
97 Oman	1.1	300	6 490	6.1	53
98 Libya	3.5	1 760	8 520	-1.1	59
99 Saudi Arabia	11.1	2 150	10 530	5.9	62
100 Kuwait	1.7	18	16 720	-0.1	72
101 United Arab Emirates	1.3	84	21 920		72
Industrial market economies	733.4 t	30,935 t	11,430 w	2.4 w	76 w
102 Spain	38.7	505	4 440	2.7	77
103 Ireland	3.5	70	4 970	2.4	73
104 Italy	57.0	301	6 420	2.7	77
105 New Zealand	3.2	269	7 730	1.4	74
106 United Kingdom	56.4	245	8 570	1.6	74
107 Belgium	9.9	31	8 610	3.0	75
108 Austria	7.6	84	9 140	3.6	73
109 Netherlands	14.4	41	9 520	2.1	77
110 France	54.9	547	9 760	3.0	77
111 Japan	120.0	372	10 630	4.7	77
112 Finland	4.9	337	10 770	3.3	75
113 Germany, Fed. Rep	61.2	249	11 130	2.7	75
114 Denmark	5.1	43	11 170	1.8	75
115 Australia	15.5	7 687	11 740	1.7	76
116 Sweden	8.3	450	11 860	1.8	77
117 Canada	25.1	9 976	13 280	2.4	76
118 Norway	4.1	324	13 940	3.3	77
119 United States	237.0	9 363	15 390	1.7	76
120 Switzerland	6.4	41	16 330	1.4	77
East European nonmarket economies	388.3 t	23,421 t			68 w
121 Hungary	10.7	93	2 100	6.2	70
122 Poland	36.9	313	2 100	1.5	71
123 Albania	2.9	29			70
124 Bulgaria	9.0	111			71
125 Czechoslovakia	15.5	128			70
126 German Dem Rep	16.7	108			71
127 Romania	22.7	238			71
128 USSR	275.0	22 402			67

Table 3. Health Expenditures as Percent of Total Central Government Spending

Country	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Argentina		4.5	2.8	2.2	1.7	1.7	1.4	1.1	1.4	
Australia	7.9	13.0	11.0	10.4	10.2	10.0	10.1	7.1	7.1	7.8
Austria	12.3	12.6	13.2	12.8	12.9	13.0	12.9	12.2	11.5	
Bangladesh	5.4	5.0	4.7	5.3		6.4				
Belgium	1.6	1.5	1.8	1.8	1.9	1.6	1.7	1.7		
Benin			6.4	6.6	5.6					
Bolivia	8.4	8.0	8.0	8.3	8.6	12.1	7.2		3.1	
Botswana	6.3	6.4	6.8	6.0	4.7	5.4	5.9	4.9	5.6	
Brazil	6.5	7.5	6.9	7.3	7.4	6.5	7.4	7.8	7.3	
Burkina Faso	6.6	6.5	5.3	5.6	4.9	5.8	5.8	6.6	6.8	
Burma	6.6	6.6	5.9	6.7	6.4	5.3	6.1	7.0		
Burundi	7.2	5.9	4.7							
Cameroon		1.8	4.8	1.6	4.3	5.1	2.7		3.7	4.4
Canada	7.7	8.3	6.9	7.6	7.6	6.7	6.2	5.2	6.3	
Chad	3.7	4.2								
Chile	7.0	6.9	6.9	6.9	6.5	7.4	6.6	6.8	6.0	6.2
Colombia	6.1	6.4	6.0	6.8	6.1	6.8				
Costa Rica	4.5	5.0	3.3	25.1	25.0			32.8	22.5	
Denmark	3.6	2.9	1.9	1.7	1.6	1.7	1.4			
Dominican Rep.	6.8	8.9	9.0	9.4	9.1	9.3	9.7	10.7	10.5	
Ecuador	7.3	7.2	6.8	8.2	8.4	7.8	7.8	7.7	7.5	
Egypt	2.7	2.6	3.2	3.6	3.0		2.2	2.4	2.8	2.7
El Salvador	8.2	9.2	9.8	8.9	8.7	9.0	8.4	7.1	8.4	8.1
Ethiopia	1.7	1.5	4.9	4.0	3.8	3.4				
Finland	10.7	10.8	11.5	11.1	10.5	10.5	11.2	10.9	10.6	
France	15.0	14.8	14.6	14.8	15.0	15.0	14.7	14.6		
Gambia, The	8.2	8.6	9.1	6.3						
Germany, F.R.	19.8	19.8	19.3	19.3	19.0	19.0	19.2	19.3	18.6	
Ghana	8.3	8.0	7.4	7.3	6.0	7.0	6.4	5.8		8.6
Greece	7.9	8.1	8.1	3.9	10.5	10.3	10.5			
Guatemala	8.6	8.3	7.6	7.1	7.6					
Honduras	12.8	14.7	8.5	8.5	8.0					
India	2.4	2.5	2.0	2.4	1.7	1.6	2.0	2.3	2.1	

Table 3. Cont'd.

Indonesia	2.1	1.9	2.5	2.1	2.4	2.5	2.5	2.5	2.2	
Iran	3.2	2.9	3.0	3.5	4.4	6.4	5.4	5.5	5.7	
Israel	3.7	3.4	4.3	4.6	5.2	3.5	3.5	4.3	3.7	
Italy	16.8			7.6	10.5	12.6	10.7	10.6	11.5	11.5
Jamaica	9.3	8.2	7.8							
Jordan	4.1	4.4	3.6	3.7	4.1		3.7	3.8	3.6	
Kenya	8.0	7.9	8.2	7.4	7.2	7.8	7.8	7.3	7.0	
Korea		1.1	1.7	1.6	1.1	1.2	1.3	1.4	1.6	1.4
Kuwait			5.9	5.9	6.3	5.1	4.9	5.4	6.2	6.3
Lesotho	5.5	5.2	5.4						7.2	
Liberia	9.3	7.2	7.9	8.2	6.1	5.2	7.6	7.2	7.3	6.2
Malawi	5.8	6.4	5.4	5.3	1.7	5.5	5.2	5.2	6.8	
Malaysia	6.9	5.7	7.4	6.4	6.5	5.1	4.4			
Mali		6.9	6.2	5.3	5.3	3.1	4.6	2.8	2.5	
Mauritania				3.5	2.8					
Mexico	4.2	4.1	4.4	4.0	3.9	2.4	1.9	1.3	1.2	
Morocco	3.6	3.3	3.0	3.6	3.1	3.4	3.0	2.9	2.9	
Nepal	5.9	6.7	5.5	5.3	5.1	3.9	4.1	4.5		
Netherlands	11.7	11.6	11.8	11.9	11.7	11.7	11.6	11.6	11.3	11.0
New Zealand	15.0	15.7	15.0	15.0	15.2	15.2	14.2	13.5	12.6	
Nicaragua	8.4	11.8	9.6	10.0	10.3	14.6				
Niger		4.9	4.5	4.6	4.7	4.1				
Nigeria	2.2	2.7	2.2	2.5						
Norway	13.4	13.3	11.2				10.3	10.6	10.6	
Oman	3.2	3.2	2.7	3.2	3.2	2.9	3.0	3.1	3.5	4.1
Pakistan	1.5	1.8	1.6	1.6	1.3	1.5	1.6	1.1	1.0	
Panama	14.5	13.2	14.5	15.1	12.1	12.7	13.2	13.1		
Papua New Guinea	6.3	8.5	8.3	8.2	7.9	8.6	9.5	9.4	9.3	
Paraguay	2.8	2.8	2.7	2.7	3.7	3.6	4.5	3.7		
Peru	5.1	5.8	5.9	5.6	6.1	4.5	5.3	6.2		
Philippines	3.9	4.5	4.6	4.3	4.7	3.9	4.1	4.1	5.8	
Portugal	4.4									
Romania	0.3	0.4	0.4	0.4	0.3	0.6	0.7	0.8	0.8	
Rwanda	6.5	5.0	4.8	6.2	4.8	4.5				
Senegal	5.9					4.7	1.6	3.9	1.7	
Sierra Leone	4.6	5.0	5.2	4.3	4.1				6.2	8.0
Singapore	8.5	7.7	7.4	8.5	7.0	6.9	7.2	6.4	6.1	
Somalia	5.9	5.7	4.9	3.2						
Spain	0.9	0.8	0.7	0.7	0.8	0.7	0.6	0.6	0.6	
Sri Lanka	6.1	6.2	6.0	4.2	5.2	4.9	3.5	3.3	5.1	
Sudan	1.6	1.8	1.5	1.7	1.5	1.4		1.3		

Table 3. Cont'd.

Swaziland	6.4	6.8	6.5	4.9	6.3	7.2	5.4	7.1	7.4	
Sweden	3.1	3.1	2.6	2.6	2.5	2.2	2.0	2.1	1.5	1.4
Switzerland	10.4	10.1	10.6	10.9	11.4	11.7	12.7	12.9	13.4	
Syria	0.8	1.0	0.9	0.7	1.0	0.8	1.1			
Tanzania	7.0	7.1	7.1	7.3	5.7	6.0	6.0			
Thailand	3.7	4.4	4.7	4.4	4.5	4.1	4.2	4.9	5.1	5.4
Togo			4.7	4.6	5.6		5.3	6.1	5.7	5.4
Trinidad and Tobago		7.0	7.8	6.9	6.4	5.8	5.9			
Tunisia	6.2	6.7	7.0	7.3	6.4	7.2	7.7	6.7		
Turkey		2.5	2.5	2.2	2.9	3.6	2.1			
Uganda	4.0	5.6	8.1	8.2	5.2	5.8	5.9	5.2	4.6	2.6
United Arab Emirates	10.1	7.0	8.9	9.2	9.3	7.9	6.2	7.1	7.7	
United Kingdom	12.9	12.9	12.6	12.5	12.4					
United States	9.3	9.7	10.0	10.2	10.5	10.4	10.8	10.8	10.7	11.0
Uruguay	3.9	3.9	3.8	5.0	1.7	4.9	3.8	3.3	3.4	
Venezuela	9.1	9.1	8.0	7.8	8.5	8.8	7.6	7.6	8.6	7.6
Yemen, Arab Rep.	2.7	2.9	2.8	3.9	3.4	4.0	3.3	4.5	4.9	4.2
Zaire	1.5	3.0	4.0	3.9	3.2	2.5	2.6	3.2		
Zambia	5.8	7.0	7.3	7.7	6.9	6.1	6.0	8.4		
Zimbabwe		6.9	5.8	5.7	5.9	5.4	7.1	6.4	6.1	

Table 4. Index of Constant per Capita Central Government Health Expenditures

Country	1975	1976	1977	1978	1979	1980	1981	1982	1983
Argentina		189.7	100.0	79.7	65.0	69.7	59.6	43.5	60.0
Australia	63.2	118.5	100.0	97.9	95.5	93.5	96.5	68.5	72.5
Austria	84.6	92.1	100.0	105.1	109.6	114.0	117.4	112.3	108.9
Bangladesh	54.1	94.1	100.0	95.2		114.5			
Belgium	81.6	82.6	100.0	106.8	117.2	107.4	120.3	118.7	
Benin			100.0	85.8	79.1				
Bolivia	89.4	98.0	100.0	108.4	108.9		87.3	35.3	
Botswana	88.6	96.4	100.0	121.2	91.0	108.9	135.6	139.8	146.0
Brazil	82.1	100.6	100.0	110.7	106.1	108.1	119.8	134.0	114.0
Burkina Faso	105.4	121.8	100.0	112.7	110.3	117.1	119.0	151.6	118.2
Burma	94.8	99.3	100.0	128.4	122.8	115.7	144.2	177.1	
Burundi	122.6	117.8	100.0						
Cameroon		110.6	100.0	100.6	93.2	110.7	82.2		113.1
Canada	107.3	114.9	100.0	114.1	111.9	103.9	100.2	87.6	110.0
Chile	113.5	96.8	100.0	97.8	82.8	89.5	81.0	98.0	
Colombia	113.1	102.8	100.0	125.0	127.9	159.5			
Costa Rica	124.3	149.6	100.0	950.1	1,021.4				
Denmark	170.9	142.7	100.0	93.4	93.3	106.5	91.0		
Dominican Rep.	85.1	106.5	100.0	113.2	124.7	127.1	129.4	118.7	
Ecuador	89.7	97.6	100.0	106.1	104.3	134.2	151.7	142.8	110.8
Egypt	97.0	98.3	100.0	106.6	101.2		74.3		
El Salvador	77.5	96.4	100.0	97.8	92.9	98.8	89.6	72.0	
Ethiopia	90.1	92.5	100.0	94.5	90.2	93.1			
Finland	89.1	91.9	100.0	98.6	99.3	102.4	112.3	117.0	121.4
France	94.8	98.3	100.0	108.0	113.7	116.9	122.1	127.1	
Germany, F.R.	94.3	99.2	100.0	102.7	103.2	110.4	114.1	115.8	111.7
Ghana	133.7	127.1	100.0	81.5	63.9	54.4	42.1	37.9	
Greece	81.6	95.2	100.0	128.3	137.3	143.5	164.6		
Honduras	126.9	157.5	100.0	118.6	113.8				
India	112.6	119.5	100.0	114.7	92.3	85.9	112.5	136.9	
Indonesia	78.8	81.8	100.0	99.7	125.2	143.2	168.7	145.1	133.1
Iran	110.0	96.7	100.0	110.9	96.9	127.1	109.4		
Israel	80.7	79.6	100.0	100.8	129.4	89.8	95.1	115.6	119.8

Table 4. Cont'd.

Jamaica	114.0	105.8	100.0						
Jordan	91.3	100.2	100.0	98.4	132.9		115.5	120.3	111.3
Kenya	102.3	99.9	100.0	116.6	123.3	132.3	142.4	130.4	105.1
Korea		62.9	100.0	100.7	76.7	86.2	96.7	115.3	139.3
Kuwait			100.0	119.8	84.7	69.8	81.8		
Lesotho	73.9	81.4	100.0						
Liberia	92.7	104.4	100.0	121.7	119.4	73.1	123.5		
Malawi	123.9	111.8	100.0	125.3	49.1	166.3	146.8	115.5	154.2
Malaysia	77.4	68.9	100.0	81.2	79.4	85.1	102.9		
Mexico	59.6	71.4	100.0	107.7	137.1	117.2	137.4	217.2	
Morocco	94.1	106.0	100.0	103.0	91.9	103.2	102.3	97.2	83.4
Nepal	71.8	100.2	100.0	98.2	95.1	74.2	84.1	109.8	
Netherlands	92.2	95.0	100.0	104.9	109.0	112.1	113.5	116.2	116.5
New Zealand	101.2	96.0	100.0	108.2	107.2	111.3	114.1	113.1	
Nicaragua	71.7	95.5	100.0	82.9	71.6	151.7			
Niger		113.6	100.0	122.6	137.2	146.3			
Nigeria	87.8	99.4	100.0	63.4					
Norway	100.0	111.8	100.0				102.7	108.0	111.1
Pakistan	99.3	118.0	100.0	117.4	103.8	113.1	138.5	92.1	99.3
Panama	102.4	93.9	100.0	106.8	111.4	112.7	124.7	140.9	
Papua New Guinea	97.1	117.5	100.0	108.9	101.4	114.7	132.4	126.5	118.6
Paraguay	88.5	97.9	100.0	110.1	149.6	152.8	213.8	183.3	
Peru	93.5	104.4	100.0	85.2	85.2	85.4	103.2	103.8	
Philippines	82.6	96.6	100.0	96.5	101.7	88.3	99.0	97.3	121.9
Rwanda	108.0	96.0	100.0	131.1	118.4	105.5			
Sierra Leone	110.1	100.3	100.0	93.7	90.7				143.7
Singapore	88.8	94.9	100.0	119.2	106.5	119.5	155.1	133.2	152.2
Somalia	90.9	87.9	100.0	96.6					
South Africa			100.0	97.6	92.5	93.6	96.5	131.6	
Spain	107.4	93.4	100.0	103.8	127.7	106.3	103.6	101.9	110.8
Sri Lanka	107.6	118.2	100.0	126.1	153.8	168.0	101.6	102.0	155.6
Sudan	87.4	104.4	100.0	103.2	80.4	67.9		60.3	
Swaziland	83.6	99.9	100.0	108.1	93.9	104.8	90.2	113.9	101.3
Sweden	99.8	108.0	100.0	105.2	111.1	98.6	95.9	102.4	80.2
Switzerland	84.2	91.0	100.0	101.1	108.3	113.1	117.5	124.4	130.0
Syria	92.8	119.8	100.0	75.5	99.5	101.4	114.5		

Table 4. Cont'd.

Tanzania	111.3	93.0	100.0	107.2	105.2	94.3	87.8		
Thailand	63.7	89.4	100.0	105.4	114.0	112.1	120.8	155.1	162.3
Togo			100.0	105.1	97.7		88.3	93.4	80.5
Trinidad and Tobago		87.6	100.0	120.7	119.5	98.2	99.1		
Tunisia	74.1	84.9	100.0	109.6	100.8	109.7	126.9	132.9	
Turkey		84.5	100.0	81.9	116.9	128.7	69.6		65.9
United Kingdom	102.4	105.2	100.0	103.5	104.9				
United States	85.1	93.6	100.0	103.5	107.4	113.8	121.4	127.4	131.9
Uruguay	96.8	103.5	100.0	137.1	121.6	142.9			
Venezuela	89.4	98.5	100.0	96.4	80.1	81.4	91.4	87.5	
Yemen	72.5	87.9	100.0	190.2	250.1	291.4	340.2	518.7	
Zaire	47.7	101.3	100.0	77.0	60.2	49.0	60.8	70.9	
Zambia	101.3	105.7	100.0	88.5	72.6	78.7	78.4	109.3	
Zimbabwe		108.7	100.0	110.1	103.1	109.5	136.3	148.5	

Table 5. Health-related indicators

	Population per :				Daily calorie supply per capita	
	Physician		Nursing person		Total	As percentage of requirement
	1985	1981	1985	1981	1983	1983
Low-income economies	8,357 w	5,375 w	5,037 w	3,920 w	2,336 w	102 w
China and India	4,218 w	2,066 w	4,443 w	2,917 w	2,415 w	105 w
Other low-income	26,631 w	17,234 w	7,951 w	7,548 w	2,275 w	102 w
Sub-Saharan Africa	38,649 w	42,670 w	5,714 w	3,022 w	2,064 w	90 w
1 Ethiopia	70,190	88,120	5,970	5,000	2,152	93
2 Bangladesh		9,010		19,400	1,864	81
3 Mali	42,010	25,380	3,200	2,320	1,597	68
4 Zaire	39,050				2,136	96
5 Burkina Faso	74,110	49,290	4,170	3,070	2,014	85
6 Nepal	46,180	30,060		33,430	2,047	93
7 Burma	11,660	4,660	11,410	4,890	2,534	117
8 Malawi	46,900	52,960	49,240	2,980	2,200	95
9 Niger	71,440		6,210		2,271	97
10 Tanzania	21,840		2,100		2,271	98
11 Burundi	54,930		7,310		2,378	102
12 Uganda	11,080	22,180	3,130	2,000	2,351	101
13 Togo	24,980	18,550	4,990	1,640	2,156	94
14 Central African Rep.	44,490	23,090	3,000	2,120	2,048	91
15 India	4,860	2,610	6,500	4,670	2,115	96
16 Madagascar	9,900	9,940	3,620	1,090	2,543	112
17 Somalia	35,060	15,630	3,630	2,550	2,063	89
18 Benin	28,790	16,980	2,540	1,660	1,907	83
19 Rwanda	74,170	29,150	7,450	10,260	2,276	98
20 China	3,780	1,730	3,040	1,670	2,620	111
21 Kenya	13,450	7,540	1,860	990	1,919	83
22 Sierra Leone	17,690	17,670	4,700	2,110	2,062	91
23 Haiti	12,580		12,870		1,887	83
24 Guinea	54,610		4,750		1,939	84
25 Ghana	12,040	6,760	3,710	630	1,516	66
26 Sri Lanka	5,750	7,620	3,210	1,260	2,348	106
27 Sudan	25,500	9,070	3,360	1,440	2,122	90
28 Pakistan	3,160	3,320	9,900	5,870	2,205	95
29 Senegal	21,130	13,060	2,640	1,990	2,436	102
30 Afghanistan	15,770		24,450			
31 Bhutan		18,160		7,960		
32 Chad	73,040		13,620		1,620	68
33 Kampuchea, Dem.	22,500		3,670			
34 Lao PDR	26,510		5,320		1,992	90
35 Mozambique	21,560	33,340	5,370	5,610	1,668	71
36 Viet Nam		4,310		1,040	2,017	93
Middle-income economies	11,182 w	4,764 w	3,526 w	1,474 w	2,611 w	110 w
Oil exporters	20,085 w	6,587 w	5,454 w	1,884 w	2,512 w	109 w
Oil importers	3,943 w	2,902 w	1,876 w	1,273 w	2,692 w	111 w
Sub-Saharan Africa	35,741 w	8,445 w	4,876 w	2,208 w	2,064 w	89 w
Lower middle-income	18,215 w	8,235 w	4,783 w	1,783 w	2,448 w	106 w
37 Mauritania	36,580				2,252	97
38 Liberia	12,450	8,550	2,300	2,940	2,367	102
39 Zambia	11,390	7,110	5,820	1,660	1,929	84
40 Lesotho	22,930		4,700		2,376	104
41 Bolivia	3,310	1,950	3,990		1,954	82
42 Indonesia	31,820	11,320	9,500		2,380	110
43 Yemen Arab Rep.	58,240	7,070		3,440	2,226	92
44 Yemen, PDR	12,870	7,120	1,850	820	2,254	94
45 Cote d'Ivoire	20,690		1,850		2,576	112
46 Philippines	1,310	2,150	1,130	2,590	2,357	104
47 Morocco	12,120	17,230	2,290	900	2,544	105
48 Honduras	5,450		1,540		2,135	94
49 El Salvador	4,630	3,220	1,300		2,060	90
50 Papua New Guinea	12,520	16,070	620	960	2,109	79
51 Egypt, Arab Rep.	2,260	800	2,030	790	3,163	126
52 Nigeria	44,990	10,540	5,780	2,420	2,022	86
53 Zimbabwe	5,190	6,650	990	1,000	1,956	82
54 Cameroon	29,720		1,970		2,031	88
55 Nicaragua	2,490	2,290	1,360	590	2,269	107
56 Thailand	7,230	6,770	5,020	2,140	2,330	105
57 Botswana	22,090	9,250	16,210	700	2,152	93
58 Dominican Rep.	1,720	1,390	1,640	1,240	2,368	105
59 Peru	1,620		880		1,997	85
60 Mauritius	3,850	1,730	1,990	570	2,675	118
61 Congo, People's Rep.	14,210		950		2,425	109
62 Ecuador	3,020		2,320		2,043	89
63 Jamaica	1,930		340		2,493	111
64 Guatemala	3,830		8,250	1,360	2,071	95
65 Turkey	2,860	1,500	2,290	1,240	3,100	123

Table 5 (continued)

	Population per:				Daily calorie supply per capita	
	Physician		Nursing person		Total 1988	As percentage of requirement 1983
	1985	1981	1985	1981		
66 Costa Rica	2,040		630		2,556	114
67 Paraguay	1,840	1,310	1,550	650	2,811	122
68 Tunisia	8,040	3,620	1,150	950	2,889	121
69 Colombia	2,530		890		2,546	110
70 Jordan	4,670	1,170	1,810	1,170	2,882	117
71 Syrian Arab Rep.	4,050	2,160	11,760	1,370	3,156	127
72 Angola	12,000		3,820		2,041	87
73 Cuba	1,150	600	620		2,914	126
74 Korea, Dem. Rep.					2,968	127
75 Lebanon	1,240		2,500			
76 Mongolia	710	440	310	240	2,841	117
Upper middle-income	2,473 w	1,374 w	1,914 w	975 w	2,830 w	116 w
77 Chile	2,080	950	600		2,574	105
78 Brazil	2,180	1,200	1,550	1,140	2,533	106
79 Portugal	1,170	450	1,160		3,046	124
80 Malaysia	6,220	3,920	1,320	1,390	2,477	111
81 Panama	2,170	1,010	680		2,275	98
82 Uruguay	870	510	590		2,647	99
83 Mexico	2,060	1,140	950		2,934	126
84 Korea, Rep. of	2,740	1,440	2,990	350	2,765	118
85 Yugoslavia	1,190	670	850	300	3,575	141
86 Argentina	640		610		3,159	119
87 South Africa	2,050		500		2,897	118
88 Algeria	8,400		11,770		2,750	115
89 Venezuela	1,270	930	560		2,451	99
90 Greece	710	390	600	370	3,601	144
91 Israel	410	400	300	130	3,110	121
92 Hong Kong	2,400	1,260	1,220	800	2,787	122
93 Trinidad and Tobago	3,820	1,390	560	390	3,120	129
94 Singapore	1,910	1,100	600	340	2,636	115
95 Iran, Islamic Rep.	3,770	2,630	4,170	1,160	2,855	118
96 Iraq	4,970	1,790	2,910	2,250	2,840	118
High-income oil exporters	8,836 w	1,408 w	4,626 w	573 w	3,345 w	
97 Oman	23,790	1,680	6,380	440		
98 Libya	3,970	660	850	360	3,651	155
99 Saudi Arabia	9,400	1,800	6,060	730	3,244	134
100 Kuwait	830	600	270	180	3,369	
101 United Arab Emirates		720		390	3,407	
Industrial market economies	867 w	554 w	425 w	177 w	3,352 w	130 w
102 Spain	810	360	1,220	280	3,237	132
103 Ireland	960	780	170	120	3,579	143
104 Italy	1,850	750	790	250	3,521	140
105 New Zealand	820	590	980	110	3,493	132
106 United Kingdom	860	680	200	120	3,226	128
107 Belgium	700	380	590	130	3,705	140
108 Austria	720	580	350	170	3,479	132
109 Netherlands	860	480	270		3,477	129
110 France	890	460		110	3,514	139
111 Japan	970	740	410	210	2,653	113
112 Finland	1,290	460	180	100	3,077	114
113 Germany, Fed. Rep.	680	420	500	170	3,475	130
114 Denmark	740	420	190	140	3,525	131
115 Australia	720	500	110	100	3,068	115
116 Sweden	910	410	310	100	3,115	116
117 Canada	770	510	190	120	3,459	130
118 Norway	800	460	340	70	3,088	115
119 United States	640	500	310	180	3,623	137
120 Switzerland	750	390	270	130	3,472	129
East European nonmarket economies	564 w	329 w	300 w	199 w	3,408 w	132 w
121 Hungary	630	320	240	140	3,563	135
122 Poland	800	550	410		3,336	127
123 Albania	2,100		550		2,907	121
124 Bulgaria	800	400	410	190	3,675	147
125 Czechoslovakia	540	350	200	130	3,555	144
126 German Dem. Rep.	870	490			3,718	142
127 Romania	740	650	400	280	3,341	126
128 USSR	480	260	280		3,381	132

Table 7. Life expectancy and related indicators

	Life expectancy at birth (years)				Infant mortality rate (aged under 1)		Child death rate (aged 1-4)	
	Male		Female		1985	1984	1985	1984
	1985	1984	1985	1984				
Low-income economies	49 w	60 w	51 w	61 w	125 w	72 w	19 w	9 w
China and India	51 w	63 w	53 w	64 w	115 w	59 w	16 w	6 w
Other low-income	44 w	50 w	45 w	52 w	147 w	114 w	27 w	18 w
Sub-Saharan Africa	41 w	47 w	43 w	50 w	155 w	129 w	36 w	26 w
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1 Ethiopia	42	43	43	46	166	172	37	39
2 Bangladesh	45	50	44	51	153	124	24	18
3 Mali	37	44	39	48	207	176	47	44
4 Zaire	42	49	45	53	142	103	30	20
5 Burkina Faso	40	44	42	48	195	146	52	30
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6 Nepal	40	47	39	46	184	135	30	20
7 Burma	46	57	49	60	125	67	21	7
8 Malawi	38	44	40	46	201	158	55	36
9 Niger	35	42	38	45	181	142	46	29
10 Tanzania	41	50	44	53	138	111	29	22
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11 Burundi	42	46	45	49	143	120	38	24
12 Uganda	43	49	47	53	122	110	26	21
13 Togo	40	50	43	53	156	98	38	12
14 Central African Rep.	40	47	41	50	169	138	47	27
15 India	46	56	44	55	151	90	23	11
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16 Madagascar	41	51	44	54		110		22
17 Somalia	36	44	40	47	166	153	37	33
18 Benin	41	47	43	51	168	116	52	19
19 Rwanda	47	46	51	49	141	128	35	26
20 China	55	68	59	70	90	36	11	2
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21 Kenya	43	52	46	56	113	92	25	16
22 Sierra Leone	32	38	33	39	221	176	69	44
23 Haiti	46	53	47	57	138	124	37	22
24 Guinea	34	38	36	39	197	176	53	44
25 Ghana	45	51	49	55	123	95	25	11
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26 Sri Lanka	63	68	64	72	63	37	6	2
27 Sudan	39	46	41	50	161	113	37	18
28 Pakistan	46	52	44	50	150	116	23	16
29 Senegal	40	45	42	48	172	138	42	27
30 Afghanistan	34		35		223		39	
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31 Bhutan	34	44	32	43	184	135	30	20
32 Chad	39	43	41	45	184	139	47	27
33 Kampuchea, Dem.	43		45		135		19	
34 Lao PDR	39	43	42	46	196	153	34	24
35 Mozambique	36	45	39	48	172	125	31	22
36 Viet Nam	47	63	50	67	89	50	8	4
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Middle-income economies	51 w	59 w	54 w	63 w	115 w	72 w	18 w	8 w
Oil exporters	47 w	56 w	50 w	60 w	138 w	89 w	22 w	12 w
Oil importers	55 w	62 w	58 w	67 w	97 w	57 w	15 w	5 w
Sub-Saharan Africa	41 w	49 w	44 w	52 w	168 w	107 w	33 w	19 w
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Lower middle-income	47 w	56 w	50 w	60 w	133 w	83 w	22 w	11 w
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37 Mauritania	39	45	42	48	171	133	41	25
38 Liberia	40	48	44	52	172	128	32	23
39 Zambia	42	50	46	53	123	85	29	15
40 Lesotho	47	52	50	56	143	107	20	14
41 Bolivia	42	51	46	54	161	118	37	20
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42 Indonesia	43	53	45	56	138	97	20	12
43 Yemen Arab Rep.	37	44	38	46	200	155	55	35
44 Yemen, PDR	37	46	39	48	194	146	52	31
45 Cote d'Ivoire	43	51	45	54	176	106	37	15
46 Philippines	54	61	57	65	73	49	11	4
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47 Morocco	48	57	51	61	147	91	32	10
48 Honduras	48	59	51	63	131	77	24	7
49 El Salvador	52	63	56	68	120	66	20	5
50 Papua New Guinea	44	51	44	54	143	69	23	7
51 Egypt, Arab Rep.	47	59	50	62	173	94	21	11
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52 Nigeria	40	48	43	51	179	110	33	21
53 Zimbabwe	46	55	49	59	104	77	15	7
54 Cameroon	44	53	47	56	145	92	34	10
55 Nicaragua	49	58	51	62	123	70	24	6
56 Thailand	53	62	58	66	90	44	11	3
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57 Botswana	46	55	49	61	108	72	21	11
58 Dominican Rep.	52	62	56	66	111	71	14	6
59 Peru	49	58	52	61	131	95	24	11
60 Mauritius	59	62	63	69	64	26	9	1
61 Congo, People's Rep.	48	55	51	59	121	78	19	7
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62 Ecuador	54	63	57	67	113	67	22	5
63 Jamaica	63	71	67	76	51	20	4	1
64 Guatemala	48	58	50	62	114	66	16	5
65 Turkey	52	61	55	66	157	66	35	9

Table 7 (continued)

	Life expectancy at birth (years)				Infant mortality rate (aged under 1)		Child death rate (aged 1-4)	
	Male		Female		1985	1984	1985	1984
	1985	1984	1985	1984				
66 Costa Rica	63	71	66	76	72	19	8	()
67 Paraguay	56	64	60	68	74	44	7	2
68 Tunisia	50	60	51	64	147	79	30	8
69 Colombia	53	63	59	67	99	48	8	3
70 Jordan	49	62	51	66	117	50	19	3
71 Syrian Arab Rep.	51	62	54	65	116	55	19	4
72 Angola	34	42	37	44	193	144	52	30
73 Cuba	65	73	69	77	38	16	4	()
74 Korea, Dem. Rep.	55	65	58	72	64	28	6	2
75 Lebanon	60		64		57		4	
78 Mongolia	55	61	58	65	89	50	11	4
Upper middle-income	58 w	63 w	60 w	68 w	91 w	56 w	13 w	5 w
77 Chile	56	67	62	73	110	22	14	1
78 Brazil	55	62	59	67	104	68	14	6
79 Portugal	61	71	68	77	69	19	6	1
80 Malaysia	56	66	59	71	57	28	5	2
81 Panama	62	70	64	73	59	25	4	1
82 Uruguay	65	71	72	75	47	29	3	1
83 Mexico	58	64	61	69	84	51	9	3
84 Korea, Rep. of	55	65	58	72	64	28	6	2
85 Yugoslavia	64	66	68	73	72	28	7	2
86 Argentina	63	67	69	74	59	34	4	1
87 South Africa	45	52	48	56	124	79	22	7
88 Algeria	49	59	51	62	155	82	34	8
89 Venezuela	60	66	64	73	67	38	6	2
90 Greece	69	72	72	78	37	16	2	1
91 Israel	70	73	73	77	29	14	2	()
92 Hong Kong	64	73	71	79	28	10	2	()
93 Trinidad and Tobago	63	67	67	72	43	22	3	1
94 Singapore	63	70	68	75	28	10	1	()
95 Iran, Islamic Rep.	52	61	52	61	150	112	32	17
96 Iraq	50	58	53	62	121	74	21	7
High-income oil exporters	47 w	61 w	50 w	64 w	141 w	65 w	34 w	6 w
97 Oman	40	52	42	55	175	110	43	17
98 Libya	48	57	51	61	140	91	29	10
99 Saudi Arabia	47	60	49	64	148	61	38	4
100 Kuwait	61	69	64	74	43	22	5	1
101 United Arab Emirates	57	70	61	74	104	36	14	1
Industrial market economies	68 w	73 w	74 w	79 w	24 w	9 w	1 w	() w
102 Spain	68	74	73	80	38	10	3	()
103 Ireland	69	71	73	76	27	10	1	()
104 Italy	68	74	73	79	38	12	3	()
105 New Zealand	68	71	74	77	20	12	1	()
106 United Kingdom	68	72	74	78	20	10	1	()
107 Belgium	68	72	74	78	24	11	1	()
108 Austria	66	70	73	77	30	11	2	()
109 Netherlands	71	73	76	80	14	8	1	()
110 France	68	74	75	80	22	9	1	()
111 Japan	68	75	73	80	21	6	1	()
112 Finland	66	72	73	79	17	6	1	()
113 Germany, Fed. Rep.	67	72	73	78	26	10	1	()
114 Denmark	71	72	75	78	19	8	1	()
115 Australia	68	73	74	79	19	9	1	()
116 Sweden	72	74	76	80	13	7	1	()
117 Canada	69	72	75	80	24	9	1	()
118 Norway	71	74	76	80	17	8	1	()
119 United States	67	72	74	80	25	11	1	()
120 Switzerland	69	73	75	80	18	8	1	()
East European nonmarket economies	66 w	66 w	73 w	71 w	31 w	19 w	2 w	() w
121 Hungary	67	67	72	74	42	19	3	1
122 Poland	66	67	72	76	46	19	3	1
123 Albania	64	67	67	73	87	43	10	3
124 Bulgaria	66	68	72	74	35	17	2	1
125 Czechoslovakia	64	66	73	74	23	15	1	1
126 German Dem. Rep.	67	68	73	75	27	11	1	()
127 Romania	66	69	70	74	53	25	1	1
128 USSR	65	65	74	74	30		2	

Table 8. Urbanization

	Urban population			
	As percentage of total population		Average annual growth rate (percent)	
	1985 ^a	1984 ^a	1965-73	1973-84
Low-income economies	17 w	23 w	4.8 w	4.8 w
China and India	18 w	23 w		
Other low-income	13 w	22 w	5.2 w	5.1 w
Sub-Saharan Africa	11 w	21 w	6.2 w	6.1 w
1 Ethiopia	8	15	7.4	6.1
2 Bangladesh	6	18	6.6	7.7
3 Mal	13	19	5.4	4.5
4 Zaire	19	39	5.9	7.1
5 Burkina Faso	6	11	6.5	4.8
6 Nepal	4	7	4.3	8.4
7 Burma	21	29	4.0	4.0
8 Malawi	5	12	8.2	7.3
9 Niger	7	14	7.0	7.1
10 Tanzania	6	14	8.1	8.6
11 Burundi	2	2	1.4	3.3
12 Uganda	6	7	8.3	-0.1
13 Togo	11	23	6.4	6.5
14 Central African Rep	27	45	4.4	4.6
15 India	19	25	4.0	4.2
16 Madagascar	12	21	5.3	5.5
17 Somalia	20	33	6.4	5.4
18 Benin	11	15	4.5	5.0
19 Rwanda	3	5	6.0	6.6
20 China	18	22	3.0	2.9
21 Kenya	9	18	7.3	7.9
22 Sierra Leone	15	24	5.0	3.5
23 Mali	18	27	3.8	4.2
24 Guinea	12	27	5.0	6.2
25 Ghana	26	39	4.5	5.3
26 Sri Lanka	20	21	3.4	3.5
27 Sudan	13	21	6.3	5.5
28 Pakistan	24	29	4.3	4.4
29 Senegal	27	35	4.2	3.8
30 Afghanistan	9		3.6	
31 Bhutan	3	4	-2.1	4.6
32 Chad	9	21	6.9	6.5
33 Kampuchea, Dem	11		3.4	
34 Lao PDR	8	15	4.6	5.7
35 Mozambique	5	16	8.2	10.2
36 Viet Nam	16	20	5.5	2.3
Middle-income	36 w	49 w	4.5 w	4.1 w
Oil exporters	29 w	42 w	4.4 w	4.4 w
Oil importers	40 w	55 w	4.5 w	3.6 w
Sub-Saharan Africa	16 w	28 w	6.4 w	5.9 w
Lower middle-income	26 w	37 w	5.1 w	4.2 w
37 Mauritania	7	26	16.0	5.1
38 Liberia	22	39	5.3	6.0
39 Zambia	24	48	7.6	6.4
40 Lesotho	2	13	7.8	20.1
41 Bolivia	40	43	8.9	3.6
42 Indonesia	16	25	4.1	4.5
43 Yemen Arab Rep	5	19	9.7	8.8
44 Yemen PDR	30	37	3.4	3.5
45 Cote d'Ivoire	23	46	8.2	8.3
46 Philippines	32	39	4.0	3.7
47 Morocco	32	43	4.0	4.2
48 Honduras	26	39	5.4	5.7
49 El Salvador	39	43	3.6	3.6
50 Papua New Guinea	5	14	14.3	6.1
51 Egypt, Arab Rep	40	23	3.0	3.0
52 Nigeria	15	30	4.7	5.2
53 Zimbabwe	14	27	6.8	6.1
54 Cameroon	16	41	7.3	8.2
55 Nicaragua	43	56	4.4	5.2
56 Thailand	13	18	4.8	3.1
57 Botswana	4	20	19.0	11.3
58 Dominican Rep	35	55	5.6	4.7
59 Peru	52	68	4.7	3.6
60 Mauritius	37	56	4.6	3.4
61 Congo, People's Rep	35	56	4.4	5.4
62 Ecuador	37	47	3.9	3.9
63 Jamaica	38	53	4.3	2.7
64 Guatemata	34	41	3.8	4.1
65 Turkey	32	46	4.9	4.0

	Urban population			
	As percentage of total population		Average annual growth rate (percent)	
	1985 ^a	1984 ^a	1965-73	1973-84
66 Costa Rica	38	45	3.8	3.3
67 Paraguay	38	41	3.2	3.4
68 Tunisia	40	54	4.1	3.8
69 Colombia	54	67	4.3	2.9
70 Jordan	47	72	4.7	4.7
71 Syrian Arab Rep	40	49	4.8	4.3
72 Angola	13	24	5.9	6.0
73 Cuba	58	71	2.8	1.6
74 Korea, Dem. Rep	45	63	4.9	4.1
75 Lebanon	49		6.2	
76 Mongolia	42	55	4.6	4.1
Upper middle-income	49 w	66 w	3.8 w	4.1 w
77 Chile	72	83	2.8	2.4
78 Brazil	51	72	4.5	4.0
79 Portugal	24	31	1.2	2.5
80 Malaysia	26	31	3.3	3.6
81 Panama	44	50	4.1	3.1
82 Uruguay	81	85	0.8	0.8
83 Mexico	55	69	4.8	4.0
84 Korea, Rep of	32	64	6.5	4.8
85 Yugoslavia	31	46	3.1	2.7
86 Argentina	76	84	2.1	2.1
87 South Africa	47	56	2.6	3.7
88 Algeria	32	47	2.5	5.4
89 Venezuela	72	85	4.8	4.3
90 Greece	48	65	2.5	2.5
91 Israel	81	90	3.8	2.7
92 Hong Kong	89	93	2.1	2.8
93 Trinidad and Tobago	22	22	0.6	1.2
94 Singapore	100	100	1.8	1.3
95 Iran, Islamic Rep	37	54	5.4	5.0
96 Iraq	51	70	5.7	5.5
High-income oil exporters	36 w	70 w	9.2 w	7.7 w
97 Oman	4	27	10.8	17.8
98 Libya	29	63	8.9	7.9
99 Saudi Arabia	39	72	8.4	7.3
100 Kuwait	75	93	9.3	7.7
101 United Arab Emirates	56	79	16.7	10.4
Industrial market economies	72 w	77 w	1.8 w	1.2 w
102 Spain	61	77	2.5	2.0
103 Ireland	49	57	2.0	2.2
104 Italy	62	71	1.4	1.0
105 New Zealand	79	83	1.9	0.9
106 United Kingdom	87	92	0.7	0.2
107 Belgium	86	89	0.9	1.2
108 Austria	51	56	0.8	0.6
109 Netherlands	79	76	0.8	1.0
110 France	67	81	2.0	1.2
111 Japan	67	76	2.4	1.4
112 Finland	44	60	2.8	1.9
113 Germany, Fed. Rep	79	86	1.2	0.3
114 Denmark	77	86	1.3	0.6
115 Australia	83	86	2.6	1.5
116 Sweden	77	86	1.6	0.7
117 Canada	73	75	1.9	1.2
118 Norway	37	77	3.4	2.7
119 United States	72	74	1.6	1.3
120 Switzerland	53	60	1.9	0.8
East European nonmarket economies	52 w	64 w	2.6 w	1.8 w
121 Hungary	43	55	2.2	1.4
122 Poland	50	60	1.5	1.8
123 Albania	32	39	3.5	3.2
124 Bulgaria	46	68	3.2	2.1
125 Czechoslovakia	51	66	1.8	1.7
126 German, Dem. Rep	73	78	0.2	0.2
127 Romania	34	52	4.2	3.0
128 USSR	52	66	5.9	-3.0

Technical notes

The statistics and measures presented in the appendix tables have been chosen to give a picture of the health sector in developing countries. Data for developed countries have been added for comparative purposes. Considerable effort has been made to standardize the data; nevertheless, statistical methods, coverage, practices, and definitions differ widely. In addition, the statistical systems in many developing economies are still weak, and this affects the availability and reliability of the data. Readers are urged to take these limitations into account in interpreting the indicators, particularly when making comparisons across countries.

All growth rates shown are in constant prices and, unless otherwise noted, have been computed by using the least-squares method. The least-squares growth rate, r , is estimated by fitting a least-squares linear trend line to the logarithmic annual values of the variable in the relevant period. More specifically, the regression equation takes the form of $\log X_t = a + bt + e_t$, where this is equivalent to the logarithmic transformation of the compound growth rate equation, $X_t = X_0 (1 + r)^t$. In these equations, X_t is the variable, t is time, and $a = \log X_0$ and $b = \log (1 + r)$ are the parameters to be estimated; e_t is the error term. If b^* is the least-squares estimate of b , then the annual average growth rate, r , is obtained as $[\text{antilog}(b^*)] - 1$.

Table 1. basic indicators

The estimates of population for mid-1984 are based on data from the U.N. Population Division or World Bank sources. In many cases the data take into account the results of recent population censuses. Note that refugees not permanently settled in the country of asylum are generally considered to be part of the population of their country of origin. The data on area are from the FAO Production Yearbook, 1984.

Gross national product (GNP) measures the total domestic and foreign output claimed by residents, and is calculated without making deductions for depreciation. It comprises gross domestic product (see the note for Table 2) adjusted by net factor income from abroad. That income comprises the income residents receive from abroad for factor services (labor, investment, and interest) less similar payments made to nonresidents who contributed to the domestic economy.

The GNP per capita figures are calculated according to the World Bank Atlas method. The Bank recognizes that perfect cross-country comparability of GNP per capita estimates cannot be achieved. Beyond the classic, strictly intractable "index number problem," two obstacles stand in the way of adequate comparability. One concerns GNP numbers themselves. There are differences in the national accounting systems and in the coverage and reliability of underlying statistical information between various countries. The other relates to the conversion of GNP data, expressed in different national currencies, to a common numeraire--conventionally the U.S. dollar--to compare them across countries. The Bank's procedure for converting GNP to U.S. dollars generally uses a three-year average of the official exchange

where,

Y_t = current GNP (local currency) for year t

P_t = GNP deflator for year t

e_t = annual average exchange rate (local currency/U.S. dollars) for year t

N_t = mid-year population for year t

P_t^* = U.S. GNP deflator for year t

Because of problems associated with the availability of data and the determination of exchange rates, information on GNP per capita is not shown for most East European nonmarket economies.

Life expectancy at birth indicates the number of years a newborn infant would live if patterns of mortality prevailing for all people at the time of its birth were to stay the same throughout its life. Data are from the U.N. Population Division, supplemented by World Bank estimates.

The summary measures for GNP per capita and life expectancy in this table are weighted by population. Those for average annual rates of inflation are weighted by the share of country GDP valued in current U.S. dollars for the entire period in the particular income group.

Tables 2, 3 and 4. Central government expenditures

The data on central government finance in Tables 2, 3 and 4 are from the IMF Government Finance Statistics Yearbook, 1986, IMF data files, and World Bank country documentation. The accounts of each country are reported using the system of common definitions and classifications found in the IMF Manual on Government Finance Statistics. Due to differences in coverage of available data, the individual components of central government expenditure and current revenue shown in these tables may not be strictly comparable across all economies. The shares of total expenditure and revenue by category are calculated from national currencies.

The inadequate statistical coverage of state, provincial, and local governments has dictated the use of central government data only. This may seriously understate or distort the statistical portrayal of the allocation of resources for various purposes, especially in large countries where lower levels of government have considerable autonomy and are responsible for many social services.

It must be emphasized that the data presented, especially those for education and health, are not comparable for a number of reasons. In many economies private health and education services are substantial; in others public services represent the major component of total expenditure but may

rate. For a few countries, however, the prevailing official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions and in these cases an alternative conversion factor is used.

Recognizing that these shortcomings affect the comparability of the GNP per capita estimates, the World Bank has introduced several improvements in the estimation procedures. Through its regular review of member countries' national accounts, the World Bank systematically evaluates the GNP estimates, focusing on the coverage and concepts employed and, where appropriate, making adjustments to improve comparability. The Bank also undertakes a systematic review to assess the appropriateness of the exchange rates as conversion factors. An alternate conversion factor is used when the official exchange rate is judged to diverge by an exceptionally large margin from the rate effectively applied to foreign transactions. This applies to only a small number of countries.

In an effort to achieve greater comparability, the U.N. International Comparison Project (ICP) has developed measures of GDP using purchasing-power parities rather than exchange rates. So far the project covers 60 countries for the year 1980, but some inherent methodological issues remain unresolved.

The estimates of 1984 GNP and 1984 per capita GNP are calculated on the basis of the 1982-84 base period. With this method, the first step is to calculate the conversion factor. This is done by taking the simple arithmetic average of the actual exchange rate for 1984 and of adjusted exchange rates for 1982 and 1983. To obtain the deflated exchange rate for 1982, the actual exchange rate for 1982 is multiplied by the relative rate of inflation for the country and for the United States between 1982 and 1984. For 1983, the actual exchange rate for 1983 is multiplied by the relative rate of inflation for the country and the United States between 1983 and 1984.

This average of the actual and the deflated exchange rate is intended to smooth the impact of fluctuations in prices and exchange rates. The second step is to convert the GNP at current purchaser values and in national currencies of the year 1984 by means of the conversion factor as derived above. Then the resulting GNP in U.S. dollars is divided by the midyear population to derive the 1984 per capita GNP. The preliminary estimates of GNP per capita for 1984 are shown in this table.

The following formulas describe the procedures for computing the conversion factor for year t :

$$e_{t-2} = \frac{1}{3} \left[e_{t-2} \left(\frac{P_t}{P_{t-2}} \left| \frac{P_t^*}{P_{t-2}^*} \right. \right) + e_{t-1} \left(\frac{P_t}{P_{t-1}} \left| \frac{P_t^*}{P_{t-1}^*} \right. \right) + e_t \right]$$

and for calculating per capita GNP in U.S. dollars for year t :

$$(Y_t) = Y_t / N_t + e_{t-2}$$

where,

be financed by lower levels of government. Great caution should therefore be exercised in using the data for cross-country comparisons.

Central government expenditure comprises the expenditure by all government offices, departments, establishments, and other bodies that are agencies or instruments of the central authority of a country. It includes both current and capital (development) expenditures.

Defense comprises all expenditures, whether by defense or other departments, on the maintenance of military forces; including the purchase of military supplies and equipment, construction, recruiting, and training. Also in this category is expenditure on strengthening public services to meet wartime emergencies, on training civil defense personnel, on supporting research and development, and on funding administration of military aid program.

Education comprises expenditure on the provision, management, inspection, and support of pre-primary, primary, and secondary schools; of universities and colleges; and of vocational, technical, and other training institutions by central governments. Also included is expenditure on the general administration and regulation of the education system; on research into its objectives, organization, administration, and methods; and on such subsidiary services as transport, school meals, and medical and dental services in schools.

Health covers public expenditures on hospitals, medical and dental centers, and clinics with a major medical component; on national health and medical insurance schemes; and on family planning and preventive care. Also included is expenditure on the general administrative and regulation of relevant government departments, hospitals and clinics, health and sanitation, and national health and medical insurance schemes; and on research and development.

Housing and community amenities and social security and welfare cover (1) public expenditure on housing, such as income-related schemes, on provision and support of housing and slum clearance activities, on community development, and on sanitary services; and (2) public expenditure on compensation to the sick and temporarily disabled for loss of income; on payments to the elderly, the permanently disabled, and the unemployed; and on family, maternity, and child allowances. The second category also includes the cost of welfare services such as care of the aged, the disabled, and children, as well as the cost of general administration, regulation, and research associated with social security and welfare services.

Economic services comprise public expenditure associated with the regulation, support, and more efficient operation of business, economic development, redress of regional imbalances, and creation of employment opportunities. Research, trade promotion, geological surveys, and inspection and regulation of particular industry groups are among the activities included. The five major categories of economic services are

fuel and energy, agriculture, industry, transportation and communication, and other economic affairs and services.

Other covers expenditure on the general administration of government not included elsewhere; for a few economies it also includes amounts that could not be allocated to other components.

The summary measures for the components of central government expenditures are computed from group totals for expenditure components and central government expenditures in current dollars. Those for total expenditure as a percentage of GNP are computed from group totals for the above total expenditures in current dollars, and GNP in current dollars, respectively.

Table 5. Health-related indicators

The estimates of population per physician and nursing person are derived from World Health Organization (WHO) data. They also take into account revised estimates of population. Nursing persons include graduate, practical, assistant, and auxiliary nurses; the inclusion of auxiliary nurses allows for a better estimation of the availability of nursing care. Because definitions of nursing personnel vary--and because the data shown are for a variety of years, generally not more than two years distant from those specified--the data for these two indicators are not strictly comparable across the countries.

The daily calorie supply per capita is calculated by dividing the calorie equivalent of the food supplies in an economy by the population. Food supplies comprise domestic production, imports less exports, and changes in stocks; they exclude animal feeds, seeds for use in agriculture, and food lost in processing and distribution. The daily calorie requirement per capita refers to the calories needed to sustain a person at normal levels of activity and health, taking into account age and sex distributions, average body weights, and environmental temperatures. Because no later figures are available, 1977 calorie requirement data are used for these calculations. Both sets of estimates are from the Food and Agriculture Organization (FAO).

The summary measures in this table are country figures weighted by each country's share in the aggregate population.

Table 6. Number of persons per hospital bed

A review of the number of persons per hospital bed is given in this table. For the period 1950-1970, data for the closest available year have been used, whenever information was not available for the exact year.

A hospital bed is defined by WHO as a bed regularly maintained and staffed for the accomodation and full time care of a succession of inpatients and is situated in a ward or a part of a hospital where

continuous medical care for inpatients is provided. Cribs and bassinets used for healthy newborn infants who do not require special care are not included.

The source for the data is the World Health Statistical Annual, 1983, published by the World Health Organization.

Table 7. Life expectancy and related indicators

Life expectancy at birth is defined in the note for Table 1.

The infant mortality rate is the number of infants who die before reaching one year of age, per thousand live births in a given year. The data are from a variety of U.N. sources--"Infant Mortality: World Estimates and Projections, 1950-2025" in Population Bulletin of the United Nations (1983) and recent issues of Demographic Yearbook and Population and Vital Statistics Report--and from the World Bank.

The child death rate is the number of deaths of children aged 1-4 per thousand children in the same age group in a given year. Estimates are based on the data on infant mortality and on the relationship between the infant mortality rate and the child death rate implicit in the appropriate Coale-Demeny Model life tables; see Ansley J. Coale and Paul Demeny, Regional Model Life Tables and Stable Populations (Princeton, NJ: Princeton University Press, 1966).

The summary measures in this table are country figures weighted by each country's share in the aggregate population.

Table 8. Urbanization

The data on urban population as a percentage of total population are from U.N. Estimates and Projects of Urban, Rural and City Populations 1950-2025: The 1982 Assessment, 1985, supplemented by data from various issues of the U.N. Demographic Yearbook, and from the World Bank.

The growth rates of urban population are calculated from the World Bank's population estimates; the estimates of urban population share are calculated from the sources cited above. Data on urban agglomeration are from the U.N. Patterns of Urban and Rural Population Growth, 1980.

Because the estimates in this table are based on different national definitions of what is "urban," cross-country comparisons should be interpreted with caution.

The **summary measures** for urban population as a percentage of total population are calculated from country percentages weighted by each country's share in the aggregate population; the other **summary measures** in this table are weighted in the same fashion, using urban population.

For reasons explained in the notes to the previous tables, the data presented are not comparable across the countries.