EXTENDING COVERAGE AND BENEFITS
OF SOCIAL FINANCING SYSTEMS IN
DEVELOPING COUNTRIES
PHASE I
Review of Concepts and Literature
and Preliminary Field Work Design

Submitted to:
The Health Services Division
Office of Health, Bureau for Research and Development
Agency for International Development

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March 1993

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AID Contract No. DPE-5974-Z-00-9026-00
ABSTRACT

This paper reviews the reality and feasibility of extending coverage and benefits of social financing systems for health services in developing countries. Social financing is regarded as a popular and possibly very effective solution to the demand for pooling financial risks associated with catastrophic illness. Social insurance, however, often creates coverage, institutional, and equity problems in health care.

The research examines the social financing concept, as well as types of health insurance available, and their possible application to the health financing concerns of developing countries. Case study summaries offer information and variables concerning the what, who, how, how much, and conditional aspects of health insurance in developing countries. A chronological review of health insurance development in the United States offers additional data on financing sources, strategies, and analyses.

This HFS Major Applied Research Paper No. 3 is a stand-alone document and a companion piece to HFS Small Applied Research Paper No. 4, "Health Insurance in Practice: Fifteen Case Studies from Developing Countries." Although the two documents are related, they remain separate reports.
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EXECUTIVE SUMMARY

Because the governments of developing countries realize they cannot afford to pay for all types of health care services for their entire populations, many are exploring alternative coverage and financing systems. This paper discusses attempts to extend coverage through social financing. A companion piece, HFS Small Applied Research Paper No. 4 entitled "Health Insurance in Practice: Fifteen Case Studies from Developing Countries" (LaForgia and Griffin, 1993), complements the definitions and analysis of this document. This report constitutes the conceptualization and design work (Phase I) of the HFS project's research on social financing, and proposes Phase II field work.

Currently, information about the economic and institutional aspects of health insurance in developing countries is limited. Attempts are being made to alleviate the financial crisis through risk sharing, but more information is needed on which schemes have been successful in extending coverage and solving economic problems and which schemes have failed. This paper uses a review of economic policy and its concepts of risk-sharing, an examination of the historical development of health insurance in the United States, and case studies of health insurance programs in selected developing countries to document the potential for risk-sharing arrangements that can substitute for or complement other forms of health care financing.

Social financing is viewed as one solution to the demand for pooling financial risks associated with catastrophic illness. Social insurance, however, often creates equity problems in health care. In addition, population coverage in most developing countries is incomplete. These and other problems are frequently difficult to alleviate in developing countries because solutions demand a certain level of economic and institutional development that is often lacking. This report presents a conceptual framework for studying health insurance experiences that involves efficiency and equity.

This report also summarizes what has been learned from the evolution of health insurance in the United States over the years. There are clear examples of both the system's strengths and its efficiency problems. To date, no country, including the U.S., has determined an equitable long-term solution to health financing problems. A study of U.S. schemes does point out the need for adjustment and reform in any insurance program, however. Based on an analysis of institutions—such as finance sources and provider payment systems—used in developing countries, this report offers determinants of the success rate of particular insurance schemes of several nations.
This paper provides information on how public policies can encourage expansion of social financing. It includes objectives, research questions, and an analytical framework for each of the case studies. In addition, the summary descriptions of insurance schemes divides them into five categories by approach: community risk-sharing and rural health insurance, social security coverage extension, national insurance systems, limited catastrophic coverage, and prepayment plans.
1.0 INTRODUCTION

1.1 OVERVIEW

Developing countries have serious difficulties financing and providing health care to their populations. Many governments provide an array of public health, preventive, and curative services to their citizenry through special programs and government-owned facility networks. These latter entities often are owned and operated by health ministries and financed through general tax revenues. Financial crises resulting from economic downturns during the 1980s reduced budgetary support for many state health systems in developing countries. Insufficient spending combined with allocative and internal inefficiencies and inequitable distribution of benefits plague government services, leading to a marked deterioration in quality (World Bank, 1987). Stock-outs, queues, low productivity, and high lengths of stay are a few of the symptoms of this situation.

Increasingly, governments realize that they cannot afford to pay for all types of services for all people. In many countries, the public sector pays for a significant proportion of curative care costs. For the most part, outlays are directed to hospital-based services which tend to favor relatively well-off population groups residing close to urban hospitals while large segments of the population have little or no access to health care of any kind. Moreover, more cost-effective public health and primary care services usually receive less priority, and are the first to be sacrificed when budgets are reduced.

Faced with the prospect of decreasing or eliminating the provision of some services, policymakers are grappling with difficult decisions regarding the future role of government in financing and delivery of health services. What types of services should be subsidized? Who should receive subsidies? How can more resources be generated?

In addition to searching for alternative sources of financing to maintain current levels of service, many developing countries are exploring financing options to extend coverage to underserved populations. Health insurance has emerged, albeit slowly, as a financial mechanism with perhaps the best potential to achieve financially sustainable health care provision.

With the exception of several Latin American countries, risk-sharing schemes cover a small segment of the population in developing countries, and even a smaller proportion of low-income households. Excluding China, the World Bank estimates that approximately 15 percent of the population in developing countries participates in a health insurance scheme (World Bank, 1987). In comparison, private and government-mandated risk-sharing arrangements cover from 80 to 100 percent of the population in developed countries. Most developing countries' schemes protect relatively well-off civil servants and private sector workers residing in urban areas and participating in the formal economy. "HFS Small Applied Research Paper No. 4, Health Insurance in Practice: Fifteen Case Studies from Developing Countries" presents specific experiences in extending health insurance coverage to low-income populations in developing countries.

Population coverage of state-affiliated compulsory social insurance systems in Latin America range from six percent in the Dominican Republic to nearly 80
percent in Costa Rica (McGreevey, 1990). But social insurance schemes cover less than half the population in 12 of 20 Latin American countries. Moreover, within-country coverage may vary considerably with a heavy concentration of enrollees in large urban areas (Mesa-Lago, 1989). Private insurance covers a small but growing proportion of the population, varying between 3 and 10 percent for most countries; Brazil (20 percent), Uruguay (35 percent), and Chile (16 percent) are some exceptions. HFS Small Applied Research Paper No. 4 presents case studies on insurance schemes in the latter two countries.

The poor are usually not covered through Latin American social insurance schemes (Mesa-Lago, 1992) in part because these systems exclude participation of low-income households whose main source of income is derived from self-employment, informal sector activities, traditional farming, temporary work, and domestic employment. In several countries, a significant share of the economically active population may participate in these activities. The case studies examine initiatives in five Latin American countries that have attempted to extend social insurance coverage to low-income groups: Chile, Costa Rica, Ecuador, Mexico, and Panama.

In Asian countries, social and private insurance schemes combined cover an insignificant proportion of the population, usually less than three percent (Griffin, 1992; International Labor Office [ILO], 1990). However, insurance schemes in three countries discussed in this report, China, Korea, and the Philippines, cover 66, 47, and 38 percent of the population, respectively. In absolute numbers, one social insurance scheme in India is one of the largest in the developing world, providing protection to over 27 million people. But coverage represents only four percent of that country's population (ILO, 1990).

Insurance coverage is even less prevalent in Africa. Social insurance schemes exist in three countries: Kenya, Mali, and Zambia. But only in Kenya where 11 percent of population is covered is it an important actor in the health sector. A case study on Kenya's insurance scheme is presented in HFS Small Applied Research Paper No. 4. Private insurance schemes exist in Nigeria, but less than one percent of the population is enrolled (Vogel, 1990).

1.2 GOALS AND OBJECTIVES

Although developing countries have considerable experience with a variety of insurance or risk-sharing schemes, for the most part, attempts at extending coverage through social financing are not well-documented. Moreover, generally little is known about the economic and institutional aspects of health insurance in developing countries. As countries attempt to alleviate the financial crisis by extending risk-sharing, more information is needed on the impact of insurance on the efficiency and equity of health finance and delivery, and the institutional mechanisms used to extend coverage and handle efficiency and equity issues. Which

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1 Economic issues relate to how efficiently the introduction of health insurance structures the supply of and demand for health services and how insurance affects the equity of health coverage. Institutional aspects refer to demand and supply side measures employed by insurance schemes to deal with aforementioned economic issues. These include organizational, financial, and managerial features linking the major actors of health insurance schemes: consumers, employers, insurers, and providers. Economic and institutional characteristics of health insurance are reviewed in detail in HFS Small Applied Research Paper No. 4.
schemes have been successful (in terms of extending coverage and solving economic problems)? Which have failed? Can any lessons be gleaned from the current experience of developing countries or the past experience of developed countries?

In social financing, there are two basic concerns that are to some degree separable. First, issues related to the extension of coverage of small systems to both a larger share of the lower-income population and a broader range of health interventions. Second, the choice faced by insurance systems, particularly by social insurance schemes, between acting as direct providers or as financiers of health care delivered by others. As suggested in the previous section, the first issue is immediately important for a broad range of countries, especially the poorer ones where insurance coverage is minimal. Many have either small insurance schemes (usually facility-based or area-specific) or employer-based arrangements that can serve as a basis for extension. The second issue is a more pressing concern for countries with older, relatively large social insurance systems, but it is a generic issue that all countries with direct delivery insurance systems face at some point.

Through a review of economic concepts of risk-sharing, an examination of the historical development of health insurance in the United States, and case study analyses of health insurance schemes in developing countries, this report addresses the aforementioned questions and issues. The overall goal of this research is to understand the potential for risk-sharing arrangements to substitute for or complement other forms of health care financing. The objectives are four-fold:

1. Develop a basic framework for examining health insurance experiences that reviews the major efficiency and equity issues in the economic literature and explains how they relate to social financing policy in developing countries.

2. Review the historical development of health insurance in the United States, placing special emphasis on schemes’ economic and institutional underpinnings. Summarize the lessons learned for developing countries seeking to extend insurance coverage.

3. Analyze the institutional mechanisms constructed by a variety of insurance schemes in developing countries to facilitate extension of coverage to low-income groups or to cover a broader range of health problems, and to deal with economic issues related to health insurance. (These problems include: adverse selection, moral hazard, cost escalation, catastrophic coverage, loading costs, and equity issues. These terms are defined in HFS Small Applied Research Paper No. 4.)
4. Based on the analyses, specify the determinants of success for insurance schemes in developing countries, identify the advantages and disadvantages of a particular scheme, and recommend specific policy issues and topics for further study.

1.3 RELATION TO HFS APPLIED RESEARCH AGENDA

The HFS Applied Research Agenda (HFS, 1991a) provides a general template for major applied research projects. Each will involve three phases: Phase I, Conceptualization and Design of the Project; Phase II, Field Work and Data Collection; and Phase III, Analysis. This report represents the Phase I research and contains a proposal for Phase II field work.

Social financing is one of the five technical areas in which the project provides technical assistance and research (the others are cost recovery, private/public collaboration, resource allocation, and costing). The Applied Research Agenda identifies two major issues under social financing: (1) how public policies can encourage expansion of social financing, and (2) how social financing can be adapted as a mechanism for governments to move away from direct delivery of health services. The orientation of this research provides information and identifies knowledge gaps primarily in area (1).

1.4 AUDIENCE

The research is primarily intended for policymakers, policy analysts, and program developers interested in health finance research in developing countries. Government representatives interested in solutions to their own problems and searching for answers elsewhere may find the case studies particularly useful. Another audience consists of donor agencies, particularly USAID missions and Washington bureaus, who provide technical and financial support for policy reform initiatives. A secondary audience includes the general academic community in developing and developed countries involved in research on public policies related to health financing. They may find the comparative analysis or lessons-from-abroad approach attractive.

1.5 LIMITATIONS

Consonant with the discussion on economic concepts (see Chapter 2), the original scope of work for the case studies placed considerable emphasis on the economic issues related to health insurance (moral hazard, adverse selection, cost escalation, and administrative costs). For example, it sought to examine the effect of insurance on household health-seeking behavior and the influence of provider-payment systems on provider behavior (HFS, 1991b). In other words, a major focus was to analyze and compare how incentives that emerged from the institutional features of a variety of insurance arrangements structure the demand and supply for health services. However, since the case studies are based solely on secondary sources, the discussion of these and other economic issues varies. (An attempt was made to identify authors who had performed the original field work. But in only 5 of 15 case studies is this the case [Panama, Ecuador, Zaire, Chile, and the Dominican Republic]. Again, these authors were constrained by the availability of information.) Be that as it may, the case studies provide an in-depth examination
of the institutional features of a range of insurance arrangements. Previous to this report, little had been written on most of the schemes described here.

1.6 ORGANIZATION OF THE PAPER

The findings are presented in two papers. In this one, in addition to the introduction (Chapter 1), the study consists of six chapters. Chapter 2 provides a conceptual framework for the social financing of health services. Chapter 3 gives an overview of the institutional characteristics of health insurance schemes and defines terms. Chapter 4 traces the chronological development of health insurance arrangements in the United States to the early 1970s, by which time the basic tenets of the system were in place. Based on the U.S. experience, lessons for developing countries are discussed. Chapter 5 reviews the objectives, research questions, and analytic framework for the case studies and summarizes and synthesizes the major findings of each study. Chapter 6 presents a comparative analysis of three major social financing issues. Chapter 7 proposes a major applied research study on social financing in Niger.

HFS Small Applied Research Paper No. 4 contains 15 case studies divided into five approaches: community-based risk sharing in rural areas, social security coverage extension, national health insurance systems, limited catastrophic coverage, and public-private sector linkages through pre-payment plans. In Appendix A of that paper there are matrices of descriptive variables for each insurance scheme.
2.0 CONCEPTUAL FRAMEWORK FOR SOCIAL FINANCING OF THE CONSUMPTION OF HEALTH SERVICES

2.1 INTRODUCTION

Economic reforms in the health sector are now under way in many countries. These reforms usually include some form of cost recovery, a reorientation from the supply side to consideration of consumer demand in the design of health interventions, reappraisal of the government's role in the direct delivery of curative health services, and efforts to improve the targeting of public subsidies. An interest in risk-sharing institutions and insurance systems is a natural consequence of greater use of prices to allocate scarce resources in the health sector, greater dependence on the private sector to deliver curative services, and interest by governments in enhancing the equity-improving aspects of their own activities in the health sector. Thus a better understanding of policy issues related to social financing is a crucial next stage in research. (Social security-based health services are usually supported by a payroll tax and are compulsory. Provision of care may be through direct delivery, contracted providers, reimbursement, or other mechanisms.)

Although Latin America and Eastern Europe have many years experience with social security-provided health services (or a close approximation to that approach), basic knowledge of the economic aspects of health insurance (as opposed to the administrative, actuarial, and institutional aspects) in developing countries is extremely limited. (Health insurance refers generally to risk-sharing arrangements to finance health care. Social security is a specific type of health insurance.) The lack of financial risk-sharing devices in developing countries is in stark contrast to the extraordinary development of social risk-sharing devices, such as extended families, clans, sharing mechanisms within communities, the accumulation of community wealth in easily tradeable agricultural assets (such as livestock), and the pricing practices of traditional healers. Modern medical care imposes risks that strain these traditional institutions, and economic development tends to undermine the economic basis of clan or family-based risk-sharing institutions. Yet development, through the process of urbanization and extension of the market economy, creates much larger groups which can share financial risks impersonally, through markets.

The lack of well-developed insurance markets in most developing countries is almost a pure case of incomplete markets. We hypothesize that the problems of adverse selection, moral hazard, and high administrative costs (these terms are defined in the next section) make insurance infeasible even though the existence of traditional risk-sharing devices is an indicator of the underlying demand for insurance. We further hypothesize that governments can help to resolve the causes of incomplete markets by, among other possibilities, using their purchasing power, considerable institutional and organizational resources, exclusive ability to develop a legal and regulatory framework for markets, ability to create and underwrite re-insurance plans, ability to temporarily subsidize private activities that are not economically viable in the current environment, power to improve the operation of capital markets, and control over legal and financial resources required for communications and transportation infrastructure. While
governments have used most of these tools in other sectors, for the most part, they have responded to market problems in the health sector by providing health services or health insurance directly through a public health care delivery system.

Social financing—in the form of payroll taxes earmarked for health care or worker compensation, community health funds, employment-based insurance, or health components within social security systems—has been a politically popular method to raise large sums of money for health services in many different settings. Developing these mechanisms further can be an attractive option to cash-starved health systems in developing countries. Yet the social financing approach is better understood as a method to reduce risk rather than increase revenues earmarked for health care. Governments’ attempts to solve risk problems through this mechanism must be viewed in terms of their effects on economic efficiency and on the equity or fairness of government taxation and expenditure. Institutional development is a major ingredient in social financing mechanisms because, even though social financing has many beneficial characteristics, it has substantial infrastructure requirements and introduces distortions to the medical care market that require significant institutional infrastructure to resolve.

2.1.1 Economic Efficiency

Sharing risks improves economic efficiency, but it also introduces problems that can distort efficiency. These problems include the following:

▲ **Moral Hazard.** Insurance raises the probability that a beneficiary will seek medical care for ailments that previously would not have elicited a visit to a doctor because it reduces the price of covered services to the patient.

▲ **Adverse Selection.** Those with the highest probability of a loss are the most likely to buy insurance and those with low perceived risks are the least likely to buy insurance, so insurers will not naturally get a random draw of risks from the population.

▲ **Cost Escalation.** Insurance raises the quantity of health care demanded, which leads to upward pressure on prices and expenditures for health care. In a more dynamic sense, insurance affects the technology of medical, distort providers' incentives in supplying services, and distort prices, all of which can also push up costs.

▲ **Loading Costs.** These are the costs of the insurance system (administrative costs, sales costs, and profits), which are added to the direct cost of medical care. Loading costs rise substantially when groups cannot be assembled inexpensively to share risks, premium-payment mechanisms are not well institutionalized, and providers or clients are widely dispersed.

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2 Economic efficiency in the social financing context should be considered in a general equilibrium sense—resources could not be reallocated in any way to make people better off. Moreover, because uncertainty is a key element in risk-sharing, the meaning of economic efficiency should be even more general, to take into account different states of the world and complete markets.
These efficiency problems are virtually impossible to solve completely, but the evidence suggests that they tend to be outweighed by the benefits of insurance as attested by the prevalence of insurance despite the problems. They have received little or no systematic study in the institutional and economic environments characteristic of the medical sector in developing countries.

2.1.2 Equity

The equity issue is highly dependent on the form of social insurance. (Equity is a term that refers to the distribution of income or utility in the most general sense. In the context of public programs, it refers to the distribution across income groups of the tax burden and benefit stream from the programs.) The equity of taxes that support social financing mechanisms is of course tied to the incidence of the tax itself. Because we have little empirical information on these issues, the points below state hypotheses based on standard payroll tax iterations. (For a detailed discussion of these issues, see any public finance textbooks such as Musgrave and Musgrave [1984]. For a lengthy discussion and references on tax incidence in developing countries, see World Bank [1988] and Newbery and Stern [1987].)

1. Payroll taxes are often used, and these are usually taken by economists to fall on labor. They tend to be proportional within the range of salaries that are taxed, but due to relatively low cut-offs above which payroll taxes are not charged on salaries in many developing countries, their overall effect is usually regressive (poorer people pay a higher percentage of their incomes in these taxes than do the rich).

2. If funding of social financing systems is through the general tax base rather than through a payroll tax, in developing countries this situation also means that they are in effect funded by fairly regressive indirect taxes.

3. If governments provide tax deductions for contributions to private health insurance, these subsidies tend to be regressive to the extent that the income tax system is progressive (the tax deduction thus gives a larger percentage subsidy to people in higher tax brackets; in addition, those in higher tax brackets are more likely to have insurance and thus be eligible for the deduction). This issue would not be major concern in most developing countries, although there is much interest in tax deductibility for health insurance premiums in many developing countries, which could produce negative impacts on equity in the future. Thus, from the taxation side, the financing of social insurance systems in developing countries is hypothesized to be characterized by considerable vertical inequity but little horizontal inequity. (Vertical inequity means the poor paying a higher percentage of their income than the rich. Horizontal equity is when

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3 Incidence in this context is who effectively pays the tax. A corporate tax is paid in the first instance by the corporation that remits the tax to the government. But in fact the incidence of the tax is on the people who pay it ultimately, in this case probably the shareholders, although the distribution of the tax burden depends on price elasticities in the input and output markets. A social security contribution is nominally paid by both the employer and the employee, but the incidence is probably on the employee -- the employer will try to “shift” the tax to the employee. Success depends again on the elasticity of labor supply with respect to wages, which is generally assumed to be high over the long run, allowing the tax to be shifted to labor.
taxpayers in similar economic circumstances are treated similarly by the tax laws.)

On the benefit side, the picture is usually quite different. Benefits are typically paid according to need, without regard to income or contribution, so that benefits are either distributed proportionately across income groups or poorer groups come out ahead because they are heavier users of health benefits (see McGreevey, 1990, for examples).

When the incidence of benefits and of contributions are combined in the calculus, the equity issue becomes very sensitive to how the system is viewed. If it is viewed as a contributory system (not a tax), tax incidence can be argued to be irrelevant. The system therefore looks highly redistributive when benefits are considered. If it is viewed, however, as a government tax and expenditure program supported by a regressive payroll tax or other even more regressive means of financing, the progressivity of the benefits is blunted. Moreover, the tax is only supporting benefits for members rather than the general public. If benefit incidence is looked at from a countrywide perspective, it is likely that the most needy are not eligible, so both tax and benefits can be viewed as regressive. Several possible solutions to these equity problems are:

4. If the contribution is actuarially determined and voluntary, one could argue that it is not a tax. The fairness of such systems can be enhanced simply by extending coverage to a broader base of the population—an actuarially sound system will distribute benefits to the needy from the healthy.

5. If the contribution is actuarially unrelated to benefits and involuntary, one could argue that it is a tax. The fairness of such a system can be enhanced by improving the fairness of the tax system and expanding coverage of the population by the benefits.

6. The vast middle between these two extremes can be improved by moving contributions as close as possible to an actuarially "fair" premium, preserving choice, expanding coverage to all of the population, and improving the equity of the underlying tax system.

To repeat, while these principles are derived from the standard treatment of such systems in the public finance literature, most of the issues are really empirical in nature. We have little or no evidence on most of the issues for developing countries. What little is available comes primarily from Latin America and is summarized in McGreevey (1990).

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4 In this case, contributions might be mandated to eliminate adverse selection, but the person paying can choose among insurers who compete for the individual's premium by enhancing benefits -- thus for a given premium, the benefits are actuarially and competitively determined.
2.2 ECONOMIC LITERATURE AND POLICY

In a recent paper, Akin (1989) reviewed the theoretical literature on insurance as it relates to developing country issues and made several salient points:

▲ **Efficiency and Catastrophic Insurance.** For economic efficiency objectives to be attained, health insurance should be directed toward the results of expensive, low-probability events, not toward inexpensive, high-probability events.

▲ **Demand for Insurance in Developing Countries.** Credit markets in developing countries are highly distorted and imperfect, and that fact alone gives rise to a need for insurance. Individuals normally cannot borrow to pay for health care based on the human capital returns to purchasing it, and for this reason are unable to spread risk over their own lifetimes. However, even if credit markets for health care were readily available, efficiency could be improved through the pooling of risks across people (as opposed to sharing risks across time for an individual household, by saving or borrowing). In applying these ideas to developing countries, poorly functioning credit and financial markets give rise to potential demand for health insurance, but pose great difficulties in supplying insurance.

▲ **Efficiency Problems.** Although insurance can improve efficiency in the health sector, it also creates the market problems previously introduced: moral hazard; adverse selection; reduced incentives for clients, insurers, and providers to control costs; and the addition of the cost of administering the insurance plan to the cost of providing health care. Each of these problems creates tradeoffs that must be made in designing insurance plans: how much of the risk the insurance plan should bear and how much should be left to the client, how to assemble groups to be covered by insurance that include both high and low-risk clients, how to control the costs of providing health care under insurance when it creates incentives for uncontrolled spending, and how to minimize the administrative cost of the insurance system. (These issues are analyzed by Atkinson and Hills, 1988; Atkinson, 1989; Beasley et al., 1985a, 1985b; Pauly, 1974, 1986; Rothschild and Stiglitz, 1976; and Wilson, 1977.)

2.2.1 Factors Constraining Expansion of Insurance in Developing Countries

Griffin (1987, 1989) argues that the availability of no-charge government services, shortages of manpower, adverse selection, and high administrative costs are probably the four most important reasons that insurance has been slow to emerge as a financing mechanism in developing countries, with the exception, of course, of several Latin American countries. However, swift change is taking place in each of these areas:

▲ **Competition From No-Charge Services.** Governments are beginning to charge fees for medical services. This trend is likely to accelerate as they gain experience in generating revenues in the health sector and start to
better understand their costs and who actually benefits from untargeted government subsidies in the health sector.

**Manpower Shortages.** Manpower shortages have been alleviated in all but the poorest countries of Africa. For example, in low-income countries, physicians per capita nearly doubled and nursing personnel per capita nearly tripled between 1965 and 1984. The same trend has taken place in middle-income countries (World Bank, 1989). In India, where insurance systems are poorly developed, population per physician (2,520 in 1984) is nearly on par with Brazil in 1965 (2,500) (World Bank, 1989). Insurance is estimated to cover less than five percent of the Indian population (Griffin, 1992), but coverage in Brazil by 1965 was probably close to 50 percent (Zschock, 1986). Coverage of social security insurance in Brazil today is nominally at 100 percent, with a population-to-physician ratio of 1,080 (in 1984) (McGreevey, 1990). Thus, shortages of personnel are not the impediment they once were to expanding insurance coverage in many countries.

**Adverse Selection:** Poorly Developed Markets and Dispersed Populations. Adverse selection is eliminated when insured groups are randomly selected in terms of health conditions. The extension of markets into rural areas and the movement of people into cities and formal sector employment has reduced the difficulty of assembling such groups for insurance coverage. Between 1965 and 1987, urban population rose from 17 to 30 percent of total population in low-income countries and from 42 to 57 percent in middle-income countries. The percent of GDP originating in agriculture fell from 43 to 31 percent in low-income countries between 1965 and 1984; in middle-income countries, it had already fallen to 20 percent in 1965 (all figures from World Bank, 1989). In addition to the movement in population and change in the structure of production, the development of rural credit programs, agricultural extension programs, and irrigation projects have created rural institutional structures that may lend themselves to the organization of insurance groups. Moreover, we now have the experience of Brazil, China, Ecuador, and Mexico, which with varying degrees of success have extended their insurance systems into rural areas over the last two decades (McGreevey, 1990). In China, for example, with per capita income of $330, over 60 percent of the population is covered by some type of insurance system (Griffin, 1992).

**Administrative Costs:** Payment and Reimbursement Technology. As it has become easier to assemble large groups for insurance, the technology of handling the financial demands created by insurance funds has also become less expensive. The greater availability of personal computers, combined with reductions in communication and transportation costs, may mean that the administrative costs of supplying insurance in developing countries may have fallen to the point that it has become a feasible financing option for much larger segments of the population than even a decade ago. In addition, most of the changes discussed in point 3 also reduce the administrative cost of insurance systems. In particular, increasing the number of households with a regular flow of cash income that can be tapped for insurance premiums reduces considerably the cost of collection and maintaining a risk pool over a period of time long enough to plan for and finance an insurance fund.
2.3 CONCLUSION

This conceptual framework has attempted to distill from a vast literature the basic economic principles applicable to the development of social financing mechanisms in developing countries. Because it is an economic perspective, it has approached the issues from an efficiency and equity standpoint. It has applied these principles in a general way to assess the potential of improving and expanding social financing mechanisms in developing countries, as well as to identify factors that may inhibit their development. Because of the lack of evidence on most of the issues brought up in this section, the guiding principles must be treated as hypotheses awaiting much more empirical evidence on the relative importance of each. Some of the evidence is provided in this document.

To summarize the conceptual framework, we conclude with the following points:

1. Social financing supplies a solution to a problem that has driven much of human organization throughout history—the demand for pooling the risks of catastrophic losses.

2. In the process, health insurance creates a number of efficiency problems, including moral hazard, adverse selection, loading costs, and incentives for cost escalations. Solving these problems is hypothesized to be more difficult in a developing country setting because all solutions require considerable economic and institutional development. However, aggregate data was cited that suggests much development has taken place that could increase the feasibility of solving the problems.

3. Coverage of the population by social insurance tends to be incomplete in a developing country setting. In addition, taxation systems in developing countries tend to be regressive relative to those in more industrialized countries. The result is the almost certain creation of equity problems when developing social financing systems for health care. All such problems have solutions, but they require considerable attention.
3.0 INSTITUTIONAL CHARACTERISTICS OF HEALTH INSURANCE SCHEMES: OVERVIEW AND DEFINITION OF TERMS

3.1 INTRODUCTION

Developing countries display a diversity of forms of health insurance. This report, and in particular the case studies presented in Applied Research Paper No. 4, describe the variety of forms and functions of health insurance that have emerged in developing countries. Understanding and comparing how health insurance schemes function requires some familiarity with an assortment of operational concepts and characteristics related to their organization and management. Taken together, these elements constitute the institutional features of health insurance. Categorically, these features reveal the what and how of insurance schemes in terms of business and social objectives, ownership, sources of income, population coverage, subscriber compensation, relations with providers, provider payment, and interaction with government. These elements vary considerably across countries, and as in the case of developed countries, are often the subject of considerable controversy.

The purpose of this chapter is to orient the reader to the basic institutional features that constitute health insurance schemes. This chapter reviews generic characteristics of health insurance arrangements and defines the terminology used to describe them. The focus is on those concepts, features, and terms used in the case studies presented in Small Applied Research Paper No. 4. Before describing and defining these elements, it is important to understand their origin.

Insurance systems that have emerged in every country result from the peculiarities of health care markets and from government policy. Markets consist of sets of actors, producers, and consumers, who establish relationships or linkages to exchange commodities. In the health insurance market, exchanges take place between three sets of actors (or transactors): consumers of health care (insured patients), providers or producers of health services (doctors and hospitals), and third-party payers or financing institutions that supply insurance (insurers). Third-party payers may be considered intermediate actors who modify the transactions between consumers and providers. In most cases, the government is an important actor because of its regulatory authority. It also may participate directly in the market as a third-party payer or as a provider. (Evans [1983] reviews the problems of health care markets: lack of independence between producers and consumers, insurance and government authorities that seek to regulate behaviors of consumers, and self-government by providers.) A number of social insurance schemes in developing countries, particularly in Latin America, combine the insurer and provider functions. These systems own and operate facilities that provide health services to enrollees.

Exhibit 3-1 shows the linkage patterns among the above-mentioned actors and illustrates three types of market transactions. Resources are exchanged for the direct provision of health care (consumer - provider), for the protection against the risk of financial loss due to illness (consumer - third-party payer or insurer), and for the provision of services to insured persons (third-party payers - providers). Transactions occur at three levels: between individuals (e.g., a patient and a physician), between individuals and institutions (e.g., a patient and
a hospital or a physician and an insurer), and between institutions (e.g., a hospital and an insurer).

For the most part, the institutional features of health insurance schemes constitute mechanisms that structure the transactions among the actors displayed in Exhibit 3-1. Many also seek to lessen the effects of the economic problems inherent in health insurance. (As described in Chapter 2, these include moral hazard, adverse selection, and cost escalation.) These features can include: financing mechanisms, methods of service provision, provider payment systems, measures that control the consumption of services, and cost-sharing methods. The form of insurance, type of insurance institutions, ownership, and benefit design are additional institutional characteristics that also affect the flow of resources and services in the health care market.

Consumers receive benefits (health care) through insurance coverage. At the same time, they are the principal source of finance for health services directing money to third-party payers through financing mechanisms (e.g., taxes and premiums), and to providers through out-of-pocket payments. As mentioned, third-party payers consist of institutions that finance or manage the financing of health services and assume risk associated with health care, supplying insurance coverage to consumers. Insurers also transact with providers through a variety of payment mechanisms, defined later. In return, providers deliver care (benefits) to consumers.

How these patterns of transactions and linkages are integrated vary greatly across countries. The advantages and disadvantages of the different configurations, particularly in terms of their consequences on costs and coverage, are the subject of considerable debate and research in developed countries (Glaser, 1991; Reinhardt, 1989; Evans, 1983). In developing countries, only recently have researchers turned to examining the institutional features of emerging insurance schemes, and to a lesser extent, to gauging their impact on efficiency and equity of the health sector (Vogel, 1990; Kutzin and Barum, 1992; Mesa-Lago, 1992).

The remainder of this chapter defines specific institutional features of health insurance programs. It focuses on those items and terms that are used in the case studies. The discussion begins with a brief look at the nature of risk-sharing and draws on the following titles: Glaser (1991), Davis et al. (1990), Sutton and Sorbo (1986), Mehr et al. (1985), Berliner (1982), Luft (1981), and Greene (1968).
3.2 INSURANCE

Insurance is the opposite of gambling. The latter creates the risk of financial loss, while the former eliminates or reduces it. Risk relates to the uncertainty of incurring financial loss. It is the uncertainty of occurrence of an event which creates financial loss (e.g., a risk) that makes insurance desirable. Insurers do not offer insurance for risks that are certain to occur (within a defined time period), while individuals do not purchase insurance for risks that are certain not to occur.

How does insurance handle risk? If a risk is to be insurable, it must meet a number of criteria (even though, in practice, some risks are insured that do not meet all the criteria for insurability).

1. A large number of people are exposed to the same risk to facilitate calculating the probability of occurrence for the group.

2. The loss must be easily confirmable, or not easy to contrive (e.g., the loss indeed occurred).

3. The occurrence of loss for any individual is random.

4. Low probability that loss will occur to a large number of people at the same time.

5. The loss itself is large enough to cause financial hardship to the individual but is economically feasible to the insurer.

Operationally, insurance is based on sharing financial loss among a large number of persons. Insurers predict the proportion of persons (within a group) who will suffer a loss, convert this into a probability of occurrence for each individual, calculate the total value of these predicted losses, and then apply the probability to the total value to calculate the individual contribution or share (premium). In other words, the insurer spreads or distributes the risk among people with more or less similar characteristics or exposure to risk. The total premium itself represents the value of claims (service provision, benefits, etc.), administrative expenses, reserve requirements to protect against higher than expected occurrence, and profit (for the private sector).
3.3 TYPES OF HEALTH INSURANCE AND SOURCES OF PAYMENT

Health insurance pays for the costs of medical and hospital services provided to an individual to treat an illness or injury. The illness or injury represents an uncertain event, while the medical and hospital expenses relate to financial loss. Health insurance covers individuals and groups for all or part of these expenses. In the case studies, health insurance takes on two general forms: voluntary private and compulsory government.

- **Private**: Private insurance is based on voluntary individual or group purchase of their own risk protection. The insurance policy covers risks pertaining to the policyholder only, whether a group or individual. Coverage often depends on an individual's or group's risk rating (see criteria). In general, those individuals or groups that are deemed to have higher probability of loss because of age or pre-existing conditions may pay more, receive less benefits, or be denied coverage (this practice is known as risk-rating). The ill share the risk of financial loss with the healthy, and depending on the rating system, risk can be shared between the wealthy and the poor.

Individuals or groups covered by insurance are referred to as members, subscribers, or enrollees. (These terms are used interchangeably throughout the case studies.) The members are entitled to a specific set of benefits as stipulated in the policy. Benefits vary by policy. The insurer pays the provider for services rendered, or may reimburse the enrollee for medical expenses. The insurers can be for-profit or non-profit entities. Individuals usually are enrolled through employment-based groups, but policies can be purchased individually.

- **Government**: State health insurance refers to compulsory or statutory social insurance systems, popularly known as social security health insurance. Social insurance is based on the principle of social solidarity. In terms of health insurance, the concept refers to defining medical care as a social rather than individual risk. (In a somewhat extreme but often-used definition, social solidarity refers to the right of all citizens to [health care] coverage regardless of income, age, or residence.) The concept "implies the cross-subsidization from individuals with higher resources to those who can contribute less and from those with a lower incidence of illness to those who require care more frequently" (Ron et al., 1990:3).

Social insurance systems result from public policy. They involve the pooling of risks across a large segment of a population and transferring them to a government organization, usually a parastatal. Legislation determines who is covered, what the benefits are, the amount of contribution (usually a payroll tax). Unlike traditional voluntary insurance, benefit levels, eligibility requirements, and contributions are not determined by methods of risk assessment. Rather, they are prescribed by law. Affiliation is mandatory for eligible groups. The costs are borne by the contributors, but government subsidies can be significant. Service providers are required to accept all affiliates.
3.4 SOURCES OF FINANCE

There are three principal financing mechanisms for health insurance: premiums, payroll taxes, and subsidies.

▲ **Premiums**: Under private insurance, enrollees pay premiums to insurers in return for coverage. Premium rates may be based on average costs of claims of the covered population or vary by socio-demographic characteristics such as age, sex, and occupational activity. Under employer-sponsored group plans, all or part of the employees' premiums may be paid by the employer. In some countries, employer contributions are tax deductible as a business expense. Nor are they considered taxable income for employees.

▲ **Payroll Taxes**: In most developing countries, social insurance systems are financed through payroll taxes (shared by worker and employer) and cover salaried workers, civil servants, and other occupation groups. Financing for health insurance is part of the social security taxation system. In addition to health insurance, these systems provide cash benefits for old age, death, disability, and work accidents. A fund is established for each contingency (e.g., health, old age, disability, etc.). A percentage of each employee's wage is directed to each fund. The percent contribution is shared between employee and employer.

▲ **Subsidies**: Social insurance systems may receive a government subsidy derived from general tax revenues. In some cases, these subsidies may be mandated by law. In others, they are meant to cover chronic deficits.

3.5 TYPES OF INSURERS

Most insurers can be divided into two broad classes which relate to type of ownership and purpose: private and public. Private insurers can be further divided into proprietary and cooperative arrangements. Several types of ownership forms appear in the case studies.

▲ **Proprietary**: Owned and operated by stockholders or small numbers of investors for the purpose of gaining a profit, providing lower-cost insurance to the owners, or selling services (medical or administrative) to others.

▲ **Mutual Societies**: Non-profit organizations owned and operated by members whose main purpose is to serve as a mechanism to finance and provide services to the owner-members.

▲ **Provider Cooperatives**: Owned and operated by providers by physicians to provide (medical) services to providers and divide earnings. For the non-profit variety, channelling patients to owner-members is the principal objective.

▲ **Health Maintenance Organizations (HMOs)**: This arrangement can be a subset of a producer cooperative or a proprietary insurer. The HMOs described in the case studies are generally owned and operated by physician
groups. These organizations serve as both insurer and provider. In exchange for pre-paid premia, they offer comprehensive health services to enrollees. Service provision can be organized tightly (direct method), loosely (indirect method), or in combination (see following text). Their distinguishing characteristic is their effort to control costs through the use of a variety of utilization management techniques, provider payment systems, rating methods, and practice settings.

- **Government**: Statutory institutions organized to administer social security and other social insurance schemes. Can be a direct government dependency or parastatal agency (the latter is most common). Most parastatals are associated with a government agency (usually the health or labor ministry).

### 3.6 METHODS OF SERVICE PROVISION

Three broad patterns of service delivery are evident in the case studies regardless of insurer type:

- **Direct**: The insurer owns and operates the facilities where all covered services are provided. All or most personnel are salaried.

- **Indirect**: The insurer contracts services from physicians and facilities owned and operated by public agencies, non-profit organizations, and private firms.

- **Combined**: The insurer owns and operates some facilities in which health personnel are employed, but also contracts services to other providers. This method also can entail contracting physician services in insurer-owned facilities.

### 3.7 PROVIDER PAYMENT SYSTEMS

These models refer to how providers, physicians and hospitals are paid for services rendered to affiliates. It is important to note that there is little correspondence among type of provider payment system, method of service provision, and type of insurer. In other words, an insurer (such as an HMO) may employ direct and indirect service patterns and use two or more physician payment systems (described later).

**Doctors:**

- **Fee-for-Service**: Specific payment for each type or item of service actually provided to members corresponding to a fee schedule. Usually paid on a retrospective basis.

- **Flat rate**: Reimbursement of a fixed fee regardless of the service.

- **Salary**: Insurer employs the personnel providing services to members. Usually these employees work in insured-owned and operated facilities.
Direct Capitation: A fixed, per-member prepayment paid to a physician for a defined package of usually primary services during a specific time period. The amount covers all of the physician's services rendered to each member regardless of the value of those services or whether that member receives services or not.

Hospitals:

Budgetary: Usually corresponds to direct provider method where the insurer owns and operates the facilities where services are provided to members.

Per Diem: A single charge for per patient-day regardless of the actual cost of the service.

Discounted Charge: Discounted payments for specific institutional services (usually volume-based).

Organizations:

Indirect Capitation: A fixed prepaid amount paid by an insurer to an organization in exchange for providing comprehensive services to members enrolled with that organization. The organization can be a medical group, HMO, or hospital. The capitated organization is responsible for procuring and paying for all services, physician and hospital, stipulated in the benefit package. (This should be distinguished from a premium which is a payment that an individual or employer pays to an insurer to cover the cost of a defined package of services. A premium paid to an HMO by an individual or employer is in effect a capitation payment, that is, the HMO is capitated to provide all or most medical and hospital services.)

3.8 COST SHARING

These are fees charged to insured patients. (User fees usually refer to point-of-service payments by non-insured persons. Usually they do not cover the full cost of care.) These fees can take various forms:

▲ Deductible: The amount paid by a member before insurer starts paying.

▲ Copayment: An out-of-pocket charge paid by the member at point of service. The services and corresponding amount of payment is stipulated in the insurance contract.

▲ Co-insurance: The percentage of a charge that a member pays out-of-pocket to complete or supplement the insurer's coverage. Generally the term refers to the sum of deductibles and copayments.
3.9 COST–CONTAINMENT MEASURES

Cost control can take many forms. In a sense, each of these insurer types, service provision methods, and provider payment systems are cost-containment measures. Although a discussion of the advantages and disadvantages of these methods is beyond the scope of this report, a few examples are instructive.

From the demand side, cost-sharing methods are employed in part to control the amount of services consumed by members. A large annual deductible can reduce the insurers' exposure to high cost due to excessive consumption of emergency and outpatient services. From the supply side, a limited definition of services covered by the scheme is a common cost-containment method. Some schemes described in the case studies restrict benefits to primary care services, and some physician payment systems seek to control the amount of services provided. This is especially the case for ambulatory care. For example, under capitation, a primary care physician is provided an incentive to attract patients but, at the same time, to control the amount and cost of services provided. On the other hand, without external controls, salaried physicians may have little incentive to control costs. Moreover, salaried physicians who are protected through strong unions and collective bargaining may have little incentive to provide quality of care. Fee-for-service reimbursement may stimulate physicians to maximize their income through providing more and perhaps unnecessary services. Further, both direct and indirect service provision methods are often used in the name of cost control. For example, HMOs that employ the direct service pattern, known as staff model HMOs, use gatekeepers, case management, and other managed care methods to reduce hospital admissions, lengths of stay, and discretionary surgery. (Gatekeepers control referrals beyond primary care services, they also are referred to as prior authorization.) However, social security direct delivery systems in many countries are known for over-utilization by affiliates, in part because of lack of utilization and other controls.

Throughout the case studies, certain methods of inpatient utilization control are mentioned. This section concludes with an outline of common methods:

- Measures that verify the medical need for a hospital admission (prior authorization, second opinion surgery, preadmission review);
- Measures that limit length of stay (concurrent review, evaluation of patients while in hospital, usually by insurers' medical supervisors);
- Measures that direct service provision to less costly settings (outpatient surgery); and
- Measures that profile physician practice patterns, usually in terms of prescriptions, diagnostic test indications, and referrals (utilization review).
3.10 OTHER OPERATIONAL DEFINITIONS

**Access**: The ability of an individual to obtain timely and financially acceptable health services.

**Actuarial Techniques**: Statistical procedures, usually based on age, sex, occupational activity, and health service utilization, that are used to calculate risks and premiums.

**Age Limits**: Policy-stipulated ages below or above which an insurer will not provide coverage.

**Benefits**: The amount payable by an insurer to an enrollee and/or a provider for services rendered. Sometimes refers to the services covered under an insurance scheme.

**Beneficiary**: Enrollees or members of insurance scheme from which they derive benefits.

**Catastrophic Limit**: The maximum amount of out-of-pocket expenses during a specified time period, usually one year, that is the responsibility of the insured person.

**Claim**: The demand on an insurer by an enrollee or a provider for the payment of benefits covered by the insurance contract.

**Coverage**: The total number of persons enrolled in one or more insurance schemes.

**Dependency Ratio**: The ratio of the number of persons of working age, usually ages 15 to 64, to persons 14 years and younger and 65 years and older.

**Disability Insurance**: Income replacement for persons unable to work because of short or long-term incapacity.

**Exclusions**: Fees, services, and other items that are not covered by the insurance scheme.

**Eligibility**: Regulations that govern whether a person can receive insurance coverage. Requirement can refer to age, conditions, occupational activity, income, etc.

**Experience**: Generally refers to the ratio between of the value of premiums and the value of claims.

**Incentives**: Direct or indirect monetary arrangements which motivate efficiency of use and provision of services.

**Indemnity**: Predetermined benefits made in the event of a covered loss that typically are paid to insured persons in reimbursement for medical expenses.
**Mandatory Contribution**: In the context of social insurance schemes, refers to the legally mandated payroll tax paid and shared by employees and their employers.

**Payment Ceilings**: A predetermined amount above which the insurer stops payment and enrollee is responsible for all subsequent expenses (during a specified period).

**Premium**: The fee an insured person pays on a regular basis for membership in an insurance plan.

**Reinsurance**: The transfer of a proportion of a risk to another insurer.

**Reimbursement**: The payment by an insurer to providers for services rendered to enrollees; or the payment to enrollees for services received by providers.

**Reserves**: A fund that represents estimated future liabilities of an insurer, set up as a contingency against future losses during a specified time period.

**Social Security**: A statutory, tax-based social protection systems that protects against two or more of the following social risks: work-related accidents and diseases, illness, old age, and disability.

**Underwriting**: The process whereby an insurer assesses risk.

**Waiting period**: The length of time an insured person must wait after enrollment before he or she can receive one or more benefits.

**Workingman's Compensation**: A type of insurance coverage that covers the risk of employment-related injury or death.
4.0 THE EVOLUTION OF U.S. HEALTH COVERAGE AND ITS PROBLEMS: KEY PATTERNS WERE SET BY THE 1970s5

4.1 INTRODUCTION

The evolution of America's largely private health financing and delivery holds lessons for today's developing countries, especially those seeking to expand the role of the private sector. This quick review of the U.S. experience describes the choices made in the formative years of health financing policy and indicates some of the results, notably in extent of coverage and cost of care.

The presentation proceeds chronologically, highlighting major developments, decade by decade. It sketches how social financing policy toward health services evolved to the maturation of coverage policy, as viewed from today's perspectives of the early 1990s. This history provides a detailed presentation as far as the early 1970s, by which time basic patterns were set and the policy issues became dominated by the central problems of cost escalation and lack of insurance coverage for many, problems for which the groundwork was laid during the earlier period. Cost escalation due to the interaction of insurance with technological capabilities and rising expectations is not yet a preoccupation in developing countries, but it will be. At that point it will make sense to revisit the recent U.S. experience in more detail. Issues covered include the extent and nature of private coverage, the public role, and salient concerns about access to care, cost of care, and its quality. Key data are presented in tables, by decade. The presentation focuses on the key elements of care covered by insurance plans, namely, hospital and physician services. Mainly omitted from insurance coverage and from this discussion are personal health services from dentists and nursing homes, as well as public health services from governments. Classically, public health includes communicable disease control and care for particularized populations, (e.g., mental patients [Jain, 1982; Wilson and Neuhauser, 1982]).

4.2 BACKGROUND TO THE EARLY 20TH CENTURY

Health coverage originated in the relatively recent past. Historically, insurance theory—and commercial insurers—thought "health insurance" an oxymoron.6 The reason was that sickness, or more precisely, use of medical services, was not believed to be an "insurable risk." That is, the risk of medical utilization is not an infrequent event, occurring randomly or at least outside the control of the insured, and of known and limited expense that is high relative to insureds' resources (Mehr, 1986; Wilson & Neuhauser, 1982). To the contrary, use of medical services is in large measure discretionary, and spending is hard to predict or control. Private insurers as early as 1850 were willing to write "health insurance," but normally only for loss of income from disability, not for actual

5 This paper was funded in part by the Health Financing and Sustainability project of the Agency for International Development, in part by The Urban Institute. This support is gratefully acknowledged, but the authors remain solely responsible for the content of this paper. The authors thank Caitlin Carroll for very capable research assistance and Eileen Nowacki for her data input.

6 The broadest term is health "coverage," which includes all forms of third-party payment for medical services, public and private; most people mean coverage when they say "insurance." At times, "insurance" needs to be understood as only private coverage, sometimes only the "indemnity" style of coverage. Insurance law often does not consider "Blues plan" coverage as "health insurance," on which more detail is provided later.
physician or hospital bills. In general, the commercial insurance industry before the late 1930s had very little interest in attempting to develop coverage for medical expenses, although social insurance for health services was well established in Europe (Starr, 1982).

Given traditional insurers' reluctance to underwrite health care services as insurable events, it is not surprising that the first examples of health insurance arose as prepaid medical services, not as insurance. Histories of prepaid group health coverage often note that 19th-century lumbering and mining camps often had their own doctors (Schwartz, 1965; Wilson & Neuhauser, 1982), a workplace focus that endures in patterns of health coverage to this day. One presumes that in such early plans traumatic injury was the main health need.

Moreover, it is not surprising that more general coverage for health care was a low priority because of the limited capabilities of medicine (Thomas, 1979, 1983; Marti-Ibanez, 1962). Hospitals in the 19th century were mainly charity wards where the poor went to die. Medical practice was totally uncontrolled, and competing theories of disease and treatment flourished. The concept of modern hospitals (on the Johns Hopkins model) only evolved near the turn of the century (Rosenberg, 1987; Stevens, 1989). By the 1920s, today's pattern of community hospitals was well established, with not-for-profits dominant. The notion of agreed professional minimum standards for licensure was contemporaneous with the establishment of local, state, and national medical associations, as well as the enactment of state licensure requirements (Starr, 1982). Curative drugs were virtually unknown prior to the late 1920s (Shorter, 1987). Illness, injury, and early death were more something to be suffered than helped by a doctor, much less insured against (Thomas, 1983). Further, expenses for available care were not large relative to typical incomes.

The average day in a hospital cost only a few dollars, and physicians did not charge—or earn—large amounts. (Statistics on average expense per hospital day start in 1946, when the figure was $5.21 [Bureau of the Census, 1975, p. 81].) In 1929, for instance, the average net income for non-salaried physicians was some $5,200 (Bureau of the Census, 175). There were far fewer medical providers in those less capable and less funded days as well: some 126 physicians per 100,000 population and three community hospital beds per 1,000 population (Exhibit 4-1). Physicians' average annual earnings, like others', dropped during the Depression.

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7 The earliest policies were evidently sold in London (HIAA, 1991, especially Chapter 1). Such policies (often called "accident and health" insurance) generally covered only disability or work loss due to ill health, often at first limited to specific diseases (e.g., typhus, typhoid, scarlet fever, smallpox). Here, objective evidence was available about diagnosis, the fact of loss, and clear standards including expenditure limits could be set in advance. By the turn of the 20th century, many U.S. accident insurers and life insurers offered loss-of-income policies. Later, coverage developed to provide specific dollar amounts, scheduled in advance, for specific accidental losses, often for "death or dismemberment" (see also Wilson and Neuhauser, 1982).

8 Indeed, it has been said that it was not until after World War I that the average patient seeing the average physician for the average condition had a better than average chance of benefitting from the encounter.

9 The $5,200 was about 70 percent more than a college teacher, and about three times the average annual earnings of employees. These and the immediately following statistics come from Bureau of the Census (1975), passim. The year 1929 is the first for many time series of relevant data. Anecdotally, physicians' reported recollections from this era abound in expressions of low financial expectations. See Thomas (1979, 1983) on the low earnings (and complaints) even of 1907-1927 Harvard Medical School graduates surveyed in 1937.
to a low of $2,900 in 1933; the physician/population ratio also held steady. Health care spending grew only slightly in real terms (Bureau of the Census, 1975). In short, before health insurance, the medical economy behaved much like the rest of the economy and was small relative to the whole. All together, the nation spent only about 3.5 percent of gross national product (GNP) on health care (Exhibit 4-2).

In fact, the conditions of the U.S. medical market before World War II, a mere 50 years ago, in many respects resemble the conditions of medical markets in low-income developing economies today, though the role of public provision (at least theoretically) is larger than it was in the U.S. Middle-income countries have advanced well beyond this situation both in technological and economic terms, although the U.S. was probably wealthier than they are today. The rest of the U.S. story, as the narrative proceeds, shows what may well lie in store for developing countries. It is important to address the problems created by incremental change in health financing, facing up to the efficiency and equity problems created by increasing the prevalence of voluntary third-party financing.

4.3 DEVELOPMENTS IN COVERAGE, LATE 1920s AND 1930s

The first prepaid, community-based health services plan is often credited to Elk City, Oklahoma in 1929 (Shadid, 1939, 1956). This, like many other early plans, was a forerunner of prepaid group practice, now known as Health Maintenance Organizations, or HMOs. Other such plans through the mid-1930s included Ross-Loos in California, Group Health of Puget Sound in Washington, Group Health Association in D.C., and the Health Insurance Plan in New York (Greenberg and Rodburg, 1971; Saward and Greenlick, 1972; Starr, 1982). Classically, such plans not only accepted pre-set premiums but also had their own salaried physicians and owned their own hospitals or contracted with a limited number of outside institutions. A competing model also arose in 1929, when some school teachers in Dallas contracted with Baylor University Hospital to provide room, board, and specified ancillary services for a monthly fee set in advance. In the late 1920s to mid-1930s, in the Pacific Northwest especially, other hospitals also began to offer prepaid coverage for specified care at their hospital. They followed the Dallas example largely to bolster their own occupancy rates during the Depression. But all these developments were merely prologue.
The 1930s saw the true beginnings of health insurance as we now know it, with the birth of the "Blues." The earlier forms of prepaid care at one or a few institutions quickly gave way to broad-based hospital prepayment in the form of Blue Cross plans organized on a geographic basis, as products of the hospital associations, typically at the state level (Starr, 1982; Wilson and Neuhauser, 1982; Law, 1976). (It has been argued that this collective action was in restraint of trade, but a federal antitrust case failed [see Goldberg and Greenberg, 1977], arguing that the case should have gone the other way.) The first Blues-style hospital plan started in 1934 with special New York enabling legislation, and by 1938, 1.4 million Americans had joined 38 Blue Cross plans (Anderson, 1975; Law, 1976). Very quickly, physicians followed suit, organizing their own Blue Shield plans, first for in-hospital surgical care, then for medical services as well. Basic Blues principles included voluntary, private financing (as against social insurance); participation by all or nearly all providers in an area; free choice among these providers by enrollees; fee-for-service payment to providers; and salaried sales people (rather than commissioned agents) as well as not-for-profit
operations of plans. In general, Blues plans had unique service areas, not competing with one another, and had strong ties to hospital associations and medical societies.

In today's terms, Blues policies offered only very basic coverage with quite limited benefits. Of course, medicine had yet to involve elaborate and expensive care, and premiums were also low. (The New York plan, which has become Empire Blue Cross and Blue Shield, promoted itself as "hospital care at three cents a day" [Rothman, 1991].) Premiums were set on an average, or "community-rated" basis, normally with two separate rates for business groups and individuals (Starr, 1982; Law, 1976). This rating method seems to have derived both from communal ideology and from the practical problem of lack of actuarial data and techniques for setting rates based on expected usage. It also implicitly recognized the problem of adverse selection. In general, the Blues plans were publicly perceived to have a more social role than "ordinary" insurance. They were created as not-for-profit entities, and states chartered them as "hospital (and medical) service corporations," rather than as insurance companies.\footnote{Insurance regulation, like that of medical care, has always been the province of state governments under the U.S. system of federalism. State insurance regulation began in the aftermath of the Civil War, and by the turn of the century, the National Association of Insurance Commissioners—consisting of all states' chief regulators—had been created (Patterson, 1927). Just after World War II, the U.S. Supreme Court ruled that insurance was a matter of interstate commerce and hence subject to federal jurisdiction, but the Congress immediately re-established the preeminent state role through the McCarran-Ferguson Act (Dobbyn, 1981).}

Blues plans were typically exempted from state premium taxes applied to insurers, were often required to offer coverage more broadly, and were subject to different regulatory rules and processes (Eilers, 1963). In hindsight, it is clear that the Blues also reflected the economic and professional self-interest of medical providers.\footnote{Blues' boards of trustees, for example, were dominated by medical providers until well into the 1970s, when public and private pressures for consumer/payer representation effected changes. Competition also forced Blues plans to act in payers' interests as well. Analysis of "traditional" Blues practice suggests that they used their regulatory and price advantages to sell more generous policies -- in both providers' and insured patients' interests, though not necessarily in payers' interest (Frech & Ginsburg 1978; Frech 1988).}

Only after the Blues proved the market viable did ordinary insurers begin to write coverage for medical bills (Starr, 1982). These "commercial" companies were mainly life insurers. The Blues' direct contracts with "participating" hospitals and physicians enabled them to write "service" coverage under which the plans made payments directly to providers. Commercials, in contrast, provided "indemnity"
coverage to reimburse the insured for payments they had already made to providers;\(^{12}\) providers might or might not agree to bill the insurer on the insured's behalf.\(^{13}\)

These early Blues and commercial plans set the pattern for health coverage that still dominates U.S. health financing, and sowed the seeds of future problems: patients were to have "free choice of provider" (able to use almost any provider, not limited to contracted doctors or hospitals), with relatively low out-of-pocket cost at time of service. Providers were to receive retroactive fee-for-service payment (not an advance salary, capitation, or contracted amount) for all services they deemed "medically necessary." And risk pooling and financing was to come from insurers acting as "third parties," removed both from patients (first parties) and from providers (second) (Glaser, 1970). The associated fragmentation of buying power among third-party payers that began at this early stage has often been blamed for reducing consumer resistance to ever-higher utilization and prices, as well as giving providers considerable ability to charge different payers different prices, thus extracting the maximum amount of revenue out of buyers in the market. (For classic expositions on the role of insurance in the economy of health care, see Fuchs [1974] and Pauly [1974].) There appears to have been virtually no appreciation for how expensive this mode of operations would ultimately prove to be, especially not at first, when coverage reached few people, and payment levels were low. An exception was the continuation of contractual prepayment for care in the early precursors of HMOs, including Kaiser's workers at the Grand Coulee Dam project in 1938 (Starr, 1982).

The main concern during this era was creating, then expanding health coverage as a means of enhancing patients' access to care (and, incidentally, medical providers' access to pooled patient funds). There was talk of National Health Insurance, notably from the 1932 report from the Committee on the Costs of Medical Care, a private, blue-ribbon national panel (Starr, 1982).\(^{14}\) But this was lost in concerns about economic recovery generally and was moreover specifically preempted by the invention of private coverage and its subsequent explosive growth. There was to be no major public role in health coverage for nearly three more decades (Marmor, Feder and Holahan, 1981).

By 1940, 12 million Americans had some private coverage, most of whom enrolled just at decade's end, although this was still only nine percent of the population (Exhibit 4-3). Some six million belonged to Blues plans, 3.7 million had conventional insurance, and 2.3 million got coverage from other sources, largely HMOs (HIAA, 1991). The medical care price index was holding quite stable during the

\(^{12}\) "Indemnity" is used in the sense of a payment amount fixed in advance and bearing no necessary relation to the provider's bill, not in its legal sense of "indemnification," meaning full reimbursement that makes someone "whole."

\(^{13}\) Traditional Blue Shield coverage typically called on physicians to accept the plan's benefit level as payment in full for subscribers below a certain income level. Blue Cross plans often came to require that hospitals accept their payment of "reasonable cost," sometimes with a discount, as payment in full. Blue Cross participation agreements also often required that if the plan's funds proved unable to meet all obligations in a year, all providers would accept a pro rate withholding from their fees -- a provision far predating similar "withholds" among Independent Practice Associations (IPAs) and Preferred Provider Organizations (PPOs).

\(^{14}\) There had earlier been interest in compulsory sickness coverage raised by pre-World-War I progressives, but this never went far, either, lost in the waning of Progressive influence, anti-German fervor of the war, and medical society opposition (Hirschfield, 1970; Stevens, 1971; Starr, 1982). In 1917, the American Medical Association supported NHI, but quickly reversed its position (Fuchs, 1991).
late 1930s. (See Bureau of the Census (1975) at 74-75 [price indices were created only for 1935 and subsequent years].) Overall, real health spending grew only 1.4 percent during 1929-40, while the Depression kept real GNP flat, so health rose slightly as a share of GNP, up half a point to 4 percent in 1940 (Exhibit 4-2). Meanwhile, supply of physicians and hospital beds rose somewhat (Exhibit 4-1).

4.4 THE 1940s

Private health insurance took a great leap forward in the 1940s, especially during World War II (Starr, 1982; HIAA, 1991; Sapolsky, 1991). The economy moved back to full employment, manufacturing surged, and urbanization accelerated. It became common for workers, especially through unions, to seek health coverage as a fringe benefit of employment. Benefits were deemed not subject to wartime wage and price controls, they offered unions the chance to demonstrate the value of collective bargaining, and group purchase provided insurers better risk pooling and protection against adverse selection than did individual purchase—along with lower costs of sales, collection of premiums, and other administrative overhead (Bovbjerg, 1986). The U.S. Supreme Court specifically ruled that health benefits were subject to collective bargaining in 1948 (Sapolsky, 1991). Unions took the lead in seeking good coverage for workers.
EXHIBIT 4-3  
POPULATION COVERED BY PRIVATE HEALTH INSURANCE AND PERCENTAGE INSURED, BY DECADE  
(in millions of people covered)

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<tr>
<td>Blues</td>
<td>6.0</td>
<td>38.8</td>
<td>58.1</td>
<td>75.1</td>
<td>86.7</td>
<td>72.5</td>
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<tr>
<td>Commercial</td>
<td>3.7</td>
<td>37.0</td>
<td>69.2</td>
<td>89.7</td>
<td>105.5</td>
<td>91.7</td>
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<tr>
<td>Insurance</td>
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<td></td>
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<tr>
<td>Other Private **</td>
<td>2.3</td>
<td>4.4</td>
<td>6.0</td>
<td>8.1</td>
<td>33.2</td>
<td>77.1</td>
</tr>
<tr>
<td><strong>Net Total</strong></td>
<td>12.0</td>
<td>76.6</td>
<td>122.5</td>
<td>158.8</td>
<td>187.4</td>
<td>185.6</td>
</tr>
<tr>
<td><strong>Private</strong>*</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Total Pop’n</td>
<td>132.5</td>
<td>152.3</td>
<td>180.7</td>
<td>205.1</td>
<td>227.7</td>
<td>249.9</td>
</tr>
<tr>
<td>Percentage</td>
<td>9.06</td>
<td>50.30</td>
<td>67.79</td>
<td>77.43</td>
<td>82.30</td>
<td>74.27</td>
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Sources: HIAA (19911, Department of Commerce (1992).  
Notes: 1989 data. “Other” includes mainly HMOs prior to the 1980s; subsequently, an increasing share constitutes self-insured or -administered plans (in 1980, HMOs enrolled 9.1 M, in 1990, 33.1 M [Dept. Commerce, 1992]). For 1989, Exhibit omits hospital indemnity coverage previously covered; about 15 million people had such coverage. ** “Net Total Private” eliminates duplication of multiple coverage from different sources.

Perhaps most importantly, such fringe benefits of employment were considered taxable neither to employer nor employee, an executive decision later codified by the Internal Revenue Code of 1954 (Craig, 1992). Hence, through workplace insurance, health services could be prepaid with pre-tax dollars. This tax subsidy became an ever more valuable benefit as tax levels rose, especially for upper-income taxpayers. The increasing extent of the tax “bite” was continually driven home to all workers by the wartime income-tax innovation of automatic withholding, even as the cost of insurance was hidden by having most or all paid, at least nominally, by the employer (thus avoiding the wage controls). (See Pauly (1986) for a review of the economic effects of the tax treatment of health insurance premiums.) Thus, employment-group purchase of health coverage enjoys many advantages over individual purchases (Bovbjerg, 1986). Some are “natural” business advantages, such as the economies of group purchasing, a population healthy enough to work, selection of the beneficiary on a basis exogenous as possible to the insured event, and the predictability of a large aggregation of risks. Some, like the tax subsidy, are socially conferred advantages-over not only individual purchase but also non-employment groups (e.g., associations, bank customers, cooperatives). There are also disadvantages, however, notably the non-portability of individuals’ coverage when changing jobs or being laid off and the loss of broader pooling potential.
Public assistance for consumers during this decade consisted mainly of the tax subsidy for voluntary purchase of private coverage. Almost no public entity sought to provide "third party" style coverage for care generally, although some states and localities had welfare-style payment arrangements with non-public hospitals to care for indigent patients. Direct health services were supplied by the federal government only to identifiably "federal" populations—the armed services, veterans, and merchant marines all had dedicated hospitals, and the Indian Health Service operated on reservations (see Wilson & Neuhauser, 1982). It is interesting to note that federal coverage of these populations was achieved predominantly through direct service delivery operations rather than through the financing of purchases from private providers.

Public policy in this era also began to subsidize the supply side more heavily (Wilson and Neuhauser, 1982): immediately after the war, the federal Hill-Burton Act made available grants to expand and modernize hospital capacity, which had suffered during the war. Soon thereafter, federal grants were made available for medical education as well. Federal policy greatly expanded support for basic research, with the post-war enlargement of the National Institutes of Health (Shorter, 1987). States and localities also ran some hospitals and medical clinics. State and local institutions often specialized in tuberculosis or mental health care, but some also provided general acute care, notably cities' public general hospitals (Jain, 1982). Most hospital care, however, remained the province of not-for-profit community hospitals. The federal Food and Drug Administration continued to regulate new drugs, but there was no general federal role in quality of medical care.

The proportion of the population with insurance grew very rapidly throughout the 1940s. By 1950, fully 76.6 million Americans had private coverage, just over 50 percent of the population and more than six times the number only a decade before (Exhibit 4-3). The Blues plans maintained their 50 percent market share, but HMOs' share fell drastically, as their membership had "only" doubled, while the commercial insurance population had grown ten-fold. Group plans accounted for more than half the covered population, although direct purchases by individuals and families lagged only slightly behind (HIAA, 1991). (The group/individual-family ratio was 22/17; the split is not available for Blues or HMOs.) The ratios of physicians and hospital beds per population remained virtually flat (Exhibit 4-1). Health spending rose 4 percent in real terms during the decade, but real GNP also climbed 3 percent, so health's share of GNP again rose only half a point, to 4.5 percent (Exhibit 4-2).

4.5 THE 1950s

The 1950s were a decade of more and better private employment group coverage. Private insurance dominated the decade, although governments also played a larger role and even seriously debated National Health Insurance (Marmor, Feder and Holahan, 1981). Private insurance group underwriting and actuarial methods advanced rapidly, as did sales techniques. The market continued to expand, though less dramatically than in the 1940s, given the higher beginning base of coverage.
By 1960, the group/individual-family ratio cited had climbed to 54/22. Groups have the advantages cited, and can generally worry less about the "insurability" of workers, who are after all healthy enough to work. Individual sales call for medical underwriting, which adds to expense, as a small percentage of the population is considered medically "uninsurable" because of a pre-existing history of health problems. For an excellent conceptual overview of underwriting (in the AIDS context), see Hammond & Shapiro (1986).

The sophistication of experience rating improved continuously over the following decades, resulting by the 1990s in extreme fragmentation of risk pools (Congressional Research Service 1988). While on the one hand experience rating is an actuarially sound practice -- higher risk groups should pay higher premiums -- in an economic sense it greatly limits the value of insurance to the beneficiary because successful experience rating limits the ability of individuals to pool their risks with others.

(Exhibit 4-3). Group coverage expanded far more than individual. Blues plans lost market share, down to 47 percent. HMOs and other arrangements also lost market share (though gaining enrollees); the big winners were commercial companies.

Not coincidentally, another big winner was the growing practice of "experience rating" at least a portion of a group's premiums (Congressional Research Service, 1988). That is, what a group paid depended increasingly on its own members' health spending, rather than on the broader experience of the general "community" buying similar policies. Thus, experience rates are influenced by the underlying health of employees and dependents, the generosity of the plan, and the prevailing levels of medical style of practice and prices in the group's geographic area(s). Moreover, commercial insurers also offered far more choices of policy coverage than the more standardized Blues' policies. Employers and unions are said to have been attracted by policy provisions as well as rates tailored to their own situations. Commercials were disadvantaged, however, by having to pay hospitals "charges," hospital-set prices per day and per ancillary service, as well as by premium taxes. The Blues' plans generally benefitted from lower premium taxes and often from paying hospitals' "costs," sometimes even a discount below full average accounting cost in recognition of broad coverage, speedy payment, lack of bad debt, low processing costs, high market share, and bargaining power (Frech and Ginsburg, 1978; Fox, Rosner, and Stevens, 1991). (Costs are typically below charges, as the latter include allowances for bad debt, charity care, and an operating margin.)

Coverage also improved, from both the insureds' and the providers' perspectives, as ever more plans offered not only basic but also an additional layer of "major medical" coverage. The latter feature broader coverage of services, especially on the outpatient side, and higher overall limits on dollars payable. (Instead of a basic plan plus a major medical one to pay when the basic benefits were exhausted [often after a "corridor" of insured's responsibility], many companies offered "comprehensive" plans integrating both into a single policy.) Both Blues plans and commercials provided such broader and deeper policy coverage.

The Truman administration made National Health Insurance a policy objective early in the decade. Although serious legislative debate occurred, no plan ever came close to enactment (Marmor, Feder, and Holahan, 1981; Starr 1982). The federal role continued to focus on subsidizing infrastructure (hospital beds, doctors, and medical research) as well as demand for both insurance and medical services (mainly through tax policy).

The federal government also acted to help promote new state-level third-party coverage on welfare principles. The Kerr-Mills Act encouraged states to help the
very needy, namely the aged, blind, and disabled, with limited assistance, by reimbursing providers (Wilson and Neuhauser, 1982). This same pattern was followed in the following decade with a much-expanded Medicaid program. Medical quality was not publicly addressed, except by states through traditional provider licensure, and the FDA on new drugs. Nor was "cost containment" yet much of an issue.

The 1950s brought health coverage to much of the middle class. By 1960, over two-thirds of Americans had private coverage (Exhibit 4-3). But price increases were becoming a problem, especially for those without coverage. The index of total medical care prices rose by 47 percent during 1950-60, a period of general price stability marked by a 23 percent rise in the Consumer Price Index (CPI) (Bureau of the Census, 1975). This rise in prices coincided with the institutionalization of third-party payments described up to this point. Overall, national health expenditures rose eight-tenths of a point to 5.3 percent of GNP in 1960, as the rise in real health spending more than doubled the rise in real GNP (Exhibit 4-2). The supply of providers also began to climb more rapidly (Exhibit 4-1).

In hindsight, this decade's very success in massively increasing the extent and depth of coverage to the insurable population can be seen to have nourished the seedlings of trouble sown much earlier—namely, difficult-to-control expenditures and selective coverage of the population. The price of medical care changed drastically beginning in the 1950s. The average hospital expense/day was only $7.98 in 1950, but rose to $16.46 in 1960, and $53.95 in 1970 (Bureau of Census, 1975, page 81).

The important point is not mere inflation in medical markets, but the beginning in the early 1950s of a sustained increase in the relative price of medical care as insurance became more prevalent and the capabilities of medicine continued to advance. As one early-seventies commentator noted, the price of a hospital room in the early 1950s was about that of a good hotel. (An average day in a community hospital cost $16 in 1950, $103 in 1972, a rise of over 500 percent in nominal terms; patients' out-of-pocket costs rose from $10/day to $18.50, or $10.65 in real terms [Feldstein, 1973].) By the end of the decade, hospital prices had left hotel prices behind; in the U.S. of the 1990s, only luxury suites can match hospital prices. In developing countries today, the relative prices of medical services tend to reflect the earlier experience of the United States, prior to the vast run-up in prices and spending under third-party insurance.

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17 U.S. hospitals today of course do far more for patients than their 1950 counterparts. It is not unusual for today's international traveler to find that the best private hospitals in developing countries provide complete room and board for considerably less than the better hotels. There is anecdotal evidence of private hospital operators' informally pursuing this market.

18 Anecdotally, one may note that in Manila, Philippines, a visit to a doctor's office costs about double the price of a Big Mac, fries, and soft drink at McDonald's. In the countryside, office visits are less than half that price. In Uganda, where there is one doctor for approximately every 20,000 people, an out-patient visit to a private doctor costs about as much as lunch in a local restaurant. Like the comparison to the pre-war U.S., comparisons to the less-insured developing world today help bring home the sheer magnitude of the rise in medical prices and spending.
4.6 THE 1960s

The 1960s were marked by further incremental expansion of coverage, with most attention paid to expansion of government-subsidized care for the "uninsurables" (the poor, the frail, the aged) through the invention of federal medical entitlement programs. The theory was that beneficiaries would be entitled to medical service. An emerging reality was that providers were entitled to collect what they wanted from governments. The decade began with newly activist Presidential leadership desirous of National Health Insurance (NHI) (Marmor, Feder, and Holahan, 1981). The Kennedy/Johnson policy preference was for NHI run by the federal government. Strong opposition came from medical interest groups, spearheaded by the American Medical Association, as well as from fiscal conservatives. Opponents objected on the grounds that "socialized medicine" would ultimately allow federal bureaucrats to control clinical decisions in medicine (as well as medical incomes). The opposition prevented any systemwide change (Starr, 1982).

Instead, the compromise reached was to expand coverage incrementally to two categories of people least well covered by employment-based private coverage (Wilson & Neuhauser, 1982): Federal Medicare was enacted to provide conventional third-party coverage for the aged (those within the Social Security system and past retirement age) and the disabled (unable to work). The state-federal Medicaid program was created for the "deserving" poor (basically those unable to work due to age, blindness, or disability). (For an introduction to Medicare, Iglehart [1992b]; Feingold [1966] and Marmor and Marmor [1973] analyze the politics and economics of enactment. For Medicaid, see Stevens [1971], Bovbjerg and Holahan [1982]. For details of the programs' current structure and operations, see Commerce Clearing House [1993].) Medicaid built on the Kerr-Mills precedent of state discretion operating within a federal set of rules and with federal "financial participation," reimbursement for state spending on a sliding scale from 50 percent to 83 percent, with more for poorer states. Even so, states varied greatly in their willingness to cover the poor. By decade's end, all states except Alaska and Arizona had decided to provide Medicaid benefits, but few opted for the maximum available coverage and federal aid.

Private workplace group coverage continued to grow, but individually purchased coverage dwindled in importance. Hence, almost all coverage in the U.S. came to be defined by the end of the 1960s in relation to the workplace–private group coverage for most of the under-65 workers and potentially their families as well, Medicare and Medicaid for those not normally in the work force. But Medicare and Medicaid had great successes in expanding coverage (Exhibit 4-4), coming on top of private coverage for over two-thirds of Americans (Exhibit 4-3). By decade's end, each program was helping about 20 million people a year (Exhibit 4-4), with some overlap of people covered under both.
However, in part stimulated by the upsurge in insured demand, medical costs "skyrocketed," in the overused cliche. The expansion of government's role in financing services brought the issue of cost escalation to the fore. Originally, the federal law had called for states to expand Medicaid over time to cover all of the poor. By decade's end, this provision was repealed as unattainably expensive (Commerce Clearing House, 1993). Moreover, concern over the economics of health care delivery in the late 1960s began to lead to the recognition of "health economics" and "health policy" as subdisciplines, as well as better collection of data like those used in this report.

Medicare essentially adapted Blues' reimbursement principles to public payment; the prime objective was to give beneficiaries access to private providers (Marmor and Marmor, 1973; Sapolsky, 1991). The program was created as a third party outside medical transactions, responsible for paying hospitals their "reasonable costs" retrospectively and physicians their actual submitted bills or "customary, prevailing, and reasonable" (CPR) fees. "Cost reimbursement" was thought to be a saving relative to paying charges (technically, the rule was lower of cost or charges). Moreover, the terminology of "cost reimbursement" implied that costs are somehow exogenous, outside the control of hospitals and not affected by the payment mechanism. Such costs were simply to be covered in the fashion of a traveller's being reimbursed for taxi fares incurred. (See Marmor, Feder, and Holahan [1981], especially the chapters on provider payment. With regard to the analogy of reimbursed transportation, note that even the choice of walking, taking a taxi, or renting a car is in fact affected by the reimbursement rules, as all business travelers know.) In practice, the incentives of this system clearly rewarded high-spending institutions with higher payments and penalized lower-spending hospitals with lower payments. It has been noted that the rule in practice meant, "If we can audit it, we'll pay it." This proved, understandably, not to be a recipe for promoting cost-conscious tradeoffs between value and cost of services. Medicaid gave states somewhat more leeway in what they paid providers (Stevens, 1971).

Likewise, physicians' CPR payment was thought to be an economy relative to having to pay a fixed charge high enough to attract better physicians, and tying Medicare payment to apparent market or prevailing rates also seemed in a way to be prudent (Feingold, 1966; Glaser, 1970). However, in practice, it too rewarded high-charging physicians and penalized lower charging ones. A doctor's actual charge was the one specifically submitted for a diagnostic or procedure code. "Customary" meant the median of the prior accounting year's actual charges for a physician. And "prevailing" meant the 90th percentile of customary charges for

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Sources: Department of Commerce (1992), Committee on Ways and Means (1989).
Notes: * Medicare enrollees are those with hospital and/or medical coverage; they overlap with private coverage. ** Medicaid figures are for recipients of care, not enrollees. Medicaid recipients overlap with Medicare enrollees. Not shown are other sources of public coverage. *** 1972 data.
physicians of the same specialty in the same geographic area. "Reasonableness" was a fudge factor allowing special consideration for unusual circumstances. Keeping track of the millions of charges needed to create the physician "profiles" to use CPR payment probably would not have been possible but for the development of computers. The Blues plans were moving to similar payment rules ("usual, customary, and reasonable," or UCR) for their private business. But neither CPR nor UCR actually built upon market discipline, for "actual" fees were not required to be at levels that any self-paying person actually was willing to pay. The system relied entirely upon fees submitted to Medicare or the Blues, irrespective of patient willingness to pay. Medicare was driven by the early 1970s to adopt a "physician index" which limited the allowed annual growth of prevailing fees and imposed some constraint on self-inflating billing practices.

This decade of greatly subsidized demand, coupled with the chosen payment mechanism, also saw continued hospital expansion and the entry of many new physicians (Exhibit 4-1), manpower policy having simultaneously responded to a perceived "physician shortage" (Wilson and Neuhauser, 1982). Prices rose even faster, the average hospital expense/day, for example, rising from $16.46 in 1960 to $53.95 in 1970 (Bureau of Census, 1975). Overall, during the 1960s, real health spending grew at 6.5 percent a year, far above real annual growth in GNP of 2.5 percent, so health's share of GNP jumped two full points during the decade to 7.3 percent in 1970 (Exhibit 4-2). There was no major intervention to control costs, although some states began to implement a non-fiscal, regulatory/planning approach to controlling capital investment, which was blamed for growing hospital expense. These efforts were intended to "rationalize" the "cottage industry" of health care delivery, with voluntary planning efforts built on the model of prior Hill-Burton planning, drawing also on emerging notions of community planning (Wilson and Neuhauser, 1982). The first relatively "serious" health planning emerged at the state level at decade's end, when New York enacted a regulatory model for controlling the growth in hospital beds and other capital investment called "certificate of need." The idea was that a built bed was likely to be an occupied bed, given open-ended and generous third-party reimbursement. Hence regulators should only approve investments that could be demonstrated to be "needed." But there was no tie to payment rates, only a "building permit" approach to certificate of need (Bovbjerg, 1979), which ultimately proved ineffective (Sloan, Blumstein, and Perrin, 1988).

There was little quality regulation, none of services per se. Hospitals participating in Medicare and Medicaid had to meet national standards (set by the Joint Commission on Accreditation of Hospitals, a private accrediting body run by medical organizations), with a theoretical state role for oversight as well. Physicians had to be state licensed, but not certified or otherwise credentialed. Payment was in no way related to quality of performance, though a provider could in theory be dropped from participation (Commerce Clearing House, 1993).

By the end of the 1960s, the basic patterns of U.S. health care delivery and financing coverage were set: private delivery of most health care by hospitals and physicians; private, voluntary provision of insurance to workers by their employers and to those too old or unable to work by public plans modelled on the private ones and offering free choice of provider; retrospective reimbursement of provider-set charges or costs on a fee-for-service basis; separate financing of each plan based on its own experience, with no built-in cost controls.
4.7 SUBSEQUENT DEVELOPMENTS

The same patterns of incremental changes in coverage and cost escalation have continued since the 1960s (Iglehart, 1992a). First, with regard to coverage, during the 1970s, this incremental approach to adding covered groups was dubbed a "building block" strategy by proponents who favored employer and personal responsibility for private coverage and public protection for non-workers. Those who objected to a mosaic of varying coverage, including a substantial block of non-coverage, are more apt to term it a "crazy quilt" (Bovbjerg, 1989-90). The high-water mark of population coverage came in the late 1970s. Only Medicare continued to enroll more people, driven by the increase in the elderly population as well as some expansions in program coverage (Iglehart, 1992b; Committee on Ways and Means, 1989). Medicaid, however, declined somewhat after the mid-1970s, until in the late 1980s additional requirements were put on the states to move toward covering all children in poverty (Exhibit 4-4). (See Bovbjerg and Holahan [1982] on state economizing, and Committee on Ways and Means [1989] on new mandates.)

The total proportion of people covered by private insurance actually declined in the 1980s (Exhibit 4-3), for a variety of reasons (Bovbjerg and Kopit, 1986). Costs of private coverage soared along with medical spending, making lower-income workers and small businesses less able to afford it, much less the unemployed. Tax subsidy gives no help to the unemployed, very little to the self-employed or low-income workers (Craig, 1992). More people are covered under self-funded plans that do not share risk with the larger community (Jensen and Gabel, 1988), raising the price to those more in need of medical care; and insurers increasingly have competed based on their ability to select relatively good risks for coverage (Bovbjerg, 1981; Bovbjerg and Curtis, 1987). Many people cannot obtain affordable coverage, especially in the individual and small-group markets; others fear losing their coverage if they lose jobs or change employers, especially for "pre-existing" medical conditions previously treated (Congressional Research Service, 1988; Freudenheim, 1991). The private, voluntary system seems to have reached its natural limit in expanding coverage; in the interests of cost containment, private employers and public plans alike are also cutting back on previously open-ended benefits (Iglehart, 1992c). Absent mandates for coverage, as imposed in other developed countries (OECD, 1992), little growth in coverage can be expected.

Second, with regard to medical spending, the 1960s' pattern of health care's outgrowing the rest of the economy by a factor of two has also persisted to this day (Exhibit 4-2). The share of GNP going to health spending surpassed 12 percent as of 1990 and is rapidly headed still higher, expected to reach 18 percent by the year 2000, of which an ever-larger share will be funded by the public sector. (According to Congressional Budget Office [1992] projections, health will total 18 percent of GDP in 2000; for the U.S., the figure would be almost the same expressed as shares of GNP.) The U.S. has tried a melange of different strategies for cost containment, both regulatory and market-oriented in nature. But all have been incremental (e.g., "managed care" for particular plans, administered prospective pricing for Medicare hospital payments) rather than system-wide (e.g., budgetary or price and utilization limits), and none has been notably successful by international standards (OECD, 1992). Other developed countries all faced what they considered unacceptable cost increases in the 1970s and 1980s, but almost all implemented social limits on further growth (Schieber, Poullier and Greenwald, 1991).
The result is that the U.S. spends far more on health care than any other developed nation. In the 1960s, U.S. health care spending was not out of line with other developed countries, given its higher level of national income (Exhibit 4-5). Since the 1960s, U.S. spending as a share of GDP has increased rapidly, whereas other countries' growth has been more controlled.

The U.S. private voluntary system lacks the ability to address both these problems of expanding coverage and curtailing spending increases systemwide. This lack is not unintentional; it is built into the policy choices made during the formative years of expanding private and public coverage. The U.S. is now, once again, trying to formulate systemwide approaches in the early months of the new Clinton administration. Developing countries seeking incremental expansions to private coverage would do well to address these issues earlier in the course of policy development.
EXHIBIT 4-5
U.S. SPENDING IN INTERNATIONAL CONTEXT

<table>
<thead>
<tr>
<th>YEAR</th>
<th>USA</th>
<th>Canada</th>
<th>Germany</th>
<th>Holland</th>
<th>France</th>
<th>U.K.</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>5.3</td>
<td>5.5</td>
<td>4.7</td>
<td>3.9</td>
<td>4.2</td>
<td>3.9</td>
<td>3.6</td>
</tr>
<tr>
<td>1965</td>
<td>5.9</td>
<td>6</td>
<td>5.1</td>
<td>4.4</td>
<td>5.2</td>
<td>4.1</td>
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</tr>
<tr>
<td>1970</td>
<td>7.4</td>
<td>7.1</td>
<td>5.9</td>
<td>6</td>
<td>5.8</td>
<td>4.5</td>
<td>6.1</td>
</tr>
<tr>
<td>1975</td>
<td>8.4</td>
<td>7.2</td>
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<td>7.6</td>
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</tr>
<tr>
<td>1985</td>
<td>10.7</td>
<td>8.5</td>
<td>8.7</td>
<td>8</td>
<td>8.5</td>
<td>5.8</td>
<td>6.3</td>
</tr>
<tr>
<td>1990</td>
<td>12.4</td>
<td>9</td>
<td>8.1</td>
<td>8.1</td>
<td>8.9</td>
<td>6.1</td>
<td>6.2</td>
</tr>
</tbody>
</table>

Average Annual Growth Rate (in %)

<table>
<thead>
<tr>
<th>Period</th>
<th>USA</th>
<th>Canada</th>
<th>Germany</th>
<th>Holland</th>
<th>France</th>
<th>U.K.</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960-1965</td>
<td>2.33</td>
<td>1.81</td>
<td>1.72</td>
<td>2.37</td>
<td>4.24</td>
<td>1.13</td>
<td>5.87</td>
</tr>
<tr>
<td>1965-1970</td>
<td>4.46</td>
<td>3.42</td>
<td>2.81</td>
<td>6.44</td>
<td>2.22</td>
<td>1.75</td>
<td>4.58</td>
</tr>
<tr>
<td>1970-1975</td>
<td>2.64</td>
<td>0.4</td>
<td>6.7</td>
<td>4.84</td>
<td>3.62</td>
<td>4</td>
<td>1.27</td>
</tr>
<tr>
<td>1975-1980</td>
<td>2.08</td>
<td>0.46</td>
<td>0.68</td>
<td>1.18</td>
<td>1.68</td>
<td>0.58</td>
<td>1.03</td>
</tr>
<tr>
<td>1980-1985</td>
<td>2.75</td>
<td>2.92</td>
<td>0.62</td>
<td>-0.08</td>
<td>2.27</td>
<td>0.71</td>
<td>-1.6</td>
</tr>
<tr>
<td>1985-1990</td>
<td>2.98</td>
<td>1.12</td>
<td>-1.44</td>
<td>0.21</td>
<td>0.94</td>
<td>0.88</td>
<td>-0.13</td>
</tr>
</tbody>
</table>

Source: OECD Health Data File 1991 (see Scheiber, Poullier & Greenwald, 1992)

4.8 CONCLUSION

The development of health insurance in the United States resembles approaches now being taken or considered in many developing countries. The case studies elsewhere in this report provide many details; a few examples here illustrate some of the similarities. For example, hospitals in Zaire's health zones have, given their need to raise their own revenues, begun to form prepaid plans to improve their balance sheets, with some success. The government provides medical benefits to its own employees that equal or exceed its expenditures on health care for the rest of the population. Employers are required to pay the health care costs of their employees. These features—hospitals seeking innovative ways to avoid bad debts and a government primarily concerned with health care for specific employment groups—are early characteristics of the U.S. system.
In Kenya and the Philippines, nationally sponsored insurance systems that cover only part of the population pay only for inpatient, catastrophic care on a reimbursement basis. Both systems have created incentives for doctors to construct small, economically inefficient, and medically unsophisticated hospitals so that they can receive payments through the insurance system. Both systems are considering extending coverage to outpatient services (the addition of Blue Shield to Blue Cross and the development of "major medical" plans in the U.S. context) to reduce incentives to build hospital beds and admit patients who could be treated on an outpatient basis. Yet they know that doing so on an uncontrolled, subsidized fee-for-service basis will lead to even faster escalating costs than is currently the case, based on the U.S. experience. South Korea in the late 1980s extended coverage of national health insurance to the whole population to solve the inequitable coverage problem—at considerable administrative cost in the countryside. This policy change solved the coverage problem, but it caused medical care prices to escalate instantly because the modern approach to coverage was grafted on to a fee-for-service reimbursement mechanism. The arcane language of reimbursement, invented in the U.S., is now entering the vocabulary of health finance in all of these countries.

The basic themes of this exposition of the economic underpinnings of risk sharing and the example of development of the U.S. system are as follows:

▲ Health insurance creates efficiency problems—notably, it is questioned whether the same care could be provided for less money under different financing and whether some care is not worth the benefits it achieves. Clear equity problems also arise under partial-coverage systems that leave many uncovered. Especially troublesome on equity grounds is giving the highest levels of subsidy to the highest earners, which occurs under U.S.-style tax subsidy through progressive taxation. (Enthoven [1984] makes the argument for more equal tax credits, perhaps adjusted for need, in place of an open-ended tax subsidy favoring higher-income taxpayers.)

▲ As the U.S. example indicates, trying to solve these problems through incremental change in public policy is very difficult because of the complex interactions of the efficiency and equity problems and the general equilibrium nature of the policy dilemma. Competing interests also arise—those of hospitals, doctors, insurers, employers, and beneficiaries—that make reform more difficult as time goes on.

▲ It is therefore very important to get some elements of the design of third-party payment systems correct from the start. There are a number of alternatives for injecting more equity and more cost-consciousness into health financing, but the U.S. has to this day not agreed on and implemented an overall approach, and elsewhere different approaches are used in different countries (OECD, 1992).

▲ Our concentration on the problems with the U.S. case does, to some degree, distort the understanding of possible policy responses to the problems. Other industrialized countries have taken other tactics to respond to the basic economic problems with insurance. All solutions have a temporary flavor—requiring constant adjustment and reform—and there is no perfect single correction.
The case studies make clear how many different ways there are to wrestle with the same basic economic issues. There are many examples from both the developing and industrialized world from which to draw insights for policy responses (OECD, 1992; Schieber, Poullier, and Greenwald, 1991), but empirical information about the effectiveness of alternative approaches is generally limited to aggregate data on spending and usage.
5.0 DEVELOPING COUNTRY EXPERIENCE IN HEALTH INSURANCE

Many developing countries are searching for options to generate additional resources for health care and at the same time extend coverage to underserved populations. In their search for financially sustainable mechanisms to expand health care coverage, policymakers in developing countries increasingly look to insurance. Although developing countries have considerable experience with a variety of insurance or risk-sharing schemes, for the most part, attempts at extending coverage through social financing are not well-documented. Moreover, generally little is known about the mechanics of health insurance in developing countries. This is particularly the case regarding the organizational, financial, and managerial features linking the major actors of health insurance schemes: consumers, employers, insurers, and providers.

This chapter, together with the 15 case studies constituting Small Applied Research Paper No. 4, fill this gap. Through analyzing the empirical evidence available from developing countries on institutional features and economic issues related to health insurance, the case studies complement the theoretical and conceptual discussions presented in previous chapters. Each examines key descriptive variables related to the what, who, how, how much, and under what conditions of health insurance schemes in developing countries.

Drawing on the case study material, this chapter summarizes and synthesizes the major findings. For a more detailed examination of the various insurance schemes and the institutional features therein, the reader can consult the case studies. This chapter is divided into two parts. The first introduces the analytic framework used for selecting, comparing, and analyzing the 15 insurance schemes presented in Small Applied Research Paper No. 4. The second presents capsule summaries of each case study. Emphasis is placed on describing the major institutional features of each scheme.

5.1 ANALYTIC FRAMEWORK

The purpose of the review of experience is to assess lessons learned from documented experiences in developing countries related to the extension of health coverage through insurance mechanisms. Coverage extension can take two forms: larger share of population and broader range of services. The focus is on the former. As suggested earlier, the analysis of experience centers mainly on the institutional attributes and how they relate to economic characteristics of insurance mechanisms. A related goal is to examine how public policies have encouraged, or, conversely, discouraged the expansion of social financing. It is important to note that the case studies do not constitute an exhaustive inventory of all social financing mechanisms currently in existence in developing countries; rather, they examine a cross-section of approaches to extend financial access to health care.

The case studies are not meant to form the basis for the construction of model schemes for replication elsewhere in developing countries. Considerably more research involving intensive fieldwork will be necessary to achieve such a goal. Nevertheless, as Akin (1989) argues, what is an appropriate insurance design is essentially an empirical question that depends on economic conditions, government policy initiatives, relations between the major actors in the health care
marketplace, demand and supply of health care, and the institutional and organizational elements of the scheme itself. Because the case studies draw on secondary source material, they irregularly address these issues. However, the cases do provide a number of lessons that can be applied to the design of insurance systems, particularly in terms of the effect of specific institutional features on coverage extension and on the equity and efficiency of resource allocation.

The objectives for each case study are three-fold:

1. Describe the institutional and organizational features of insurance schemes that seek to extend insurance coverage to low-income groups.

2. Analyze the institutional mechanisms constructed by a variety of insurance schemes to deal with economic problems inherent in health insurance. These problems include: adverse selection, moral hazard, cost escalation, catastrophic coverage, loading costs, and equity issues.

3. Specify the major strengths and weaknesses of insurance schemes in developing countries in terms of the trade-off between equity and efficiency.

The framework used here divides social financing efforts into five general approaches. Exhibit 5-1 provides summary information on each approach, distinguishing feature, title, and country. The classification should not suggest a typology of insurance mechanisms evident in developing countries. Classification is made difficult by the general lack of information on institutional and economic characteristics, the sometimes blurred distinction between provider and insurer, and the often complex and changing mix of institutional arrangements related to financing, provision, and provider payment. Placement of a scheme within a specific category mainly depends on the financing, policy, and regulatory role of the government. Other criteria include: relations between third-party payers and providers, benefits covered, sources of finance, and to a lesser extent, the *modus operandi* for extending coverage. Overlap occurs for these as well as other features. Nevertheless, for discussion purposes, the schemes constituting each approach share several key characteristics. Less variance exists within than across the categories. A general description of each approach follows.19
1. **Community-based risk sharing in rural areas**: Three case studies examine health insurance schemes in rural Africa: Health Zones in Zaire, Health Card Funds in Thailand, and Village Health Insurance in Guinea Bissau. These experiences share a number of characteristics. Funded through individual (or family) contributions, they are pre-payment mechanisms that aim to finance primary level services, the provision of essential drugs, and secondary-level care (in Zaire) to subscribers who reside in rural areas. All the schemes are linked to and often organized by government providers. However, in Guinea Bissau and Thailand, village health committees manage the schemes, collecting premia and paying providers.
2. **Social Security Coverage Extension:** Four case studies explore the extension of social security health benefits to lower-income population groups that do not directly contribute to (and thus are unaffiliated with) regular social security systems. The cases are drawn from Latin America, but represent two distinct coverage extension models: (1) institutional reform: integration of social security and health ministry health service system in Panama and Costa Rica, and (2) extension through creation of a separate, and less generous, health service system in rural areas in Ecuador and Mexico. All the extension efforts are based on the principal of social solidarity, but government financial participation can be considerable.

3. **National Health Insurance Systems:** Some governments have attempted to organize and restructure, and at times, dismantle and reassemble the various institutions that constitute the health sector. Although the result of diverse social policies, the principal aim of the restructuring has been to reduce or at least reorient the role of the government in the financing and provision of health services. Three case studies examine the emerging mosaic of insurance schemes in Korea, Chile, and China. Although difficult to compare, these insurance systems share some features. Many of the schemes that make of the emerging system tend to be employment-based, and, taken together, their ultimate goal is universal coverage. Moreover, each country has or seeks close links to the private sector. Korea is reorganizing the previous free-market approach to guarantee greater access and equity. Chile is promoting private health insurance schemes to reduce government subsidies for the middle class. China seeks to shift responsibility for the financing and provision of health care to individuals, private and collective enterprises, and providers.

4. **Limited Catastrophic Coverage:** The two schemes in this category, Medicare System of the Philippines and the National Hospital Insurance Fund of Kenya, protect the individual against catastrophic loss due to high cost of care or long-term treatment. They provide coverage for inpatient care only. However, both schemes plan to extend coverage for more predictable outpatient services.

5. **Public - Private Sector Linkages Through Pre-Payment Plans:** The final set of case studies examines insurance schemes that link private sector provision with government and social insurance financing. Each of the schemes examined involves the use of private HMOs to provide care, and to some extent, share the financial risk of this provision. Two of the schemes are relatively recent innovations: the Medicare-HMO tie-up in the Philippines, and Teachers' Health Insurance in the Dominican Republic. The remaining design, Medical Care Collectives in Uruguay, dates to the mid-1800s.

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20 The case studies do not include an examination of regular social insurance systems prevalent throughout Latin America, and to a lesser extent, in Asia. As noted earlier, the overall focus on the review of experience is on coverage extension. With few exceptions, social security regimens have a poor record of coverage extension beyond salaried workers in urban areas. Moreover, security-based health care has been reviewed by Mesa-Lago (1989, 1985); McGreevey (1990); Ron et al. (1990); and Zchock (1983).
5.2 SUMMARY DESCRIPTIONS OF INSURANCE SCHEMES

The remainder of this chapter presents brief summaries of the schemes profiled in Small Applied Research Paper No. 4. For more in-depth description of the institutional features of each scheme as well as analysis of how these features affect the economic issues outlined in Chapter 2, the reader should consult the case studies.

5.2.1 Approach 1: Community Risk-Sharing/Rural Health Insurance

Case Study No. 1: Zaire Community Health Insurance Schemes:

This case study focuses on an insurance scheme established in the predominantly rural Bwamanda Health Zone in 1986. The purpose of the scheme was to generate resources for health care in the health zone, but specifically for the 156-bed regional hospital. The insurance scheme is sponsored by the health zones, which are relatively autonomous government administrative units. Interestingly, the schemes have few ties to the central government. The health zone manages the scheme and all services are provided in its facilities. In short, it is a direct delivery insurance plan in which the insurer is also the sole provider of services. It covers about 60 percent of the eligible population, but coverage of distant subpopulations is considerably less.

The plan covers the costs of hospitalization, but also covers dental extractions, ambulatory surgery, and chronic care treatment at ambulatory facilities. Enrollment is voluntary, but to avoid adverse selection, if one member subscribes, all family members must enroll. To receive coverage under the plan, an enrollee must be referred by a health center or health post. This deters self-referral to and excessive and inappropriate use of the hospital. The plan pays the hospital based on a prospective per admission charge covering all services (e.g., doctor visits, nursing, hotel, diagnostic, medicines, operating room, etc.) which may provide a disincentive to the hospital to provide additional services.

Financial statements show that the plan has enjoyed a positive financial balance and, because of the scheme, the hospital raised cost recovery rates from 48 to 79 percent between 1985 and 1988. Enrollment and premium payment occur once a year during harvest time. Copayments (approximately 25 percent of cost-based fee) are required for all hospital services except maternity. A cost-based fee is charged to non-plan patients. Salaried employees, representing about five percent of zone population, pay a cost-plus fee. As stipulated by law, employers pay the both the premiums and copayments for this group.

Salaried employees are high users of hospital services, representing 17 percent of hospitalization but only five percent of the population. Non-salaried, insured patients demonstrate the second highest utilization rates. Insured patients were from two to seven times more likely to receive hospital care than their uninsured counterparts, while employed patients were 4 to 20 times more likely to be hospitalized. Despite the referral requirement, the zero price faced by salaried employees combined with the hospital’s financial incentive to collect the cost-plus copayment for this group result in significantly higher utilization levels.
The case study shows that the Bwamanda insurance plan has achieved relatively high levels of coverage among low-income rural populations because of an affordable premium, acceptable quality of care, investment in community education and outreach activities, and efficient administration. However, access inequities persist between the insured and uninsured populations, and between different segments of the insured population.

**Case Study No. 2: Thailand Health Card Funds**

This study examines health care funds that provide enrollees, usually a family, access to publicly-provided primary health care services. These funds are active in rural areas where government facilities are the principal providers of health services. Benefits include mother and child care, immunizations, discounts on drugs purchased at community drug cooperatives, and curative care for a predetermined number (usually six) of sickness episodes provided by ambulatory health posts and health centers. Membership also facilitates referrals, allowing the bearer to jump the queue at district hospitals. However, in some funds, cardholders may exchange most or all benefits provided by a card to cover or reduce the cost of inpatient care.

The health card funds can best be described as community financing schemes. Risk-sharing is minimal and may be absent for most funds. Membership in a fund provides family members discounts on already low fees charged for outpatient services in public facilities.

The Health Ministry provides start-up capital for the funds but they are owned by card-purchasers or shareholders and managed by paid community-elected administrators. Health card funds cover about 10 percent of the rural population (three percent of the total population), whereas drug card funds cover between 50 and 60 percent of the rural population. These latter schemes are essentially revolving drug funds. Enrollment varies considerably across regions and may have decreased in recent years. The low level of coverage for health cards relate to competition from other programs which distribute cards granting the bearer free care at public facilities. In theory, these latter cards, known as "low-income cards," should be distributed to poor families only, but means testing is lax. Other reasons for low coverage include lack of publicity, poor management, and the charging of low fees at public ambulatory facilities. For example, the price of a family card, permitting curative care for six or eight episodes, was US $12. But the median patient charge in health centers for patients without a card was only US $0.40. This situation may discourage the purchase of health cards.

Health cards come in three classes, each with a different price: family coverage, individual coverage, and individual coverage for MCH services only. Family cards are the most popular. A surcharge may be required for families where the wife is pregnant and there are children under five years of age. Health card holders do not make copayments. Health card funds may provide incentives for holders not to use the card. In some cases, a card can be renewed for another year free of charge. In others, free medical check-ups are provided if the card has not been used during the year.
The card funds reimburse public providers once a year based on negotiated fees. Provider reimbursement represents between 45 and 60 percent of expenditures. Revenues also are used to make loans to cardholders and finance community activities. The fund managers do not operate health services, nor do private providers participate in the system in part because of the low reimbursement levels. The price paid for health cards fall far short of covering the cost of services provided to cardholders in public facilities. It is unknown whether reimbursements from health card funds represent a significant source of facility income.

There is some evidence of adverse selection and moral hazard in the health card schemes. Utilization of curative care services by cardholders is higher than for the general population and families with ill members appear more likely to purchase a card. From a different perspective, the health card fund may encourage use of ambulatory facilities, decreasing the flow of self-referrals to district hospitals.

**Case Study No. 3: Community Health Insurance in Guinea Bissau:**

*Abotas* are community finance schemes that cover outpatient services provided at Guinea Bissau's 450 locally-managed village health posts (VHPs). The purpose of the insurance plan is to finance the provision of primary health care at VHPs. The plan covers morbidity consultations, essential drugs, and referrals—essentially all services provided at the VHPs. It was designed as an alternative to user fees. User fees are considered inappropriate for rural villages in part because most households do not have available cash throughout the year. Approximately 80 percent of the country's population reside in rural villages. Village surveys show that on average 90 percent of the village population is enrolled in the insurance schemes.

Village committees decide the enrollment date(s) and set the premium. In general, premiums are paid once or twice a year, and usually correspond to harvest periods. The amount paid depends either on the number of adult family members or total number of household members. Copayments are rare. Villagers who do not enroll in the plan may be refused care or charged user fees. It appears that access to drugs is the principal reason for joining the scheme. There is some evidence that the healthy resist enrolling the scheme. Many plans permit individual membership which may result in adverse selection.

The schemes can best be described as rotating drug funds since premium payments are generally used to purchase drugs. Drugs are obtained from the MOH at subsidized prices. However, stock-outs are common. This relates to the lack of control over distribution by VHP staff, the MOH's poor logistical system, and insufficient funds. Income derived from the insurance plan only covers 20 percent of total expenditures in the VHPs and 29 percent of drug expenditures. Many villages have raised the premium to keep pace with rising drug costs.
5.2.2 Approach 2: Social Security Coverage Extension

Case Study No. 4: Health Ministry–Social Security Integration in Panama:

During the 1970s, Panama's military government unified the provision of health services through the country's two principal institutional providers: the Social Security Fund (CSS) and Health Ministry (MS). Integration granted the uninsured population, generally low-income Panamanians excluded from CSS coverage, access to CSS health services. Integration occurred in the country's interior provinces. Metropolitan Panama City, containing nearly half the population, remains unintegrated. The major goal of integration was to extend the health programs of the social security regimen to low-income groups, particularly in rural areas. A secondary goal was to rationalize the health service system through the elimination of duplicated services.

Through the establishment of regional administrative units, integration in Panama consisted of unifying the CSS and MS provider network. However, each institution retains proprietorship of its respective infrastructure. Financing and central-level administration remain separate. All residents of the integrated provinces are entitled to the same health benefits, regardless of their affiliation with the CSS. Insured residents contribute through a payroll tax while tax revenues, channelled through the MS budget, pay for the uninsured.

The integrated regions cover a wide range of primary, secondary, and tertiary services. Services are partitioned among MS and CSS facilities and provided through a unified direct delivery system. CSS and MS personnel are assigned to facilities according to need, rather than institutional employer. With integration, the uninsured population were granted access to an array of services unavailable in MS facilities (e.g., specialty medical care, diagnostic services, and tertiary care).

During the 1970s, the CSS centered its financing on hospital and specialty services (in both CSS and MS facilities). This permitted the MS to direct its scarce resources to the extension of primary care and public health services to the rural areas. The transfer of CSS funds derived from urban employees and their employers to finance services for the rural poor is an example of a distributive policy based on the social solidarity principal. However, most CSS authorities and the insured population never have accepted integration in theory or practice. They tolerated the reform because of strong government (military) support. Once the regime began to weaken in the 1980s, these groups have pressured for the dismantling of the system.

Because of government financial constraints, the MS was unable to maintain its contribution to the rapidly expanding service system. By the early 1980s, the CSS was financing two-thirds of recurrent costs and nearly half of capital investments. Faced with its own liquidity crisis in the mid-1980s, the CSS began to reduce its financing of integrated service delivery while increasing outlays to non-integrated Panama City and to services to which only the insured had access (e.g., subsidized inpatient care in private hospitals). The government was unable to fill the gap and quality of care deteriorated rapidly.
Utilization inequities have narrowed between the insured and uninsured populations, but significant gaps persists. Before integration, per capita outpatient utilization by the insured surpassed the uninsured by an average of five to one. By 1986, this gap was reduced to about half these levels. The consumption of specialty services, drugs, and diagnostic tests of the insured population dwarf the utilization levels of the uninsured.

The integrated systems have invested heavily in often unnecessary high technology equipment while underfunding primary health care interventions. These investments were fueled by the general curative orientation of the CSS-dominated decision making process and by the demands by specialists whose ranks increased significantly during the post-integration period.

The direct delivery system is plagued by deficiencies that raise costs. These include low productivity and underutilization of installed capacity due to high absenteeism, work evasion, and anarchic medical care organization; dysfunctional referral systems that grant urbanites direct access to specialty services; and decision making based on political and confidence criteria.

Case Study No. 5: Health Ministry-Social Security Integration in Costa Rica:

Similar to Panama, Health Ministry (MS) and Social Security (CCSS) health service systems were integrated in Costa Rica during 1970s. Unlike Panama, however, integration involved the transfer of all MS hospitals to the CCSS. Each institution has separate roles within the integrated system. The CCSS is responsible for providing curative care for the entire population. The MS is responsible for preventive services and provision of primary health care to rural and indigent populations. Although both agencies share the same infrastructure, duplication of services is minimal.

By 1990, nearly the entire population had access to health care, and approximately 85 percent insured through the CCSS. Groups covered by the CCSS social insurance health program include urban and agricultural workers, self-employed, pensioners, and domestic servants. The remainder was covered through social welfare and public health programs.

In the mid-1980s, the government established a social welfare program, known as state insurance, that covered the indigent, unemployed, and other groups not covered by the CCSS. In theory, the government reimburses the CCSS for curative services provided to groups covered under the state insurance scheme. To obtain health care, Costa Ricans not covered by the CCSS must obtain coverage through the state insurance program. This can be a laborious process involving considerable delays which may reduce access. Without enrollment in either the CCSS or state insurance schemes, a person can be denied both MS and CCSS services.

CCSS services are financed through payroll taxes together with a government contribution. Since the mid-1980s, the CCSS has faced a severe financial crisis because of the deficit related to the health program, and also because the government often fails to fulfill its obligations with the CCSS, both as an employer and a tripartite contributor. The state also irregularly reimburses the CSS for
care provided to indigents enrolled in the state insurance program. No copayments are charged to CCSS or state-insured patients. The uninsured face nominal user fees.

The CCSS and MS own and operate all facilities, and all personnel are salaried. Patient satisfaction with service provision is low. Queues, depersonalized attention, poor medical care organization, congestion, absenteeism, and low staff morale are major problems. Physicians appear to recruit patients for their private practice by restricting access to hospital beds (through extending lengths of stay) and specialist appointments (through scheduling excessive follow-up visits). This practice leads to long waiting times, overcrowding, waste, and high costs. The best way to gain access to a CCSS hospital bed is through the private clinic of a CCSS-contracted physician.

Cost are high in part because of moral hazard manifested by excessive use of medications, diagnostic tests, and referrals to specialized services. This relates to zero prices, chaotic medical care organization, and a perverse incentive structure. The case study describes two experiments aimed at improving efficiency and reducing costs through altering financial incentives. Both appear to have fallen short of their goals. One approach, the formation of medical cooperatives, appears to have increased productivity and patient satisfaction. But per capita utilization has more than doubled and total costs appear to be higher.

**Case Study No. 6: Peasant Social Security in Ecuador**

Seguro Social Campesino (SSC) is a streamlined social insurance scheme providing coverage to low-income traditional farmers and their families within a larger and more generous social security system that covers mostly urban, formal sector workers. SSC members are enrolled through local organizations including cooperatives, agricultural firms, producer associations, traditional community groups, and organizations established to group communities for the specific purpose of SSC affiliation. Basic curative and preventive services are provided by general practitioners and nurse auxiliaries who staff small dispensaries that dot the Ecuadorian countryside. SSC members have access to higher-level social security institute (IESS) specialty and hospital services through a preauthorization process that may require a waiting period.

Founded in 1969, SSC is an organizational dependency of IESS. However, with its separate budget, administrative apparatus, facility network, and personnel, the SSC operates more or less autonomously from the IESS. Since its founding, SSC has increased coverage from 3,000 to nearly 700,000 enrollees. In 1992, it covered approximately 14 percent of the rural population. However, SSC has fallen short of its goal of achieving one million enrollees. There is some evidence that the site selection process for dispensaries may discriminate against poorer and more dispersed populations.

Unlike the IESS, SSC covers the entire family. The family is the principal enrollment unit and the head of the household is responsible for paying the single per-family, monthly premium. This premium is a token payment representing one percent of the minimum wage (less than US $1 in 1992). No user fees are collected and drugs are distributed free of charge. Revenues derived from the premium are
In theory, SSC is financed through a tripartite arrangement based on the social solidarity principal. A one percent payroll tax is assessed on the wages of IESS enrollees but payment is divided in nearly equal shares among government, employer, and employee. But the government is chronically delinquent in its contributions. In effect, SSC is entirely financed by employer and employee contributions drawn from the one percent tax and from other IESS funds.

SSC per-enrollee spending is about one-fifth of IESS per enrollee outlays. This relates to the difference in the types of services offered by the two schemes and to differences in utilization. For example, outpatient visits of IESS enrollees triples the average rate of their SSC counterparts.

SSC's impact on rural health conditions is questionable. Utilization indicators based on dispensary registers suggest that coverage of at-risk groups such as pregnant women and young children is low.

The SSC seeks to decrease its financial dependency on the IESS, improve the impact of services, and explore lower-cost models for coverage extension.

Case Study No. 7: Rural Social Security Extension in Mexico:

In 1979, the Mexican Institute of Social Security (IMSS) established linkages with a government agency to form the IMSS-COPLAMAR program. Financed by the central government and partly by the IMSS, the program sought to extend health care coverage to impoverished and underserved areas of rural Mexico. The IMSS manages the program.

Financing is shared between the central government (60 percent) and the IMSS (40 percent). Service is provided by a direct delivery system through a network of over 3,000 clinics and 50 secondary-level hospitals. In general, the clinics are located in dispersed rural hamlets according to surveys that measure poverty and access to services. Each clinic serves an average of 4,000 people while hospitals serve populations of 200,000. Unlike the high-technology orientation of the regular IMSS services, IMSS-COPLAMAR employs a preventive and primary care approach to service provision, especially at the clinic level. Services include: maternal/infant care, family planning, and environmental sanitation. About 85 percent of all service contacts are provided at the clinic level. The clinics also provide outreach services to nearby communities. Beneficiaries have limited access to IMSS services or facilities.

By 1988, the scheme covered nearly 10 million persons, representing over 50 percent of the rural population. The scheme does not require the payment of premiums or user fees but communities donate land and labor for facility construction. The communities are also responsible for facility maintenance.

Per capita expenditures of the scheme are significantly lower than other social insurance schemes and government health service systems. For example, the Health Ministry and IMSS respectively spend six and nine times more per capita than IMSS-Coplamar. The direct delivery system depends on highly-motivated recent medical school graduates. Absenteeism and work-shirking is uncommon in part
because of the isolated locations, vigilance by the communities, and constant supervision. Personnel turnover has become a problem, however.

Incidence of infectious diseases has decreased significantly in the communities where IMSS-COPLAMAR clinics are located. These improvements may not be exclusively attributable to the program.

5.2.3 Approach 3: National Insurance Systems (Employment-Based With Intention of National Coverage)

Case Study No. 8: Health Insurance in Korea:

Statutory health insurance was introduced in 1977 for industrial workers and their dependents. In incremental fashion, Korea achieved universal coverage in 1989. The case studies describes four insurance schemes that cover approximately 90 percent of the population: (1) Industrial Establishment Medical Insurance (IEMI) that covers industrial workers and their families; (2) Special Scheme for civil servants, military personnel, and private school teachers and their dependents; (3) Rural Regional Insurance for farmers and fishermen; and (4) Urban Regional Insurance for urban self-employed and unemployed. The remaining 10 percent of the population, mostly the poor and indigent, is protected by a government-sponsored medical aid program. Mandatory universal health coverage in Korea is mostly self-financing, has improved access to health care for low-income groups, and avoids adverse selection.

The insurance schemes are managed by over 300 non-profit and non-competitive regional insurance societies. IEMI enrollees are grouped into a single society but members of the remaining schemes are splintered into numerous societies that are organized along occupational, regional, or subregional lines. Most societies are small, enrolling less than 200,000 members. The societies are heavily regulated by the Ministry of Health and Social Affairs. For example, benefits and prices are often determined by the government, but societies collect premiums and pay providers, and to a lesser extent, decide premium rates. In the Urban and Rural Regional schemes, rates are based on family assets and income. Smaller societies and those with a higher number of low-income members tend to face higher health risks.

The insurance schemes are financed through a payroll tax that ranges between three and eight percent of wages. Contributions are shared equally among workers and employers. Only the Rural Regional scheme receives a government subsidy. All insured face deductibles and copayments. Under the government's medical aid program, the poor are provided free care or pay nominal fees.

Although Korea has achieved universal insurance coverage, achieving universal access has proven more difficult. Geographical, utilization, and finance inequities remain. Due to low per-capita supply of physicians and facilities, access to health care in rural areas is significantly less than in the cities. Utilization rates by the insured are more than twice the rates of the uninsured. Coinsurance rates, the sum of copayments and deductibles, are among the highest in the world. The effective rate ranges from 40 to 62 percent for outpatient services (depending on the type of facility) and 20 percent for inpatient care.
Copayments are applied to all groups regardless of income and may place a heavy financial burden on low-income members.

With expansion the health insurance during the 1980s, the schemes experienced rising costs that more than doubled the inflation rate over this period. This relates to the extension of health insurance, incentives of the provider payment system, and administrative costs. Insurance extension increased utilization by 80 percent. Most services are provided through the private sector and providers are reimbursed on a retrospective fee-for-service basis. Fees are set by a National Schedule using cost-plus pricing which is negotiated between providers and government. Physicians can collect separate fees for diagnoses, treatment, and medications. The fee-for-service reimbursement system induces physicians to provide unnecessary care to increase income. In hospitals, the fee-for-service system provide incentives to use high technology inputs. Costly high technology is prevalent throughout Korea's hospitals. Another factor contributing to high costs is administrative spending that averaged 13 percent of total revenue in 1988. This rate nearly doubles that for many developed countries.

Case Study No. 9: Health Care Financing in Chile:

This case study describes two health financing systems established in the 1980s: Institutos de Salud Provisional (ISAPRES) and Fondo Nacional de Salud (FONASA). The former are private prepayment plans that cater to middle and upper-income households. The latter is a social insurance fund that is used by middle and lower-income households. Both systems are financed in part from a seven percent payroll tax applied to the wages of enrollees who are mostly formal sector workers. Taken together, these systems cover about one-fourth of the population.

ISAPREs were established in 1981 by the former military government to develop the private medical market, implement cost-sharing for health care, and permit the government to target its resources to the poor. In 1990, approximately 16 percent of the population is enrolled in 34 ISAPREs. ISAPREs can be classified into two types: open and closed. Open ISAPREs, which represent over 90 percent of ISAPRE enrollment, permit the general public to enroll. Closed ISAPREs confine membership to specific firms, occupations, or industries. ISAPREs resemble HMOs in the United States in the sense that they integrate the finance and delivery functions. Some contract private and public providers on fee-for-service basis, other own and operate health facilities and contract salaried personnel, and still others combine different contractual arrangements.

The financing of the ISAPREs eliminates the social solidarity element evident in the former social security-managed scheme. The seven percent salary deduction is transferred directly to the ISAPRE chosen by the enrollee. They do not pass through FONASA or other government institutions. Since ISAPRE enrollees are generally higher-income workers and employees, the total value of ISAPRE contributions represents 70 percent of all FONASA and ISAPRE deductions. ISAPREs represent less than 50 percent of total FONASA and ISAPRE enrollment. Most ISAPREs charge copayments.
Premiums vary considerably and enrollees usually have to make an additional payment to supplement the salary deduction. By law, ISAPREs are required to offer a basic package of services covering primary and hospital care. Most offer a set of plans that contain additional benefits, smaller copayments, less exclusions, etc.

ISAPRE members are comparatively high users of health services, averaging nearly twice the number of outpatient consultations than their uninsured counterparts. ISAPRE members spend nearly five times more on health care than users of the public system. Because of the generally lower copayments, in 1990, the per-enrollee medical consultations rate was 4.4 higher in closed ISAPREs than in open ISAPRES.

ISAPREs use a number of devices to reduce losses due to moral hazard and adverse selection, including copayments, risk-screening, and use of actuarial tables to establish rates. Competition among open ISAPRES for enrollees provides incentives to reduce costs and raise quality.

FONASA is an insurance fund managed by a parastatal agency, financed by worker payroll taxes and covering ambulatory and hospital care to enrollees through public and private providers. The scheme generally covers salaried, middle and lower middle-income workers. It is the employee's decision whether to enroll in FONASA or an ISAPRE. Employers are intermediaries, directing the payroll deduction to the institution selected by the employee.

FONASA relies on a free election, voucher-based cost recovery system. It permits enrollees to select three levels of care according to their incomes and needs. The amount of copayment and selection of providers are the main criteria for distinguishing among the levels. Three prices are set by the government for more than 2,500 medical treatments. Private providers select one of the three price categories. The level of subsidy is a percent of the established price: 50, 38, and 31 percent for Levels I, II, and III, respectively. For example, Level I prices are the lowest and the government subsidy is the highest, representing about 50 percent of Level I prices. FONASA enrollees can receive care at public facilities at Level I prices.

Most private providers are affiliated in Level III care. Specialists are concentrated at this level. However, even Level III prices are considered too low for private hospital care. Most enrollees seek inpatient care in public facilities.

Although there are no limits on utilization, the high copayment inherent in the voucher system may act as an deterrent to unnecessary use. Providers redeem the vouchers, originally purchased by the patient, for cash. This system has eliminated several abuses, such as fraudulent claims, that were prevalent in the former fee-for-service reimbursement system.

**Case Study No. 10: Health Insurance in China**

During the 1980s, China implemented economic reforms that have had enormous consequence on health finance and delivery. In general, there has been a shift away from health care financed and delivered through collective-based insurance and
through publicly-financed facilities and services. The public share of health expenditures decreased significantly during the 1980s. Currently, the system is characterized by provider self-financing (through user fees, and to lesser extent, insurance) and out-of-pocket spending by individuals. User fees are the principal source of financing for public facilities. Since 1980, insurance coverage has decreased from 70 to 25 percent of the population. An additional 10 to 15 percent have limited coverage.

Five health insurance schemes cover about one-fourth of China's population: (1) Government Employee Insurance System (GEIS) is for government workers, financed from general tax revenues; (2) Labor Insurance System (LIS) covers workers and their families in state-owned enterprises; (3) private insurance plans covers employees of private firms and workers hired under employment contracts; (4) Collective Insurance Systems (CIS) provides coverage for county-level enterprises; and (5) Rural Cooperative Insurance system (RCIS) covers rural farmers through the former production brigades.

Dependents are not covered by the GEIS scheme and only partially covered by LIS and CIS. The RCIS scheme, once the largest insurance program in Asia, appears to be dysfunctional in many areas as rural residents increasingly pay out-of-pocket for health services. The collapse of the RCIS is the principal reason for the observed decrease in health insurance population coverage since 1980.

GEIS and LIS cover care for primary members without coinsurance, whereas CIS requires a 20 to 30 percent copayment. CIS also places ceilings on total amount of benefit payments. RCIS enrollees are entitled to free care and drugs provided at the village health station. However, this plan only pays half the bill for services provided at county and city facilities if the patient is referred. Although the distinction is increasingly blurred, enrollees can seek care in the public or private sectors. All public facilities depend on fees to cover their recurrent costs and operations increasingly take on features of a private business. The state subsidizes capital investments.

In general, per capita spending on health has escalated significantly for the schemes for which information is available. The increase in spending is related to the retrospective fee-for-service system and general absence of coinsurance common to all schemes. As mentioned, the largest insurers, GEIS and LIS, do not require copayments or deductibles. The absence of a referral system results in the use of hospitals for common illnesses and higher spending.

Government pricing policies contribute to the diffusion and use of high technology hospital services, which in turn contribute to higher costs. The government sets prices for pre-1950 treatments and drugs at 1950 costs (below current costs), while new treatments are apparently set above costs. This practice provides an incentive to hospitals to expand the range and increase the volume of newer treatments. Since equipment is purchased by the government, an increasing share of government health expenditures are directed to large urban hospitals to the detriment of lower-level facilities located in rural areas.
5.2.4 Approach 4: Limited Catastrophic Coverage

Case Study No. 11: The Philippine Medicare System:

Founded in 1969, Medicare is a statutory social insurance health program covering civil servants and formal sector workers in private firms. The program also covers dependents and parents of the contributing members. Medicare consists of two programs: the Government Social Insurance System (GSIS) for government workers, and the Social Security System (SSS) for private sector workers. In 1990, 38 percent of the population was covered by Medicare, yet the program only represented three percent of total health expenditures. Traditional farmers, seasonal agricultural workers, domestics, and informal sector workers are not covered by the scheme. However, self-employed persons with an annual income above a predetermined level are eligible for enrollment. Population coverage should be significantly higher, but evasion of the mandatory enrollment law is widespread.

Benefits cover inpatient care only and include bed accommodations, drugs, diagnostics, surgery, and physician consultations. Hospitals are ranked according level: primary, secondary, or tertiary.

The system is financed mainly through payroll taxes representing 2.5 percent of salary and shared equally by employer and employee. However, Medicare does not apply this rate uniformly across all salaries. It has established a wage ceiling above which all contributions are the same. Even though risk-sharing occurs between healthy and sick and between individual members and members with families, the wage ceiling reduces risk-sharing between the lower and higher-income members. The wage ceiling has a regressive effect since Medicare contributions are not proportionate to wages.

Coinsurance is high. The scheme covers only 48 percent of total charges for SSS enrollees and 28 per cents for GSIS members. Out-of-pocket copayments make up the difference. However, the reimburse system encourages use of higher cost tertiary care facilities by paying in absolute terms more for services provided in these facilities than in primary and secondary facilities (even though the higher Medicare reimbursement represents a smaller portion of total hospital charges in tertiary facilities).

All services are provided in Medicare-approved private hospitals. Most hospitals are medicare-certified. During the early years of the scheme, Medicare stimulated the development of the private hospitals in areas lacking these facilities. Hospitals are paid through a slow-moving retrospective fee-for-service system. Reimbursement rates are determined by Medicare and large gaps exist between the fees and actual costs. However, the low level of reimbursements and similarly the high level of copayments may exert deflationary pressure on overall prices.

Because fee-for-service compensation encourages providers to prescribe unnecessary services and inflate bed occupancy rates, Medicare has imposed expenditure ceilings for specific services and implemented a regular hospital monitoring system.
Medicare has accumulated relatively large reserves in part because of low reimbursement levels, limited benefits, and low administrative expenses. There is increasing public pressure to extend population coverage and raise benefit levels. Case Study 15 describes an experiment to incorporate outpatient services in the medicare benefit package.

**Case Study No. 12: Kenya National Hospital Insurance Fund:**

The National Hospital Insurance Fund (NHIF) is a statutory scheme that provides coverage for inpatient care. Established in 1966, the scheme originally sought to alleviate crowding in public facilities by providing middle-income groups access to higher quality private hospitals. NHIF covers mainly salaried workers and their families. Persons over 65 years of age are excluded. Compliance with the mandatory affiliation law is lax in part because the NHIF has little institutional capacity to monitor contributions or the evasion thereof.

Benefits covered include most inpatient services in approved hospitals, nursing and maternity homes. Although there is no coinsurance, reimbursements are insufficient to cover costs in most private hospitals. These facilities require payments from patients to make up the difference.

NHIF is financed through a payroll tax that is assessed according to employee income. Income categories are used to determine the exact contribution. The finance mechanism is progressive in the sense that those with higher incomes pay higher fees. However, NHIF pays higher reimbursement rates in expensive facilities which benefits higher income members who can afford to pay the balance not covered by the scheme. Employers collect the contribution through wage deductions and transfer them to the NHIF. Employers do not contribute to the NHIF on behalf of their employees. However, most employers provide subsidies to defray out-of-pocket medical expenses.

Reimbursement consists of flat per bed-day fees which vary according to how a facility is classified by the NHIF. Within a given category, the same rate is paid regardless of the type or quantity of services provided. The lowest rate applies to public hospitals and highest to prestigious private facilities in urban areas. In these latter facilities, the reimbursement rate may represent an insignificant proportion of the total bill. In rural mission hospitals, however, the reimbursement rate is higher than charges and may subsidize free care provided to the poor. Because of the low benefits and reimbursement rates, the fund has amassed considerable reserves, which in turn has generated pressure for reform.

The case study discusses a number of proposed changes to the NHIF. These relate to reimbursement rates, claims monitoring and analysis, benefits, and contributions.
5.2.5 Approach 5: Prepayment Plans (Government and Social Security Linkages to Private Providers)

Case Study No. 13: Social Security – Private Sector Linkages in Uruguay:

Uruguay’s social security system consists of several schemes that provide coverage to different occupational groups. Taken together, these schemes use indirect service delivery systems that are regulated by the government. These schemes are administered by a single agency, the Social Insurance Bank (BSP). All schemes finance the provision of services in private HMO-like institutions known as Instituciones de Asistencia Médica Colectiva (IAMC). The IAMCs originate from the mutual aid societies founded by occupational and immigrant groups in the mid-1800s to cover social risks.

Approximately half the population has access to the IAMCs through a variety of public, private, and social security financial arrangements. For example, about 40 percent of IAMC members are financed through the social security (payroll) tax system. Most of the remainder enroll on a voluntary basis and pay a premium. An undetermined number are enrolled through special programs financed by the government through general tax revenues. Among the insured, benefit levels vary according to economic activity, age group, residence, and income. The BSP also has extended coverage to a segment of the informal work force.

Enrollees in both social security schemes and IAMCs are concentrated in the capital city, Montevideo. In the country's interior where 46 percent of the population resides, nearly 75 percent is uninsured or unaffiliated with an IAMC. Social security does not cover dependents or pensioners. These latter group are covered through individual or group plans linked to IAMCs or seek care at lower quality health ministry facilities. Often employers pay a share of the IAMC premium for employees' dependents. Nearly 90 percent of the population has access to health services through insurance or public providers.

The social security system capitulates the IAMCs to provide a standard package of benefits to enrollees, usually at a negotiated price. Although individual and groups plans are regulated to an undetermined extent, premiums and benefit plans vary.

The IAMCs are at risk to provide the mandated comprehensive package of services either through their own network of physicians and facilities or through contracts with others. Physicians are salaried or paid on a fee-for-service basis. There is evidence that the latter payment mechanism results in unnecessary use of outpatient services. In theory, the capitation system provides the IAMC an incentive to reduce costs due to moral hazard on both the demand and supply sides. But few appear to have installed functional mechanisms to do so.

Case Study No. 14: HMO as Social Security Substitute in the Dominican Republic:

This case study describes an HMO insurance scheme (SEMMA) that provides medical services to primary and secondary school teachers. SEMMA was formed by the
teacher's union and the Ministry of Education through a collective agreement. In part because of the perceived low quality of care, the teachers rejected enrollment in the Dominican Social Security Institute (IDSS) and pressured the government to join the teachers in the financing and management of an HMO. SEMMA is financed through premium payments. Seventy-five percent is contributed by the government and the remainder is deducted from the teacher's salary.

SEMMA contracts private providers through a capitation system. Providers generally include hospitals and their associated physician groups. In the Dominican Republic, most private hospitals are linked to physician groups which in turn have formed HMOs, known as igualas. In general, the purpose of the facility-linked HMOs is to channel volume to the physician owners. SEMMA tends to contract facilities that operate an iguala or at least are under contract with one, but does not contract igualas directly. Rather it contracts these hospitals/physician groups because of their experience with prepayment plans. In 1990, SEMMA contracted over 60 facilities located throughout the country to provide services to enrollees.

In 1990, SEMMA's enrollment reached over 103,000 teachers, dependents, and retirees. The plan covers a comprehensive package of outpatient and inpatient services at about half the premium charge by other igualas for a similar package. However, SEMMA members have more limited choice of providers, greater restrictions on utilization, and pay higher copayments for some services than enrollees in other igualas.

SEMMA capitates all affiliated facilities to provide the services stipulated in the benefit package. Each teacher must select one facility where she and her family receive all benefits. Once a year, teachers have the option to change providers. SEMMA is attractive to providers because of the large volume of enrollees, especially in urban areas. One the other hand, many providers find the low premium equally unattractive. Providers compete for SEMMA enrollees. This is particularly the case in large cities. Some have profited from SEMMA contracts while others have cancelled their ties to SEMMA because of their inability to contain costs. The performance of the more successful providers results from efficient utilization management, perceived high quality of care by members, large volume of enrollees, and relatively low physician compensation.

Case Study No. 15: Philippine Medicare-HMO Tie-up

The Philippine Medicare-HMO tie-up is an experimental program that seeks to extend Medicare coverage to outpatient services. As discussed in Case Study No. 11, previous to the experiment, Medicare covered inpatient care only. The HMOs provide Medicare the mechanism whereby patient and provider behaviors can be controlled to contain costs.

For the standard Medicare contribution rate, the tie-up provides additional hospitalization coverage and limited outpatient services. The latter services consist of free outpatient consultations, preventive services, and routine dental care. The share of inpatient expenses paid by Medicare is 33 percent for the tie-up compared to 30 percent for the regular Medicare program.
Established in 1987, the tie-up currently contracts with two HMOs located in Manila. Medicare collects contributions and remits them to the HMO selected by tie-up enrollees through a capitation payment mechanism. Only Medicare enrollees who reside in or near metropolitan Manila and have made at least three years of continuous contributions to the scheme are eligible for participation in the program.

Since its establishment, the tie-up has enrolled nearly eight percent of the eligible 2.2 million Medicare members residing in Manila. Perceived quality is considered high since few tie-up enrollees have opted out of the program. There is evidence that the HMOs market the program to younger and healthier Medicare members employed by large firms and government agencies. The HMOs also revert catastrophic cases to the regular Medicare program, usually after stabilizing these patients in HMO-affiliated hospitals. In short, the tie-up reduces risk sharing among the sick and healthy within the overall Medicare scheme.

Although the tie-up HMOs own and operate health care facilities, they also contract services to a large number of affiliated facilities. The HMOs are sophisticated operations that have installed several cost containment measures. All hospitalizations as well as expensive diagnostic services require prior authorization. The HMOs employ gatekeepers that monitor all hospitalizations of tie-up members at affiliated facilities. Although outpatient services are free, similar to Medicare, copayments are required for inpatient care. Network providers received lower fees from the HMO for tie-up patients than for regular HMO enrollees. Balance billing is prohibited. The higher volume may compensate providers for the lower fees.

The tie-up is profitable for the two HMOs participating in the program. This relates to low utilization rates which in turn results from effective controls, a young and relatively healthy membership, and reverting of catastrophic cases to the regular Medicare scheme.
6.0 SYNTHESIS OF DEVELOPING COUNTRY EXPERIENCE

Based on the experience of 15 health insurance schemes, this chapter consists of a comparative analysis of lessons learned regarding three major social financing issues: (1) how health insurance has been used to expand coverage, (2) what types of private-public collaborative models have emerged, and (3) how these schemes have dealt with economic problems inherent in health insurance (i.e., adverse selection, moral hazard, cost escalation, and equity).

6.1 COVERAGE

What determines whether an individual is covered through health insurance? It is clear from the case studies (and other research) that economic activity and group membership are the major determinants of insurance coverage. More specifically, belonging to a relatively large employment group, participating in the urban-based formal economy, and receiving full-time wages are the key prerequisites for enrollment, particularly for the social insurance schemes. (This statement holds for many developed countries as well.) These factors facilitate risk pool formation and premia collection. In many developing countries, government—usually through a parastatal agency—is the major actor in organizing, regulating, and administering health insurance schemes for these groups.

What determines whether previously unprotected or poorly protected populations acquire first-time insurance coverage or better benefits? What strategies are used to expand coverage? The case studies demonstrate that extension efforts incorporate one or more of the following strategies: (1) merging institutional health service systems or annexing groups to large, parastatal statutory insurers, usually with significant government subsidy (Mexico, Panama, Costa Rica, Ecuador); (2) establishing close ties between communities and public providers in rural settings (Zaire, Guinea Bissau, Thailand); (3) creating affordable mechanisms to finance and provide health services through innovative public-private arrangements (Dominican Republic, Philippines [HMO tie-up]); and (4) rearranging and streamlining the organizational and financial elements of pre-existing statutory and non-statutory schemes (Chile, Korea, China, and Uruguay). The following is a discussion of selected examples derived from the case studies.

Subsidized Extension of Statutory Insurance: With varying degrees of success, statutory health insurance has been extended to previously excluded populations in Mexico, Ecuador, Panama, and Costa Rica. The former three countries focused on the incorporation of rural groups. Mexico and Ecuador created parallel health delivery systems with limited linkages to mainstream social insurance regimen while Panama and Costa Rica essentially incorporated the unaffiliated populations into the social security health service system. The two latter countries have achieved nearly universal coverage, but at probably unaffordable costs to the social insurance system. (In Panama, nearly universal coverage has been reached in the integrated regions only.) In contrast, Mexico and Ecuador show significant gains in coverage (particularly in the case of Mexico), but at a much lower cost. However, both these countries are far from universal coverage.
In all four countries, coverage extension was dependent on heavy subsidies from regular social security, government, or both. The integration efforts of Panama and Costa Rica are probably the most difficult to replicate because these initiatives were closely tied to a particular historical moment and occurred during a period of economic expansion. With the reduction of the subsidy, in part because of economic contraction, these systems were unable to sustain the high-technology and curative-based delivery model on which extension was based. In addition, integration efforts in both countries appear to have adopted the deficiencies and inefficiencies evident in the regular social security and health ministry direct delivery systems: chaotic medical care organization, low productivity, depersonalized attention, and politicized decision making. Services are increasingly rationed by queues, stock-outs, and patients' ability to pay under-the-table fees or visit the private clinics of government or social security-contracted physicians. In an attempt at improving quality, increasing efficiency, and containing cost escalation, Costa Rica currently is experimenting with alternative provider payment systems.

Both the Ecuadorian and Mexican social insurance extension programs present better opportunities for replication, especially for governments seeking to provide basic services to rural populations. Although inefficiencies exist, these schemes feature lower-cost services that are accessible to and address the health needs of rural populations. Since these schemes are financed wholly or in part by contributions of higher-income urban enrollees of regular social security, they represent good examples of risk-sharing based on the social solidarity principal. Nevertheless, although the low income of many of the beneficiaries may require some degree of subsidization, excessive financial dependency on the state and social security is problematic. This is particularly the case for schemes that derive income from the state. Governments of developing countries are notorious for their irregular payments to the social insurance schemes both as employer and contributor. How to tap alternative sources of financing is an emerging issue. For example, to decrease its financial dependency on the nearly bankrupt social security system, Ecuador's SSC is exploring the feasibility of raising premiums paid by beneficiaries and affiliating agro-industrial enterprises and cooperatives.

**Linkages Between Rural Communities and Public Sector Providers:** In Zaire, Thailand, and Guinea Bissau, budgetary shortfalls resulted in the search for alternative sources of finance to sustain the provision of public services. Innovative risk-sharing and community financing initiatives emerged in each country. Their emergence appears to be situational in the sense that the schemes have adapted practical and flexible designs that respond to recognized problems, draw on cultural values and community or individual preferences, and build upon the organizational and institutional capacity of the public health service system.

Prior to the launching of the insurance scheme in the Bwmanda Health Zone in Zaire, high user fees had discouraged access to government health services, which in turn reduced their revenues. Designed as an alternative to user
fees, the scheme has enabled public hospitals to recover a significant proportion of costs as well as to improve access. In Guinea Bissau, villagers rejected user fees and opted for the establishment of funds that partially cover the cost of medicines supplied to village-based health posts. Conversely, the Thailand health card experience has been less successful. After an initial surge of enrollment, coverage decreased. Free care or nominal charges at government facilities may discourage the purchase of the cards.

Taken together, other more operational factors also may contribute to the performance and sustainability of rural risk-sharing and community financing schemes: (1) the premia are affordable, and collection corresponds to periods when money is available (usually around harvest time); (2) quality improvements that are promised, are delivered; (3) the scheme draws on traditional risk-sharing mechanisms; (4) the existence of adequate infrastructure and provider network prior to implementation; and (5) the launching of a marketing campaign to inform consumers and communities concerning the scheme.

**Innovative Public-Private Collaboration:** In the Dominican Republic and the Philippines, benefits and population coverage were extended through establishing links between HMOs and government-affiliated financing institutions. In the Dominican Republic, schoolteachers rejected coverage through the country's social security system, preferring private provision of services even though it meant less benefits, restricted choice of providers, and higher out-of-pocket expenditures. Through a collaborative arrangement, the teachers and government created an HMO-like insurance mechanism that channeled enrollees to affiliated private providers. This arrangement has resulted in higher quality services at lower costs to the government than social security affiliation.

The Philippine statutory social insurance system, Medicare, successfully extended benefits to include outpatient services by contracting HMOs to deliver care (and assume some of the financial risk). Despite the limited choice of providers, demand for enrollment is high in the experimental tie-up program. This relates in part to the perceived high quality of services, additional benefits, and perhaps more importantly, reduced copayments. Both Medicare and tie-up members pay the same contribution rates. Medicare currently is exploring how to extend population coverage through the establishing more linkages with HMOs.

**Systemwide Reconfiguration:** During the 1980s, Korea, Chile, and China reorganized their respective health sectors, reforming the major institutional actors together with the supporting cast of financial and service delivery mechanisms. Korea and Chile have been relatively successful while China appears to have lost ground in their quest for universal coverage.

Korea's state-mandated coverage design is an attempt at reducing the inequities of a former free market approach while conserving the system's overall private and decentralized features. Through mandating minimum
benefits levels, obligatory enrollment, and self-financing during a 15-year period, the government has aimed for universal coverage through a variety of schemes. These include: sickness funds for industrial workers, special schemes for civil servants and teachers, and urban and rural-based risk pools for the self-employed. Government subsidies are directed to the destitute and medically indigent, and to a lesser extent, to low-income, self-employed groups in rural areas.

Chile had nearly obtained universal coverage before the government restructured the financing and provision of health services and dismantled the former parastatal social insurance institutions. The government has promoted a competitive market place of private providers linked to both private and public insurers. Three levels of coverage can be distinguished. The first is an HMO-based insurance systems that covers middle and upper-income groups and is completely privatized. The second is a voucher-based system involving private provision by selected providers and directed at middle and lower-middle income wage earners. Despite minimum government interference, some government subsidies persist. Most government financing is directed to the third level, which targets lower-income groups through a direct delivery system. In theory, the self-financing or near self-financing of the upper levels has permitted the government to target public resources to improve access to health care for uninsured low-income groups.

As a result of the upheaval caused by economic reforms and the breakdown of the collective-based production system, population coverage through insurance has decreased significantly in China. No private or social insurance system has yet to emerge to fill the coverage gap left by the dismantling of the Rural Cooperative Insurance system. The latter was a prepaid medical plan designed to cover low-cost, basic health services accessible to low-income peasants affiliated with production brigades. Unless the newly uninsured become contract laborers for private and public enterprises affiliated with a private insurance plan or voluntarily enroll in county-based plans, they face high out-of-pocket payments at both public and private facilities. Coverage for the indigent and poor may be nonexistent.

6.2 SOURCES OF FINANCING

Financing of insurance schemes takes on two major forms: taxes and individual (or group) contributions. Taxes can consist of mandatory payroll-based contributions and general tax revenues while individual contributions usually include voluntary premiums. Point of service cash payment by patients can be significant for both voluntary and statutory schemes, even for covered benefits. Exhibit 6-1 lists the principal sources of finance for most schemes examined in the case studies.

Identifying discernible patterns is a difficult task. Most health insurance systems have some mix of public and private financing. Risk sharing through the tax system is the most common financial mechanism, especially for statutory social insurance. But out-of-pocket cost sharing, usually through copayments, is significant for statutory schemes in Korea, Kenya, and the Philippines. In contrast, Latin American and Chinese statutory schemes do not require copayments.
Most systems are financed through a combination of mechanisms. This is especially evident in the Korean and Chilean cases where government subsidies are combined with payroll taxes and significant cost-sharing. Three of the four HMO-based plans are financed in part through voluntary prepaid premiums (IAMCs, ISAPREs, and SEMMA). Individual premiums are also major sources of financing for the rural health insurance schemes in Thailand, Zaire, and Guinea Bissau. Interestingly, the Zaire scheme receives no tax-based financing though most care is provided by government providers. The Health Care Funds in Thailand receive only start-up financing from the government. In Guinea Bissau, over two-thirds of the costs of services provided through the Abota community finance schemes are paid by the government.

As suggested, a large number of schemes require significant out-of-pocket payments, particularly for enrollees that desire private providers. This may suggest a willingness to pay for this arrangement. For statutory schemes, copayments for inpatient services average 63 percent in Korea (average for all schemes), 31 to 50 percent in Chile (FONASA), and 52 to 72 percent in the Philippines (Medicare). Copayments for Kenya's NHIF are also significant. Private voluntary plans such as SEMMA in the Dominican Republic require a 50 percent copayment for non-routine diagnostic tests and "complex" surgeries.

Although extension efforts through existing statutory social insurance integrate health financing into the social security taxation system, these schemes also benefit from significant state subsidies. The subsidies are aimed at financing coverage extension for non-contributing beneficiaries, mostly in rural areas. Contributions by rural inhabitants and low-income beneficiaries in Mexico, Ecuador, Panama, and Costa Rica are nominal. Designers assumed that potential beneficiaries were either unable or unwilling to contribute to the scheme's financing. At the same time, they considered any contribution or cash payment contrary to the major purpose of the scheme, which was to encourage access by poor and underserved subpopulations.

Governments in Panama, Costa Rica, and Ecuador are generally slow to contribute their statutory contribution to social security institutions. It appears that the financial burden falls heavily on the employer and employee contributions to the standard regimen. More specifically, since the regular social security health programs incur chronic operational deficits, the workers' pension reserves probably represent the major source of financing of the extension efforts in these countries.

### 6.3 Who Finances and Who Provides: The Public–Private Mix

As shown in Exhibit 6-2, the schemes represented in the case studies display considerable public-private linkage in terms of financing and service provision. Public provision dominates rural risk-sharing and social insurance extension schemes (quadrants III and IV of Exhibit 2). As mentioned, rural insurance in Zaire, Thailand, and Guinea Bissau were established in part to contribute to the financing of government health services. IMSS-COPLAMAR (Mexico) and SSC (Ecuador) extend health services to dispersed rural communities through creating direct delivery systems. According to scheme planners, access to private (and public) providers in these areas is limited.
Since several schemes have more than one major source of financing, they are placed in two or more quadrants (e.g., FONASA, ISAPREs, IAMCs, Occupational and Regional Insurance schemes in Korea). FONASA is financed through general subsidies, a payroll tax, and a voucher mechanism (cost-sharing), while affiliates are free to choose between public and private providers. Finally, the private sector provides health care to affiliates of statutory social insurance schemes in Uruguay, Korea, Chile, Philippines, and Kenya. Although out-of-pocket cost sharing may be considerable, private provision is preferred by the affiliates. This public-private model contrasts with the direct delivery social insurance systems of Panama and Costa Rica, where cost sharing is nominal or non-existent, but quality is perceived as low. Moreover, services are rationed through queues, and access to non-emergency inpatient services is often by way of physicians' private clinics.
## PRINCIPAL SOURCES OF FINANCING IN HEALTH INSURANCE SYSTEM

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<th>Scheme</th>
<th>Tax System</th>
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<td>Statutory</td>
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<td>HEALTH CARE FUNDS/THAILAND</td>
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<td>VILLAGE INSUR./GUINEA BISSAU</td>
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<td>INTEGRATION/COSTA RICA³</td>
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<td>MEDICARE-HMO TIE-UP/PHIL.</td>
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¹For social insurance extension schemes (Panama, Costa Rica, Ecuador, Mexico) refer to transfers from regular social security to extension program.

²Greater than 25 percent cost sharing.

³Government contribution to the scheme is paid irregularly.
### EXHIBIT 6-2
THE PUBLIC-PRIVATE MIX: FINANCING AND PROVISION
IN SELECTED SCHEMES

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<th>SOURCE OF FINANCING AND PROVISION</th>
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<th>SOURCE OF PROVISION</th>
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<td>HEALTH ZONES/ZAIRE</td>
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### 6.4 ADVERSE SELECTION

The schemes under study here use six principal mechanisms to reduce the insurer's risk of exposure due to adverse selection. These often are employed in combination:

- **Minimum number or proportion criteria**: Rural-based schemes use a variety of mechanisms to ensure that the risk pool is of sufficient size and characteristic of the general population. SSC/Ecuador requires that 1,000 persons comprising at least half the households within a defined geographical area enroll. In Zaire, the Bwamanda Health Zone does not permit individual membership. Rather, all members of a household must enroll if a single member desires affiliation. In Guinea Bissau, user fees were raised at village health posts to encourage affiliation with the village insurance schemes. In contrast, lower user fees at public facilities in Thailand discourages younger and healthier individuals to enroll in health card funds.

- **Streamlining benefits and reducing choice**: As discussed in Section 1.0, several schemes offer a more restricted package of health services than covered in mainstream plans or schemes. SSC and IMSS-COPLAMAR limit benefits to mainly primary care services provided by low-cost personnel. Benefits are restricted for SEMMA (Dominican Republic) affiliates and they can select only one provider. Provider choice also is restricted for enrollees of HMO-linked schemes such as ISAPREs, IAMCs, and Medicare HMO tie-up.
▲ Specified waiting periods: New SEMMA affiliates must wait one month before utilizing providers. New affiliates to SSC are denied referral to higher-level social security services during the first six months after enrollment.

▲ Compulsory participation: This is the standard social insurance approach which spreads risk among large population groups according to occupation, residence, economic activity, etc. For example, Korea has mandated obligatory participation for the self-employed in urban and rural areas. All workers employed by private firms in Uruguay are obligated to enroll in an IAMC.

▲ Risk-rating: Some ISAPREs (Chile) and IAMCs (Uruguay) screen potential enrollees, selecting the younger and healthier. The ISAPREs make wide use of actuarial tables. Lower-income and less healthy individuals enroll in the less-endowed FONASA system. In Korea, risk-selection by geographical location may occur. Insurance societies whose subscribers are low-income earners or reside in low-income areas tend to enroll a higher proportion of unhealthy members. The HMOs linked to the Philippine Medicare also target large firms with younger and healthier populations.

6.5 MORAL HAZARD AND COST ESCALATION

Insurance creates moral hazard for both the supply and demand of health services. That is, there is a tendency for the insured to demand more services than they would without such coverage, and under certain payment systems, providers have incentives to produce more services than is medically necessary. As discussed in Chapter 3, part of problem lies in the lack of relationship between benefits and costs and between payer and supplier. Because the insured do not pay directly for the full cost of care, insurance coverage provides an incentive to use more services and more expensive providers. Unlike other types of markets, the health marketplace is not price-driven: providers (e.g., physicians) act as agents for suppliers and insurers pick up most or part of the bill. Medical expenses are compounded when insurers provide incentives to physicians and hospitals to maximize their income through augmenting the volume of services rendered to affiliates.

Ultimately, of course, there is no free lunch. The individual consumer or society pays the cost through higher premiums, taxes, or out-of-pocket spending. In sum, in a health market dominated by health insurance, prices do not reflect the value that consumers place on the services demanded. Consumers and insurers often apply little pressure on providers to produce efficiently. For example, physicians often can increase income, or similarly develop more business, by using more inputs rather than less. The lack of correspondence between a price system and market organization creates the conditions for cost escalation.

Economists increasingly focus on how incentive systems are structured by finance and payment measures. The key policy question relates to how institutional features of health insurance schemes affect both the demand and supply of health care in terms of accelerating or containing costs, or improving or reducing quality. How to grapple with the cost implications of these incentives is a major
challenge facing insurers everywhere. As the discussion of the U.S. experience
demonstrates, the task is enormously difficult. Assessing the impact of incentives
on the performance of the health insurance schemes described in this report is
difficult to determine from the information provided. But both beneficial and
perverse effects are evident.

Data from a number of case studies demonstrate that per capita utilization by
insured persons dwarfs that of the uninsured. In Zaire, enrollees of Health Zone
Insurance plans are two to seven times more likely to use a hospital than non-
affiliates. Health card holders in Thailand tend to make greater use of health
services at all levels than non-holders. Affiliates of one Uruguayan IAMC average
four times more physician contacts than uninsured using health ministry
facilities. Prolonged hospital stays as well as unnecessary admissions by NHIF and
Medicare affiliates are commonplace. It is important to note that the increase in
utilization, especially by low-income subpopulations, may be desirable from a
public health standpoint.

Similar to the U.S. experience, fee-for-service reimbursement systems in LDC
schemes appear to generate increases in the volume and range of services provided
as well as encourage the use of high technology interventions. In Korea, since the
introduction of insurance, health spending has soared to double the inflation rate.
Wide-spread insurance coverage has stimulated the supply of expensive high
technological services and doubled outpatient utilization (hospital admissions
increased by two-thirds). In China, the government-determined fee reimbursement
system encourages hospitals to acquire high technology, usually at public expense.
The fee-for-service reimbursement system of the Philippine Medicare system
provides incentives for enrollees to use more expensive tertiary care facilities.

Contrary to conventional wisdom, the experiences of Costa Rica and Panama
demonstrate that direct delivery systems with salaried personnel do not control
costs. They also may provide services that are perceived to be lower quality than
indirect, fee-for-service schemes. Because of poor medical care organization,
politicized decision making, and lack of managerial autonomy, a sort of reverse
moral hazard exists to underprovide services. The systems are characterized by the
apparently paradoxical situation of oversupply of personnel coupled with
undersupply of services. Demand is controlled through queues, absenteeism, work-
shirking, and stock-outs. The lower productivity raises unit costs.

What are the institutional features evident in insurance schemes of
developing countries that aim to control costs? Exhibit 6-3 inventories the major
cost containment methods emerging from the case studies. (It is important to note
that the case studies did not provide complete information on the range of cost-
containment measures used by each scheme.) Benefit limits, use of low-cost
providers, and copayments are the most common mechanisms.

Benefit limits can include restrictions on both the type and volume of
services covered. In many cases, these products are attractive because potential
beneficiaries have few alternatives. For example, the African rural insurance and
community financing schemes cover primary care services, and to a lesser extent,
secondary hospital care (Zaire). These schemes channel patients to relatively
inexpensive providers: village health workers, nurse auxiliaries, and general
practitioners. Other schemes have turned to products that limit their exposure to
high medical expenditures by potential affiliates. They have developed low-cost, non-comprehensive benefit packages aimed at meeting the basic health care needs of previously uninsured populations. (A third mechanism used in product design is high cost-sharing. This is evident in Korea, Chile [FONASA], Philippines, Kenya, and the Dominican Republic.) Statutory social insurance institutes in Mexico and Ecuador extended primary and preventive care to distant rural areas at a fraction of the cost of standard social security coverage provided to contributing insured in urban areas. This latter group is covered by a much more comprehensive benefit package.

The HMO-linked schemes in the Dominican Republic and the Philippines also offer a reduced package of services and limited choice of providers in comparison to mainstream plans sold to groups enrolled in regular plans or covered under social security (Dominican Republic). Clients consider the coverage adequate, affordable, and of sufficient quality when compared to the alternatives. Other HMO-based plans (IAMCs in Uruguay and ISAPREs in Chile) also place restrictions on choice of provider.

Access to higher level providers can be severely restricted. Most schemes in Korea place limits on bed-days. Also, the first physician contact per illness episode is not covered. SEMMA also places utilization ceilings on bed-days (five per admission). Medicare and NHIF cover only a limited range of inpatient services.

As mentioned earlier, copayments are quite large (over 50 percent) for a number of schemes (e.g., NHIF, Medicare, FONASA, SEMMA, and Occupational and Regional Insurance systems [Korea]), and probably affect unnecessary demand. At the same time, they may counteract provider-induced demand resulting from the fee-for-service provider payment mechanism used by these schemes. One exception is Korea. Despite significant copayments utilization, costs are escalating rapidly. This suggests that cost-inducing incentives related to the fee-for-service reimbursement system may negate any cost-reducing incentives derived from the high copayments.
### EXHIBIT 6-3
**PRINCIPAL COST-CONTAINMENT MECHANISMS USED BY HEALTH INSURANCE SCHEMES**

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<th>SCHEME</th>
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<td>BENEFIT LIMITS</td>
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<td>MEDICARE TIE-UP/PHIL.</td>
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1Capitation or per case payment mechanism.
2Among providers and/or insurers.
3At least 25 percent cost-sharing.
4Prior authorization, second opinion surgery, utilization review, etc.
5Access to higher level services of regular social security program is restricted.
FONASA is a unique system because affiliates choose the level of copayment they prefer to pay while providers select the fee level they desire to charge. However, copayments can be substantial, ranging from 40 to 50 percent for outpatient care and 31 to 50 percent for other types of services. Even enrollees of Health Zone insurance plans in rural Zaire (Bwamanda) are required to pay a 25 percent copayment. Taken together, the schemes with high copayments appear to receive satisfactory marks from a large number of affiliates. This may result from two factors: (1) members never have experienced more generous coverage, and (2) the quality of service provision is perceived as good, particularly when compared to alternatives (if any). Whether the high copayment deters access among at risk and lower-income populations is difficult to ascertain from the available data.

Supply side incentives that encourage providers to restrict the service volume have been implemented by the HMO-linked schemes of the sample SEMMA, IAMCs, and HMOs participating in the Medicare tie-up program, ISAPREs. In all cases, the insurer capitulates an organization (HMO, hospital, or network of providers) to provide a predetermined package of benefits to members. These organizations are responsible for providing these services while guarding their bottom line.

Since the HMOs are at risk of financial loss (if costs are higher than anticipated), they limit their exposure through a number of mechanisms aimed at improving the efficiency of service delivery of their affiliated providers. These measures usually seek to reduce unnecessary admissions, tests, and lengths of stay. They include: establishing utilization controls (second opinion surgery, prior authorization), demanding discounted charges from contracted providers (in exchange for volume), using low-cost gatekeepers (general practitioners) that screen affiliates when referred to more expensive services, performing on-site case review by medical supervisors, and requiring point-of-service copayments. With the possible exception of the IAMCs, the HMOs have been able to provide a quality product (or at least one that is demanded) at affordable prices for middle and some lower-middle income groups. They also turn a profit. Disadvantages of capitated systems include undercare and overreferrals, but insufficient information is available from the case studies to assess these issues.

Organized cost control measures are generally absent in direct delivery integrated systems of Panama and Costa Rica. Costs are high in part because both systems adopted the highly-curate orientation and numerous inefficiencies inherent in the regular social security system.

Administrative costs, as a percent of total expenditures, are alarmingly high for many schemes, generally double the rate observed in developed countries. Social insurance systems have not used the advantage of large risk-pool volume to lower administrative expenses. Administrative costs average 13 to 20 percent in Korea, 20 percent in Costa Rica, and 10 to 20 percent in Mexico. Contrarily, Medicare and NHIF probably need to invest more in administration to speed up claims processing and reduce fraudulent claims.
6.6 **EQUITY**

Equity can be examined from three standpoints: financing, population and geographical coverage, and benefits. We first turn to the financing of statutory social insurance schemes in the sample.

**Financing**

Compulsory insurance mechanisms are financed through a combination of payroll taxes, subsidies, and copayments. (There is considerable debate over the structure of the social security tax system and the burden it imposes on the economy and labor markets. See McGreevy [1990] and Wilson [1985] for a review of these issues.) Although the healthy subsidize the sick, not all are based on the concept of social solidarity, and regressivity and vertical inequity are evident.

Some schemes display regressive features in the sense that lower-income members may bear relatively greater financial burden than higher-income enrollees. For example, the Philippine Medicare systems retains a contribution ceiling for taxable earnings. Those above the ceiling are exempt from tax and the tax is regressive. Below the ceiling, the tax is proportional to earnings.

Vertical inequities are also evident. For example, some schemes in Korea and China are financed out of general tax revenues but provide benefits to a relatively privileged subpopulation (e.g., civil servants). Through the tax system, lower-income populations indirectly pay for the scheme but reap no benefits. Chile's ISAPREs and FONASA are financed in part through a seven percent payroll tax. But higher income groups tend to enroll in the ISAPREs where the full value of their deduction is directed. This eliminates the social solidarity element of the tax-based financing mechanism. For example, 70 percent of total payroll tax revenues (ISAPRE and FONASA) are directed to the ISAPREs which have less membership than FONASA.

Schemes requiring significant cost-sharing (see Exhibit 3-1) are inequitable in the sense that out-of-pocket payments are not linked to income. However, in some cases members are free to choose lower-cost providers. FONASA enrollees can select three levels of care, each featuring a different copayment level. Copayments are not set according to income, rather as a percent of a standard per service charge collected by providers. However, since most providers are registered in the highest charge category, selection options are limited. Lower-income affiliates pay proportionately more of their income for health services.

Three schemes display progressive financing features. The state's contribution to Mexico's COPLAMAR is used to extend coverage to one the poorest segments of that country's population. A recent financing reform of Kenya's NHIF created income-related categories to determine the contribution rate. Premia for the Occupational and Regional Insurance Systems in Korea probably are linked to income. Within each insurance society, affiliates who earn more pay proportionately higher premiums.

Based on social solidarity principles, SSC, IMSS-COPLAMAR, and the integrated systems in Panama and Costa Rica probably are the most distributive. The contributing insured, urban salaried workers and their employers, together with
government subsidies, finance coverage extension to the rural poor and other low-income groups. These latter beneficiaries usually do not contribute to the schemes' financing except via the general tax system. Nevertheless, the contributing insured generally are heavier users of health services and consume a disproportionate amount of resources.

**Coverage and Benefits**

Coverage extension efforts have directed resources to population groups (e.g., traditional farmers, self-employed, etc.) and geographical areas (e.g., rural areas) that traditionally have been excluded from insurance schemes. Moreover, prior to affiliation, these groups generally had little access to organized health care. As a result of the expansion of health insurance, inequities in coverage and access among populations and regions have decreased considerably. This is particularly evident in Mexico, Panama, Uruguay, Chile, Costa Rica, Korea, and China. The governments of Kenya and the Philippines currently are studying proposals to expand population coverage of the NHIF and Medicare schemes respectively.

Extending coverage may require fashioning lower-cost delivery models, or similarly, designing products that provide less generous but essential services to people or societies that cannot afford comprehensive care for all. Even with large government subsidies, the prospects of extending coverage through insurance are limited unless controls on the demand for and supply of services are built into the scheme. Such controls generally are absent in the integration experiments of Panama and Costa Rica; two examples of unaffordable extension efforts. On the other hand, setting premia or copayments at levels beyond the means of potential affiliates may reduce the prospects of coverage extension (NHIF, Medicare, and ISAPREs are examples).

Finding a middle ground that combines streamlined benefits with controls on prices and utilization and is affordable to a greater number of people is the major health insurance challenge. This already formidable task is made more difficult when incomes are low and the citizenry expects some form of highly-subsidized comprehensive coverage. Expectations are often conditioned by paternalistic state policies that mandate (but often do not deliver) comprehensive services for all.

Finally, restricting benefits begs another question: What is the minimum level of services insurance schemes should cover? Clearly, there is no single answer to this question. SSC and IMSS-COPLAMAR defined essential as basic primary medical and preventive services. These schemes extended these services to rural populations where few alternatives exist. Political leaders in Panama and Costa Rica sought to eliminate stratified access. All residents in these "integrated" systems are covered for generally the same comprehensive package of services. The governments in Korea and Uruguay have delineated a minimum package of services which all insurers must cover. The Chilean reformers decreed that consumers should decide what level of care they desire as well as the price they are willing to pay. Dominican teachers rejected incorporation into their country's social security system and opted for significant cost-sharing combined with limited benefits. To the teachers, quality care provided in private facilities was a priority. In the Philippines and Kenya, limited catastrophic care was determined to be the most appropriate and affordable services to cover through insurance.
This proposal provides background information as well as the goals, objectives, methods, and resource requirements for a planned and ongoing major applied research project in Niger in the area of Social Financing, one of nine major applied research (MAR) topics identified by the HFS project in its applied research agenda (see HFS Applied Research Agenda, April 1992).

In Niger, HFS is assisting the government to carry out and evaluate a major social experiment in cost recovery. User fees have been adopted in one district of the country and a head tax in another to pay for better quality of care in the form of improved drug availability in government health facilities. A third district, where no intervention takes place, is included as a control site. Evaluation of the tests involves assessing how the two systems fare in absolute terms, relative to each other, and relative to the status quo (the control site) in terms of revenue generation, quality of care, financial accessibility or equity of access, and management costs and burden. This question will be addressed through analysis of primary data collected by HFS from households and facilities, and from additional interviews and observation of providers.

7.1 BACKGROUND ON THE COST RECOVERY PILOT TESTS

The Niger pilot tests are a social experiment in health care financing that offer a rare opportunity to conduct applied research in the HFS MAR areas of Social Financing and Quality of Care.

Nigerien policymakers need to know how the two cost recovery systems tested (see below) fare relative to each other and relative to the status quo (free out-of-pocket care, shortages of drugs and other medical supplies). Performance assessment requires study of several performance indicators, including:

- Revenue generation
- Quality of care
- Financial accessibility or equity of access
- Management costs and burden

Discussions about the advantages and disadvantages of cost recovery for ambulatory care in Niger were sponsored by the Government of Niger and its Ministry of Health (MOH) in the late 1980s and early 1990s with technical input from the Niger Health Sector Support Grant (NHSS). At a seminar held in Kollo in 1991, it was decided that while cost recovery appeared to be a promising solution to the government's budget constraints for health, much needed to be known about the effects of financing reform on access to care, revenue-generating potential, quality of care, administrative feasibility, and other aspects of health system performance. The pilot tests were proposed as a first step prior to possible country-wide reform.

An external evaluation of the NHSS in 1992 recommended that most of the responsibility for providing the technical assistance and research necessary to implement and assess the performance of the tests should be transferred from the
NHSS to HFS. Up until then, the planning of the tests had been the responsibility of NHSS and its supervisory MOH agency, the Directory of Studies and Planning (DEP). In late 1992, the applied research (AR), as well as some of the technical assistance (TA) aspects of the tests were passed on to HFS through a half-a-million-dollar mission buy-in. By the time the buy-in was signed, much of the preparatory and design work for the tests had been performed by NHSS and DEP staff. The work included developing the research design, budget, and timeframe; developing management information systems for cash and drugs; training facility personnel in the use of those systems; training facility medical personnel in standard diagnostic and treatment protocols; and determining fees and taxes necessary to permit self-financing of drugs (see Ministere de la Sante Publique, Republique du Niger 1989, 1992, and 1992-93).

HFS's current involvement is in the form of a Long-Term Health Economics and Financing Advisor, Francois Diop, who has been in Niamey since October of 1992. The project is also required to provide the administrative and backstopping support to this advisor as well as the human resources necessary to gather and analyze data on the tests' performance and to disseminate results. The participation of HFS in the tests under the buy-in will end in June of 1994. HFS is presently in the process of narrowing the research design, making detailed budget projections, and securing the funds necessary to pay for the TA and AR costs of the tests not covered by the mission buy-in.

The tests involve about 20 MOH ambulatory facilities in three districts of the country. One district (Boboye, in the department of Dosso) has adopted a head tax combined with a small copayment per illness episode; another (Say, in the department of Tillabery) has adopted a fee-per-episode cost recovery system; the third district (Illela, in the department of Tahoua) is a control setting where cost recovery is not adopted. Cost recovery is for curative care only and is expected to cover part of the cost of pharmaceutical products.

Tax facilities draw revenue from both annual premium payment by households and copayment by patients; fee-per-episode facilities draw revenue exclusively from out-of-pocket patient fee payments. Several calculations were performed by Willis (1992) to estimate the levels of fees, copayments, and taxes required to pay for the anticipated cost of drugs consumed. This exercise predicted that the fees and taxes actually adopted by the test facilities, and recommended at the Kollo seminar, were too low to permit full cost recovery for drugs.

The Government of Niger is expected to maintain its current levels of subsidization to the test facilities, including the payment of personnel salaries. Start-up inventories of pharmaceutical products were to be distributed to test health facilities in early May of 1993 and were financed through a grant from the World Bank. Since the fees and taxes adopted in the test zones were below the levels required to permit full recovery of drug costs, a recurrent subsidy will be required to fully replenish the facilities' drug inventories during the one-year test. The World Bank is also expected to provide the funding for this.

Household surveys were to be conducted before the introduction of cost recovery and, again, a year later to assess any demand and utilization changes. The baseline household survey was conducted in October and November 1992 and
preliminary descriptive results were made available (Diop, 1993). The follow-up survey was to take place in late 1993. Due to delays in the start-up of the tests, the baseline survey took place six months—and not immediately—before cost recovery started. Due to time constraints, this delay meant that the follow-up survey will have to take place six months—and not one full year—after cost recovery began. The financial and technical performance of MOH health facilities in the three districts will also be monitored through bi-monthly facility surveys. HFS is currently completing the design and testing of the facility data collection instruments. Additional data collection efforts include exit interviews of patients in selected facilities and interviews of health facility personnel and health committee members. Exhibit 7-1 presents a chronology of activities involving the two test and the control districts.

**EXHIBIT 7-1**
**CHRONOLOGY OF ACTIVITIES IN NIGER**

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>APPROXIMATE DATES</th>
<th>BOBOYE (Tax With Copayment)</th>
<th>SAY (Fee Per Episode)</th>
<th>ILLELA (Control)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Collection</td>
<td>Early 1991</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setup of Management Information Systems</td>
<td>Jun-Dec 1992</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training in Diagnostic and Treatment Protocols</td>
<td>Jun-Dec 1992</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Household Survey</td>
<td>Oct-Nov 1992</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug Distribution and Introduction of Cost Recovery</td>
<td>May 1993</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bi-Monthly Facility Supervision and Data Collection</td>
<td>Aug 1993 to Jun 1994</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Data Collection from Facilities</td>
<td>Sep 1993 to Jun 1994</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow-Up Household Survey</td>
<td>Oct-Nov 1993</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**7.2 RESEARCH QUESTIONS**

The district of Boboye has adopted a tax system for the financing of pharmaceutical costs. This earmarked tax was collected in 1991 along with the other local taxes collected annually at the district level. The health tax is a flat, compulsory amount payable by all tax-paying, eligible adult household members. Given the fact that all individuals in the district are entitled to the health benefits of this tax, this tax serves as a social financing mechanism.

This section lists research questions to be tackled in the study. The next section presents the research methods required for each question.

1. How does the quantity of curative ambulatory care demanded from government and other providers change when cost recovery in the form of a health tax and a copayment is implemented, along with an improvement in the technical quality of care (improved drug availability)?
2. Are travel costs sufficiently important to result in inequities under this system? More specifically, do those living farther away from the facilities benefit less from health care services (and thus from the returns of the health tax) due to their higher time and travel costs, and therefore their lower propensity to demand care?

3. Is there evidence of moral hazard among those in the district with insurance? More precisely, do those living in the tax district (who face a lower out-of-pocket cost of care [copayment]) demand more care on a per capita basis than those living in the fee-per-episode district, controlling for all other factors affecting demand? If this is so, how large is the effect? An associated question is: How would changes in the copayment affect the demand for care among those in the tax district?

4. When controlling for all other observable factors affecting demand, are there differences among the insured in per capita demand among population groups, such as those in different income, gender, education, or age groups?

5. Are there any apparent differences in the health status of the people living in the tax district relative to the fee-per-episode and the control districts, as a result of differences in demand for care in the three districts?

6. If insurance enrollment were voluntary, as opposed to compulsory, who would want to enroll the following year as a function of the price of the premium and the size of the copayment? This question seeks to assess the demand for health insurance.

7. Which system is preferred by the population, the tax system or the fee system?

8. Given observable demand for insurance and demand for care (and associated cost) patterns after six months of testing, what would be the feasible (premium, copayment) combinations that would permit full cost recovery for drugs, if any?

9. Who benefits and who does not under the health insurance regime? More specifically, and for different population groups, how does the combination of payments for premium and copayments compare with the actual facility cost of drugs dispensed? Are those who appear to benefit from health insurance according to this calculation the same people as those who express a willingness to enroll voluntarily in the insurance program (see question 6)? This last question would allow us in part to assess the magnitude of potential adverse selection, whereby those anticipating higher costs of care are more prone to insure themselves.

10. What can be learned about the management of the health insurance program? In particular, what are the costs associated with the management of premium and copayment collection and patient identification? How do these costs compare with the costs of a fee-per-episode regime?
7.3 RESEARCH METHODS

7.3.1 Overall Methods

Econometric estimation of demand will be at the core of the analysis of social financing. Appendix B is a detailed discussion of demand estimation. The study of health care quality and willingness to pay for improved quality will be central to this research. Quality of care will be defined by measures of drug availability using both facility-based data on frequency and duration of stockouts (from monthly records) and from household data on probability of obtaining drugs when needed. An attempt will also be made to measure quality according to provider compliance with standard diagnostic and treatment protocols. Patient perceptions of quality will be derived directly from patient exit interviews and indirectly through econometric estimation of demand. Changes in quality of care will be assessed by comparing quality levels over time and across the three districts. The willingness to pay for quality improvements will be studied through econometric estimation of demand using household data. Facility reported revenue information will also be used for this purpose. Simulations will be performed to study any differences in willingness to pay for improved quality across various socioeconomic and demographic groups. The cost of quality improvements will be derived directly from facility-reported cost information about drug consumption. Cost recovery levels will also be measured along with facility information on drug costs and revenue generated.

As noted above, at least two important changes in quality of care will take place in the test facilities of Boboye and Say: more drugs will be available to treat common health problems and, owing to diagnostic and treatment protocol training, facility medical personnel will be more able to diagnose and treat illnesses. A measure of drug availability can be derived by computing the proportion of patients who visited a government clinic and who received drugs.

As implied by Figure 2 in Appendix A, in the Boboye District the demand for care is likely to change because the tax option involves (1) an improvement in the quality of care; (2) the introduction of a modest out-of-pocket user fee (c, the copayment); and (3) a reduction in household income equivalent to the combined tax payment by all taxable household members.

Whether these combined changes will result in a net increase or decrease in quantity of health care demanded at government facilities is an empirical question. As shown in Exhibit 7-2, an increase will occur (from \(Q_0\) to \(Q_1\)) if the outward shift in demand due to the quality improvement is sufficiently large to more than offset both the inward shift in demand attributable to a lower household income and the reduction in quantity demanded associated with a higher out-of-pocket price.
EXHIBIT 7-2
EXPECTED CHANGES IN DEMAND UNDER COST RECOVERY
A comparative analysis of demand between expressions 1 and 4 in Exhibit 7-3 will indicate whether or not there was a demand change in the Boboye district as a result of cost recovery (comparison of \( Q_0 \) and \( Q \)). A comparison of expressions 4 and 5 will reveal any differences in demand between the two test districts attributable to differences in both out-of-pocket payment and household income. Exhibit 7-2 depicts a situation where quantity demanded under the fee option (\( Q_2 \)) is lower than under the tax option (\( Q_1 \)). Comparison of expressions 4 and 6 will reveal the extent of any differences in demand between the tax and the control districts (\( Q_1 \) versus \( Q_0 \)).

Comparison of expressions 2 and 5 will indicate whether or not the increase in demand due to higher quality care will be large enough to offset the drop in demand because of the establishment of \( F \), the per-episode fee. Comparative analysis of expressions 5 and 6 will help establish any differences in demand between the direct payment cost recovery option (fee, higher quality care) and the status quo (free, low quality care), respectively.

### 7.3.2 Research to Questions

(1) **How does the quantity of curative ambulatory care demanded from government and other providers change when cost recovery in the form of a health tax and a copayment is implemented, along with an improvement in the technical quality of care (improved drug availability)?**

At least two important changes in quality of care will take place in the test facilities of Boboye and Say: More drugs will be available to treat common health problems, and, owing to diagnostic and treatment protocol training, facility medical personnel will be more able to diagnose and treat illnesses. A measure of drug availability can be derived by computing the proportion of patients who visited a government clinic and who received drugs. With regard to an improvement in clinical skills, this research protocol does not anticipate that it will be possible to derive a continuous measure of ability to diagnose and prescribe.
A key concern of this analysis is the differential effect of cost recovery across different income groups. Therefore, all comparative analyses of demand will explore demand effects by income group. As is done in Diop's 1993 study, the combined population of the three districts will be broken into income quartiles to analyze demand effects by quartile.

It is important to point out that in the representation of Exhibit 7-3 and Figure 1 in Appendix B, quality of care is assumed to improve and to be equal in both test zones, owing to the World Bank recurrent subsidy during the one-year test. In the absence of such a subsidy, quality of care differ, depending on the ability of both systems to recover costs.

(2) Are travel costs sufficiently important to result in inequities under this system? More specifically, do those living farther away from the facilities benefit less from health care services (and thus from the returns of the health tax) due to their higher time and travel costs, and therefore their lower propensity to demand care?

Time costs have been shown to ration health care demand (see, for example, Dor et al., 1987). Rationing will be significant if time costs (jointly determined by travel, waiting, and consumption time and opportunity cost of time) are important relative to people's income and relative to out-of-pocket price.

Time costs therefore are of concern, irrespective of cost recovery. Efforts to improve physical accessibility should be part of any attempt to improve equity in a health system. Under the tax option, time costs introduce an element of inequity. This is the case because in Boboye the health tax is a flat amount that is independent of people's distance to the health facility. Since it is expected that people living farther away will demand less than, yet pay the same as, those living closer by, the system will be inequitable: those more distant from the facility will reap a lower return from their health tax.

To explore this effect, the population in the tax district of Boboye will be broken down into distance, or travel-time, groups (e.g., quartiles), and their demand will be explored by group. The analysis will seek to determine the reduction in tax that would be necessary to compensate those living farther away from the facility such that per capita demand is constant across time groups. This analysis is shown schematically below.

Let \( t_H \) and \( t_L \) be two extreme travel time groups, \( H \) and \( L \) denoting high and low time cost, respectively. With a flat tax, \( T \), it is expected that demand will be greater for those in the low-time cost group, other things being equal:

\[
\phi(c,q,t_H,Y-T,0) > \phi(c,q,t_L,Y-T,0) \tag{1}
\]

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The difference in propensity to demand due to the difference in time costs is \( \Delta \varphi \), where
\[
\Delta \varphi = \varphi(c, q_h^t, Y - T, O) - \varphi(c, q_h^t, Y - T, O)
\]  

(2)

The study will determine the differential, lower tax \( T_L \) which will equalize demand for both time groups:
\[
\varphi(c, q_h^t, Y - T, O) = \varphi(c, q_h^t, Y - T_L, O)
\]  

(3)

While it is unclear whether a policy of charging differential taxes according to distance groups is administratively feasible, the study will nonetheless explore this effect to point out the potential inequity under this system. Notice that the question of varying the copayment, instead of the tax, also could be explored either additionally or alternatively.

(3) **Is there evidence of moral hazard among those in the district with insurance?** More precisely, do those living in the tax district (who face a lower out-of-pocket cost of care [copayment]), demand more care on a per capita basis than those living in the fee-per-episode district, controlling for all other factors affecting demand? If this is so, how large is the effect? An associated question is: How would changes in the copayment affect the demand for care among those in the tax district?

This question can easily be explored econometrically. Assessing moral hazard reduces to an analysis of demand price elasticity. In Exhibit 7-2, moral hazard is measured by the difference between \( Q_1 \) and \( Q_3 \). Anticipating changes in demand as the copayment varies can be done through simulation once probability equations have been estimated.

(4) **When controlling for all other observable factors affecting demand, are there differences among the insured in per capita demand among population groups, such as those in different income, gender, education, or age groups?**

Using estimated probability equations, demand will be studied according to several individual and household factors affecting demand such as age, gender, health status, education, and income. It is anticipated that differences in demand across population groups will be found not only in the tax district but elsewhere as well. The descriptive analysis by Diop (1993) has already suggested important differences in health-care-seeking behavior.

(5) **Are there any apparent differences in the health status of the people living in the tax district relative to the fee-per-episode and the control districts, as a result of differences in demand for care in the three districts?**
Addressing this question is not a trivial matter. Studying $\rho_i$ involves assessing a health-care-production function with the dependent variable being dichotomous (presence or absence of illness). The study of $\rho_i$ over time (baseline --> follow-up survey) will indicate whether or not there were any appreciable changes in the propensity to report an illness. Changes can be attributed to changes in behavior (for example, changes in the quantity and quality of curative and preventive health care services consumed in the recent past) or changes in the values of the variables that affect $\rho_i$ (for example, changes in the disease vector).

(6) If insurance enrollment were voluntary, as opposed to compulsory, who would want to enroll the following year as a function of the price of the premium and the size of the copayment? This question seeks to assess the demand for health insurance.

Health insurance in Boboye was adopted as a compulsory measure. A key policy question is whether people would like to enroll in the insurance program for a second year as a function of the premium (tax) and copayment, assuming that quality of care remains constant. This question cannot be addressed through the above econometric model because, by design, the experiment did not allow for free choice of insurance.

To tackle this question, the following approach is suggested. At the time of the follow-up household survey, respondents in the tax district of Boboye should be asked the following question:

If, next year, you are given the choice between going back to the old system (free, low-quality care) or continuing with the new system (tax and copayment and improved quality) which system would you choose? Why?

The answer to this question can be viewed as a dichotomous dependent variable in a choice model with individual, household, and provider (quality of care, which may vary among facilities within the same district) characteristics as explanatory variables. Analysis of respondent choices can be done by estimating the model with either binomial logit or with binomial probit. This analysis resembles that by Weaver et al. (1993) except that in this case respondents will have experienced both systems under consideration.

(7) Which system is preferred by the population, the tax system or the fee system?

By design, it is not possible to observe individuals who have experienced both systems. Therefore, this question can only be explored through interviewing the population with hypothetical choice questions. For example, the people living in the tax district of Boboye can be asked the following additional question at the time of the follow-up household survey:

If, next year, you are given the choice between the tax system that you have experienced over the past six months (tax and copayment and improved quality)
and a system without tax but with a payment of ..... FCFA (fee in Say) for each episode of illness, which system would you prefer? Why?

Equivalently, the people in the fee district of Say can be asked:

If, next year, you are given the choice between the fee system that you have experienced over the past six months (fee per episode of illness and improved quality) and a system where you pay a fixed annual health tax of.... FCFA and a lower fee per episode of illness of .... FCFA, which system would you prefer? Why?

As with research question (6), an analysis of preferences can be made with respect to respondent characteristics. This problem, and its possible methods of analysis, resemble more closely the work by Weaver et al. (1993). Here, people are asked to choose between a system they have experienced and one they have not. The reliability of their answers is therefore more questionable. In any case, the analysis involves estimating a choice model with two options and therefore logit or probit are appropriate estimation techniques.

(8) Given observable demand for insurance and demand for care (and associated cost) patterns after six months of testing, what would be the feasible (premium, copayment) combinations that would permit full cost recovery for drugs, if any?

As already noted, Willis showed that the tax and copayment adopted in Boboye will likely be insufficient to allow full cost recovery for drugs. To assess the financial sustainability of a well-functioning tax system, it would be necessary to find out whether the population would be willing to pay a higher tax and, possibly, a higher copayment than what was charged during the tests in Boboye. Again, this question can only be assessed through interviews of the population at the time of the follow-up household survey. The question could be formulated in the following terms:

For the past six months, your district has been functioning under a new health financing system: You paid an annual tax of .... FCFA and .... FCFA at the time of consultation. Your payments helped improve the quality of care. Nevertheless, they were insufficient to cover all the costs of improved quality, and an external subsidy was necessary. Next year there will be no subsidy and, therefore, a higher tax and copayment will be necessary. Would you be willing to pay a higher tax of .... FCFA and a higher copayment of .... FCFA? Why?

The above research question can be simplified by varying the tax only or the copayment only, if it is not already too high. As done by Weaver et al. (1993), the hypothetical higher amount can be varied randomly to obtain sufficient variation and therefore to permit estimation of a demand curve.

Analysis of this question is considerably more involved than the analyses of questions (6) and (7). As in the previous two questions, there will be observations about a dichotomous choice between the existing system and a new one. In addition, there will be wide variation in the amount offered to individuals. Thus, although
people's responses will be in the form of yes or no, it will be possible to estimate how the answer varies according to the price.

(9) **Who benefits and who does not under the health insurance regime?** More specifically, and for different population groups, how does the combination of payments for premium and copayments compare with the actual facility cost of drugs dispensed? Are those who appear to benefit from health insurance according to this calculation the same people as those who express a willingness to enroll voluntarily in the insurance program (see question 6)? This last question would allow us in part to assess the magnitude of potential adverse selection, whereby those anticipating higher costs of care are more prone to insure themselves.

Study of this question requires information about health status along with responses to the questions about willingness to enroll in an insurance program formulated in question number (6). Information about illnes incidence among household members as reported in the two weeks preceding the follow-up survey, is deemed insufficient to appropriately gauge long-term health status in the household. To obtain additional information on health status and health-care-seeking behavior, the following additional questions can be included in the follow-up household survey:

- Is anybody pregnant in the household now? (Although obstetric care in not included in the cost-recovery package, curative care for illnesses arising from the pregnancy, as well as curative care for infants and children, are. Thus, households with pregnant women may be more inclined to enroll in a health insurance program.)

- How many times have you been ill over the past three months? (Extending the recall period may provide more information about long-term health status of household members.)

- What were your problems?

- In each instance, did you seek care outside the home? Where? Approximately how much did you pay?

- Do you think that you are healthier, about the same in terms of health, or less healthy than other people in your age and gender group?

- Approximately how much money have you spent on medical care over the past 12 months?

- Do you think that your household spends more, about the same amount, or less money on medical care than the average household?

Question (9) can therefore be studied by contrasting answers with reported willingness to enroll. The model to be estimated would take the following form:
where WTE denotes willingness to enroll and is a dichotomous variable and O denotes all other measurable individual, household, and provider characteristics. Again, estimation can be done with either logit or probit.

(10) **What can be learned about the management of the health insurance program?** In particular, what are the costs associated with the management of premium and copayment collection and patient identification? How do these costs compare with the costs of a fee-per-episode regime?

Facility personnel will be interviewed, and the labor costs of assessing tax eligibility of household members, of collecting the tax, and of managing the premium fund will be estimated. The cost of verifying that patients are eligible for health insurance benefits (ambulatory care at a reduced price, the copayment) will also be measured. Similar measurements will be performed in the fee-per-episode district, and comparisons of the management burden of each system will be made.

**7.4 SCHEDULE AND LEVEL OF EFFORT**

Appendix B presents a detailed Gantt chart will all AR activities associated with the evaluation of the pilot tests. Research activities dealing with quality of care are noted. Appendix C is a detailed level of effort table that matches the activities laid out in Appendix B. It is estimated that a total level of effort of 1,205 person days will be required to carry out the research on quality of care.
Central to the assessment of cost-recovery performance is the calculation of probability functions and probability figures. These probabilities will be obtained by econometric analysis of the baseline and follow-up household surveys. Using the technique of nested logit, the probability that people report an illness during the recall period, the conditional probability of seeking care, given an illness; and the conditional probability of choosing a particular provider, given that care is sought, will be computed as a function of individual, household, and provider characteristics.

The probability functions to be calculated can easily be used to derive health-care demand, as is shown below. This section defines the probabilities to be estimated as well as the estimation methods. The use of these probability functions to address some of the research questions listed in Chapter 7 is described. Additional data collection efforts and analysis methods required to assess the rest of the research questions are also described.

Figure 1 describes the possible sequence of health events faced by any individual in the three districts. Events are organized into four levels: occurrence of a health problem, care-seeking behavior within the house, decision to seek care outside the house, and choice of provider outside the house. It is assumed that the events at all four levels are, to some extent, endogenous to the individual. At the first level, the incidence of illness or the occurrence of an accident are events that are influenced, in part, by individual behavior like consumption of potable water; prior consumption of health care services, both curative and preventive; and hygiene in the household. At the second, third, and fourth levels, the decisions are clearly endogenous to the individual and/or the household members.

The econometric study of demand is interested in the probabilities of all possible events at all four levels, in the variables that affect such probabilities, in the effect that such variables have on the probabilities in time and over time, and in the values of the probabilities in time and over time.

The following notation is used in the remainder of the discussion:

- $\phi_i = \text{Probability of reporting an illness (or an injury) in the two weeks preceding the survey;}$
- $\phi_{hi} = \text{Probability of seeking care in the home conditional on reporting an illness;}$
- $\phi_s = \text{Probability of seeking care outside the home conditional on reporting an illness;}$
- $\phi_g = \text{Probability of choosing a government health center conditional on reporting an illness and conditional on seeking care outside the home;}$
\( \varphi_d \) = Probability of choosing a private pharmacy for drugs and care conditional on reporting an illness and conditional on seeking care outside the home; and

\( \varphi_{gd} \) = Probability of choosing both a government clinic and a private pharmacy for drugs and care conditional on reporting an illness and conditional on seeking care outside the home.

**Figure 1 - Health-Related Events**

Health care demand is traditionally defined as a quantity of a particular type of service that people are willing to obtain over a given period of time. Demand can be defined as an aggregate measure for all sources of care (e.g., demand for curative ambulatory care from all government and private providers) or demand from a specific type of provider (e.g., all government facilities) or, finally, from a particular provider (e.g., government clinic X).

For the purposes of our study, providers will be grouped into categories, as shown in Figure 1. Within a district, all government providers will constitute one group and all private providers of drugs will constitute a second group. The rationale for grouping providers is that within each group all providers exhibit relatively uniform characteristics, such as price, waiting time, and quality of care. These characteristics, however, vary significantly across the two groups.

The study will estimate demand for care from all providers and demand for care from the two specific groups of providers. Demand from all providers will be derived from the estimates of \( \varphi_s \), while demand from government facilities and private pharmacies will be derived from \( \varphi_g, \varphi_d, \) and \( \varphi_{gd} \).
The relationship between these probabilities and the quantity of care demanded can easily be established as follows. For the aggregate demand for care from both government health centers and private pharmacies, the quantity demanded \((Qs)\) over the two-week survey recall period is equal to:

\[
Qs = \text{POPULATION} \cdot \wp_i \cdot \wp_s
\]  \hspace{1cm} (5)

or the population, times the proportion of people with a health problem \((\wp_i)\), times the proportion of those with a problem seeking care outside the home \((\wp_s)\).

Similarly, the quantity of care demanded from government facilities \((Qg)\) is

\[
Qg = Qs \cdot (\wp_g + \wp_gd)
\]  \hspace{1cm} (6)

and the quantity demanded from private pharmacies \((Qd)\) is given by

\[
Qd = Qs \cdot (\wp_d + \wp_gd).\]

Since the relationship between quantity demanded and probabilities is direct, and because of notational expediency, the analysis that follows expresses demand as probabilities rather than as quantities.

As has been shown in other studies of health care demand (Bitran, 1989 [a] and [b] and 1990), changes in prices and quality of care affect both the probability of seeking care and the choice of provider. Thus, it is expected that under the pilot tests, both probabilities will change over time within a district. By the same token, the probabilities are likely to differ across the three districts within time, at the time of the baseline survey, and, especially, at the time of the follow-up survey when differences in prices and quality across districts become more important.

A final definition is necessary to address this research. Let

- \(\wp_{sg}\) = probability of seeking care from government facilities when ill and
- \(\wp_{sd}\) = probability of seeking care from private pharmacies when ill.

Clearly

\[
\wp_{sg} = \wp_s \cdot (\wp_g + \wp_gd)
\]  \hspace{1cm} (8)

and

\[
\wp_{sd} = \wp_s \cdot (\wp_g + \wp_gd)
\]  \hspace{1cm} (9)
The probability $\varphi_{sg}$ can be expressed as follows:

$$
\varphi_{sg} = \varphi(p,q,t,Y,O)
$$

(10)

where

- $p$ = out-of-pocket price of care;
- $q$ = quality of care, as measured by the availability of drugs at the facility;
- $t$ = travel time to and waiting time at the provider's facility;
- $Y$ = household income; and
- $O$ = other individual, household, and provider characteristics affecting the demand for care.

Figure 2 presents probability expression (6) as a function of its arguments for each of the three districts before the introduction of cost recovery and six months after. As can be seen from the table, demand for government care is expected to change in the two test districts as a result of the changes in price, quality of care, and household income (reduction in income due to the tax payment) brought about by cost recovery.
FIGURE 2
RESEARCH DESIGN, PROBABILITY EXPRESSIONS

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<tr>
<th>CHRONOLOGY</th>
<th>BOBOYE (Tax With Copayment)</th>
<th>SAY (Fee Per Episode)</th>
<th>ILLELEA (Control)</th>
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<td>Before Cost Recovery</td>
<td>Price is zero ( p=0 ) Quality is low ( q=q_{l} ) Travel time ( t ) Household income ( Y ) Other variables ( O )</td>
<td>Same ( p=0 ) Quality is low ( q=q_{l} ) Travel time ( t ) Household income ( Y ) Other variables ( O )</td>
<td>Same ( p=0 ) Quality is low ( q=q_{l} ) Travel time ( t ) Household income ( Y ) Other variables ( O )</td>
</tr>
<tr>
<td>After Cost Recovery</td>
<td>Price is copayment ( p=c ) Quality is high ( q=q_{h} ) Travel time ( t ) Household income ( Y ) Net of tax ( T ) Other variables ( O )</td>
<td>Price is fee ( p=F ) Quality is high ( q=q_{h} ) Travel time ( t ) Household income ( Y ) Other variables ( O )</td>
<td>Price is zero ( p=0 ) Quality is low ( q=q_{l} ) Travel time ( t ) Household income ( Y ) Other variables ( O )</td>
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Empirical Specification of Demand and Econometric Estimation

The empirical specification of the probability equations is going to be a linear, first-order approximation of a possibly more complex specification. Probabilities are monotonic to indirect utility functions where price, travel and waiting time, income, education, other socioeconomic variables, quality of care, and other provider characteristics enter linearly in the indirect utility specification. In addition, one or more interaction terms between pairs of variables, such as price times income, will be included to assess whether pairs of variables interact in their affect on demand. For example, the price times income variable allows one to assess whether the affect of price on demand varies according to household income, as has been shown by Gertler et al. (1987), Mwabu (1984), and others. Indirect utility from obtaining care at a government facility thus can be expressed as

\[
V_{sg} = \alpha p + \beta q + \gamma t + \delta Y + \eta pY + \theta EDUC + \epsilon
\]  

(11)

where epsilon is an error term supposed to be distributed as an extreme-value function.

Estimation of probability will be done using nested logit, either with full information maximum likelihood or with a multiple-step approach suggested by Amemiya (year). The relative pros and cons of FIML and multi-stage estimation are discussed in Amemiya. The four steps considered will be: reporting an illness, obtaining home care, seeking care outside the home, and choosing a particular type of provider.
In order to impute price, travel time, and waiting time to each individual with a health problem for each of the two provider options, price, travel-time, and waiting-time hedonic equations will be estimated. For each provider option, estimation will be done with ordinary least squares over all the observations from the people who choose that option. Selectivity bias correction may be done depending on time availability.

**Demand Estimation and Price Effects**

In principle, only three price levels will be observed in government facilities in the three districts during the test: a price of zero (before the introduction of cost recovery in Boboye and Say and throughout the tests in Illela); a price equal to the copayment in Boboye; and a price equal to the fee-per-episode in Say. This limited variability in price may be insufficient to obtain reliable estimates of the effect of out-of-pocket price of care on demand. Fortunately, private providers of care, primarily pharmacies, are likely to display a much wider range of prices, although their services are not fully comparable with those of government facilities. The latter provide care in the form of patient examinations by medical staff, with limited provision of drugs; the former provide, in contrast, primarily provide drugs with limited medical examinations.

If both groups of providers can be viewed as providing a relatively homogeneous health service, then estimation of price effects on demand may be feasible. Otherwise, estimation of price effects on demand for government care may be problematic. The problem could be solved in part by introducing an interaction term between price and income. Even if price variability is limited, sufficient variability in income will ensure that the interaction term offers enough variance to allow reliable estimation. Nevertheless, with this method it would not be possible to estimate the independent effect of price on demand.
APPENDIX B
## Niger Pilot Tests of Cost Recovery
### Plan of Activities Through End of Project
#### TA (Policy) and AR Products

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AY: Abdo Yazbeck  
ERs: External reviewer  
FD: François Diop  
HFS: HFS staff  
KC: Kenneth Currier  
MOH: Ministry of Health  
NT: Nena Terrell  
RA: Research assistant  
RB: Ricardo Bitran  
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### Niger Pilot Tests of Cost Recovery
#### Plan of Activities Through End of Project
##### TA (Policy) and AR Products

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**Econometric analysis of baseline household data**

- Trip to Niamey by econometrician to work with Diop

**Econometric estimation of demand**

- Econometric estimation of demand
- Econometric analysis of baseline household data

**Report write up**

- Econometric estimation of demand

**Internal and external reviews**

- Internal and external reviews

**Final revisions, editing, and translation**

- Final revisions, editing, and translation

**Surveys of facility personnel, health committee members, and patient exit interviews (information used for analysis of means testing, quality of care, and provider incentives)**

- Surveys of facility personnel, health committee members, and patient exit interviews

**Development, review, testing, and revision of instruments**

- Development, review, testing, and revision of instruments

**Training of facility supervisors and other enumerators**

- Training of facility supervisors and other enumerators

**Data collection**

- Data collection

**Development of data entry programs**

- Development of data entry programs

**Data entry and cleaning**

- Data entry and cleaning

**Follow-up Household Survey**

- Follow-up Household Survey

**Modification of household questionnaire**

- Modification of household questionnaire

**Testing and revisions**

- Testing and revisions

**Refresher training for enumerators**

- Refresher training for enumerators

---

**AY:** Abdo Yazbeck  
**AW:** Annemarie Wouters  
**DE:** Data entry specialist  
**ENU:** Enumerators  
**FD:** Français Diop  
**FD, SUP:** DE, FD  
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**Abbreviations:**
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<td>AY NT TR TR</td>
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<tr>
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<tr>
<td>Final policy workshop in Niger</td>
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<tr>
<td>Preparation and analysis</td>
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<td>Presentation</td>
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<tr>
<td>Final briefing in U.S. (AID, other AID projects, other donors)</td>
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AY: Abdo Yazbeck ERs: External reviewer MM: Marty Makinen RB: Ricardo Bitran
AW: Annemarie Wouters FD: François Diop MOH: Ministry of Health SUP: Facility supervisors
DE: Data entry specialist HFS: HFS staff NT: Nena Terrell TR: French translator
ENU: Enumerators KC: Kenneth Currier RA: Research assistant USAID: USAID/Niamey
APPENDIX C

LEVEL OF EFFORT (in Days)

<table>
<thead>
<tr>
<th>Position</th>
<th>Level of Effort</th>
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<tr>
<td>HFS Technical Director/Makinen</td>
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<td>HFS Research Director/Bitran</td>
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<tr>
<td>Senior Health Economist/Diop</td>
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<td>Field Supervision/Becker</td>
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<td>Project Assistant/Romualdo</td>
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<td>Facilitator/Carney</td>
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TOTAL LEVEL OF EFFORT 1205
BIBLIOGRAPHY


_____. (various years) "Estado de ingresos devengados y gastos por programa." Departamento de Contabilidad, unpublished document.

_____. (various years) "Informe de la ejecucion de presupuesto." Departamento de Presupuesto, unpublished document.


Contraloria General de la Republica. (various years) Estadisticas Vitales. Panama: Departamento Nacional de Estadistica.


Federation of Korean Medical Insurance Societies. (1986). "Outline of Medical Insurance In Korea."


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Velazques Diaz, Georgina. (1989, Summer-Fall). "Diez anos de IMSS-COPLAMAR." Cuestión Social. no. 15.


