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**PLANNING THE FINANCING OF
PRIMARY HEALTH CARE:
ASSESSING ALTERNATIVE METHODS**

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I. INTRODUCTION

Public health professionals have long advocated primary health care (PHC) as a less costly way to improve population health status and to extend access to basic health services to large numbers of people than hospital-based, curative health care systems. It was this conviction that led to the international recognition given to PHC at the Alma-Ata Conference in 1978. That conference produced a definition of the various components of a comprehensive program of PHC and gave impetus to a movement that led several years later to the WHO declaration that PHC was the key strategy for the achievement of "Health for All by the Year 2000". Since then, there has been considerable investment in various approaches to PHC in many developing countries, much of it supported by grants and loans from donor agencies and multilateral organizations.

The concerns of planners of PHC programs during this time have focused mainly on organizational, administrative, and technological issues: defining the type of PHC services to provide (the PHC service package), determining the appropriate configuration of facilities and staff to provide that package, and outlining the logistics, supply, and administrative arrangements implied by the chosen configuration. For the most part, actual and potential costs of PHC have not received priority attention. The lack of financial planning has led to the creation of programs and the construction of facilities which subsequently were not adequately supported by government budget. In general, there has been an accumulation of evidence that continued implementation of PHC programs is more costly to developing country governments in the long run than had been originally anticipated (11, 19).

Whether PHC programs are designed as selective interventions or as more broadly focused delivery systems, there is a clear need to establish financial planning as an integral part of the overall process of planning PHC in developing countries. Integration of financial planning into the overall process should in fact be designed to facilitate a more rational decision-making across the wide spectrum of policy choices that affect the direction and pace of PHC development. These policy choices range from global questions about the appropriate role and responsibility of government in PHC development to narrow program questions about the most cost-effective way to deliver immunization services.

This paper proposes a framework for establishing financial planning as an integral part of overall PHC planning in developing countries. Its objective is to show how implementation of financial planning tools can serve to strengthen the implementation of PHC.

The framework to be proposed is based on several fundamental observations about the dynamics between health systems development, financing and costs of PHC, which include:

1. Ways of organizing PHC service delivery and methods for financing services are closely interrelated. For example, organization of service delivery through government channels typically implies that the financing of these services will rely heavily on general tax revenues supporting PHC budgets; whereas, private sector service delivery strategies must rely on user payments;
2. The costs of producing certain PHC services are often significantly affected by the way they are organized and financed. For example, the number of household installations of water and sanitation services directly influences the total cost of a program. Utilization of water and sanitation services by the public (the demand) is determined both by need and by the perceived quality and benefit of these services. Under-utilization of planned services can result in a reduced level of benefits being produced for a given level of cost. For example, government health centers which are staffed but under-utilized result in large government expenditures for salaries not commensurate with level of activity.
3. "Integrated" PHC programs which share the same inputs, such as a community health worker who performs immunizations, provides basic curative care, and offers health education, can raise the level of benefits relative to the overall cost of that program. However, integration places a high premium on adequate supervision and logistics systems. "Integration" may be relatively more costly in the medium term as this process requires inputs for strengthening supervision, transportation and communication components of PHC. These components cut across a variety of PHC activities and are essential for program success.
4. Selective interventions using mass campaigns or vertically organized programs may be extremely cost-effective in the short-term, but much less cost-effective over the long-term because of their inability to deliver sustained benefits and to increase the capacity of the health sector to assure funding sources for the costs incurred;
5. Governments often accept donor funding of PHC programs without assessing the full impact of the total recurrent costs of a donor program. Local governments also may use donor contributions as a way of resolving certain financial strains related to all or part of PHC programs, thereby freeing national resources for alternative health or other sector programs. On the other hand, donors provide contributions in an attempt to alleviate foreign exchange and investment cost problems of financing PHC and expect that the host country will eventually assume fiscal responsibility for a program, once started. Therefore, governments and donors often have different purposes for agreeing on donor funding for PHC, and this difference has implications for the long-run viability of programs.

6. Because primary health care is not a homogeneous service or concept, optimal methods for organizing and delivering PHC services are likely to be different for alternative combinations of PHC services. Each combination requires different levels and types of inputs, and results in a variety of benefits to a range of population groups. For example, a water and sanitation project may require more capital inputs than an ORT program. Water and sanitation program benefits the entire population, whereas, the ORT program is targetted for young children. Therefore, planning the financing of a project must consider the types of inputs and benefits, and the incidence of costs and benefits on various target population groups.
7. Simply providing PHC services does not guarantee that those services will be demanded or accepted by the population. The organization of the supply and financing of services should enhance public demand for services so that larger public benefits will result.

The above observations are intended to convey several fundamental considerations that must be taken into account in financial planning of PHC. First, the costs of producing various PHC services will vary according to the dynamic interaction of many factors, most of which are difficult to predict. These factors have been described in 1-7 above. Second, there are costs in consuming as well as providing PHC services. Individuals will demand certain services based on their perceptions of the benefits relative to the costs (such as time lost from work and transportation costs) of consuming these services. Third, planning the financing of PHC services is best conceived as an iterative process, in which adjustments to PHC program design are made after successive efforts to estimate the effects of alternative financing methods.

The iterative process can be conceived of as having four major decision-making steps:

1. Determination of what to include in the PHC services package and how to organize the delivery of each discrete component of that package;
2. Analysis of the likely investment and recurrent costs of each component of the PHC package. A costing framework has been developed and described in detail in "A Simplified Costing Format for Primary Health Care Activities" (27).
3. Identification of alternative methods and sources of financing the costs of PHC, and analysis of the effects of these methods and sources on equity, efficiency, demand for services, and other suitable criteria; and,
4. Analysis of the merits of the original PHC design on how the chosen financing methods may impact short- and long-term costs. This last stage should be followed by changes in the organization and financing of PHC as warranted.

The next section suggests criteria for choosing among alternative methods for financing PHC, and describes and discusses these methods in detail. The concluding section provides several case studies of alternative ways of financing PHC in developing countries.

II. CRITERIA FOR CHOOSING A PHC FINANCING METHOD

This section highlights several possible criteria that can be used to choose a financing method for a particular mix of primary health care services.

A. Equity

In societies where health is thought to be a basic right, health services are usually intended to be provided free of charge by the national government. The Agency for International Development has joined other donors in a worldwide effort to achieve certain targets in child survival by the end of this decade. AID's focus will be on developing sustained capacity in each country to effectively provide child survival interventions to reduce morbidity and mortality. WHO's policy of "Health For All" states that governments should supply and finance basic health and water and sanitation services to the entire population in a way that promotes equity. In some societies, the choice is made to have patients share in the cost of providing health services by paying fees. Equity impinges upon different target groups in a population as well. For example, certain programs provide greater access to services to women and children that would otherwise not be provided. Societies value and define equity differently, and therefore this goal can influence the type of financing schemes which are adopted.

B. Efficiency

Efficiency is a term which refers to providing the maximum amount or the most optimal quantity or quality of health and water and sanitation services at the lowest possible cost to the individual, to the health provider, or to the society as a whole. Efficiency is valued differently in different societies, and it is often inevitable that efficiency goals cannot be achieved without some sacrifice of equity goals, and vice versa. The way in which a health or water and sanitation service is organized and financed affects the capacity to provide services efficiently. Financing methods vary in the way they create incentives to providers and in the way they create incentives for patients consuming services.

For example, on the provider side, a privately-owned system in which people pay in advance for their care can result in a more efficient delivery of these services. The suppliers of services (the owners) must operate under a fixed budget, and are motivated to be cost-conscious because they might lose surplus resources by operating inefficiently. An incentive is thereby created to provide services efficiently by linking the payment method to incentives on the provider side. On the other hand, a system where a third party pays for services (i.e., indemnity insurance policies) creates a disincentive toward efficiency. There is no control on

how many and what types of services are provided and consumed, except when individuals are required to pay a portion of their health care costs. Experience has shown that third-party payment tends to increase the overall cost of providing health services.

On the patient side, there is often wasteful and unnecessary consumption of services when patients pay little or nothing out-of-pocket. It is common for patients in developing countries to self-refer for minor disorders to hospital clinics, bypassing local PHC clinics, perhaps because hospital services are perceived to be of better quality.

C. Risk-sharing

It is well-documented that health status is positively correlated with income; therefore, poorer individuals are at greater risk for becoming sick. A financing system in which each individual pays for treatment or services can result in an undue financial burden on the most sick and, thus the poorest in society. In addition, catastrophic illness is extremely costly for an individual to treat, and therefore, spreading the financial risk of ill-health benefits the population as a whole. Financing options which spread the risk of the financing burden of ill health to all members of society are preferred. For example, a community water project which requires individuals to pay an initial installation fee spreads the burden of the cost of the service over the entire population. In addition, a financing scheme which collects a prepayment fee from community members in advance of the need for health services spreads the burden over the entire community. However, in societies where decisions about which services to provide and to whom are influenced by political considerations, this notion of risk-sharing may not be as high a priority as other types of criteria for planning financing of services.

D. Sufficiency of Funds

One obvious, but rarely addressed criteria for planning the financing of PHC activities is the sufficiency of funds from a particular source. The issue of sufficiency needs to be considered in developing countries where government revenues from taxes are not adequate to cover the costs of all health programs planned in a certain year, or to finance the expansion of existing services into new regions or for new target groups. The problem of sufficiency of funds arises when the recurrent costs of newly implemented PHC activities far exceed the capacity of national government budgets.

E. Reliability of Funds

Reliability of funds is needed to ensure the continuity of financing from a particular source over time. National revenues are affected by the overall performance of the economy which is precarious in some parts of the world. During a recessionary period, the health sector budget may be cut unless there is strong political support. In this case, the health sector will reduce funding of certain programs which will result in shortages in supplies, manpower, and equipment. Budget cuts are often disproportionate and often create inefficiencies in health program operation. In addition,

donor financing is usually time-limited for particular PHC interventions and therefore is not the most reliable source of recurrent cost funding. Therefore, the choice of a financing scheme should consider the long-term reliability of funds and make plans to adapt to fluctuations in the level of funding over time.

F. Administrative Feasibility

Financing schemes have an inherent cost themselves, in terms of the types of administrative systems which must be strengthened or put into place in order to collect, monitor, or disburse revenues. For example, a financing scheme which relies on collection of fees for drugs at health centers requires implementation of accounting procedures and methods of maintaining stock inventories. The financing system may involve training a cadre of health personnel responsible for these activities, which is costly. In health sectors with administrative capabilities, alternative financing schemes will not pose as great a financial burden as on those countries which have not developed this capacity.

G. Type of Service and Demand

Components of PHC may best be financed through a variety of mechanisms. A type of good or service which provides large benefits to society and only relatively low (perceived) benefits to the individual should be financed in such a way that each person has equal opportunity to consume, and cannot avoid sharing, to some degree, in the cost. For example, immunization services provide large benefits to a population because disease transmission is reduced. These benefits are both personal and external to the individual. However, to an individual the perceived personal benefit relative to the cost may be small. In this sense everyone has the incentive not to pay for the good, and outbreaks of the disease will continue. In order for people to consume the proper amount of immunizations, governments or donors often organize and finance vaccination programs, and often the service subsidized. Other preventive services, such as sanitation and potable water, are often financed in this way.

Goods and services which confer private benefits and for which there is a high consumer demand are usually regulated through the market, where price (and income) typically determines an individual's ability to buy. In cases where both harmful and beneficial drugs are available for sale at pharmacies, price level can regulate consumption patterns. In a society that wishes to promote ORS and to deter individuals from using antibiotics to treat diarrheal disease, ORS can be subsidized (financed) by the government, donors, or non-governmental organizations, and high tariffs could be placed on other drugs and as used revenue for the health sector.

III. ALTERNATIVE MODES FOR FINANCING PHC

The previous section has highlighted social criteria and programmatic goals which affect and are affected by the type of financing scheme which is chosen. The following paragraphs describe each mode of financing in more detail and compares their advantages, disadvantages, and role in improving the pool of resources available for health. Table 1 summarizes this section. As we shall discuss later, each of these alternatives has distinct implications for ultimate costs and effectiveness of the program financed.

A. Government Financing

There are several major sources for financing PHC: government resources, donor funding, private sector contributions, and community or individual resources. The most common source of funding for PHC in developing countries is the allocation of national-level resources to the health budget. Tax revenues (including head taxes, sales tax, import and export tariffs, and income taxes) are one component of national resources which can be earmarked for health. Government resources are most often used to finance some recurrent expenditures in health, such as salaries and training programs for health and sanitation workers. Governments usually provide at least some major proportion of health and water and sanitation services free of charge; they often do not have the capacity to completely finance all recurrent expenditures for PHC, and this has led to cut-backs and inefficiencies in health and sanitation programs.

Because the delivery of PHC services in the public sector is organized so that shortages of supplies and personnel often occur, individuals may seek additional health care outside of the public sector and must pay for their services. Although the intent of most governments is (or was) to provide free services to all, in practice, most individuals pay for a large proportion of their health care, either directly or indirectly through taxes. Because the capacity for the government to collect increased taxes is limited, and because it is unlikely that governments will allocate a greater real share of total government resources to health (given the decline in funding in the recent past), substantial additional resources for PHC are not likely to be generated through the public sector. The fact that government resources are constrained underscores the need for countries to explore other modes of financing which aim to cover the cost of PHC.

B. Donor Assistance

A second source of funds for financing PHC comes from bilateral and multilateral donor assistance. Donor contributions are especially useful sources of funds for capital investment and program start-up costs, and have, on occasion, been used to finance some replacement and recurrent costs. For PHC, donors often contribute to the development of rural health and water and sanitation schemes, which is an attempt to redistribute resources from the wealthier, urban areas to the rural poor. Although donor funding is often for rural PHC programs, there are few incentives to provide services efficiently through this mechanism. The modus operandi is

to spend all the resources allocated for a particular program, regardless of whether the funds have been spent wisely.

It is likely that donor funding will continue into the future, but these resources will not be sufficient to cover the huge recurrent costs of comprehensive PHC programs. Heller states that donor assistance has fueled the "underfinancing of recurrent costs" in developing countries, because donor funds are used to develop programs which countries cannot support or choose not to support in the long-run (12). Moreover, donor contributions are usually time-limited (5 years for AID Projects), and bilateral funding is often contingent upon the political relationship between the two countries in question. Funding through multinational organizations, such as UNICEF and WHO, is usually earmarked for particular interventions and cannot be allocated to other health programs which may need resources. Thus, donor financing will continue to play a major role in the financing of PHC, but these funds will not only be insufficient to cover all of the recurrent costs, but they are contingent upon broader political goals.

C. Private Sector for Profit Financing

Alongside the public sector, the private sector may own and operate health facilities which provide some PHC services. The private sector is the most diverse and includes traditional practitioners, for-profit private practice physicians, drug sellers, and pharmacists, for-profit employer-based health services, and non-profit organizations such as church-affiliated organizations. The for-profit private sector behaves differently than the non-profit sector. Funds are generated in the for-profit private sector by charging fees for services and/or fees for drugs. Payment is made in-cash and in-kind. Because a competitive marketplace regulates the supply and demand for health services, the for-profit private sector can, in theory, provide some health services, especially curative services, most efficiently.

On the other hand, services are only provided to those individuals who are able to pay for them, and therefore, the private sector may preclude some individuals from receiving the care they need. The public sector often has no formal mechanism by which to control whether an individual will choose to use private services over public services, although prices charged at public facilities pose a competitive ceiling for prices that could be charged in the private sector, assuming that quality of care is not a major factor in the choice of care in this case and the public system is large.

Furthermore, primary health care has not been traditionally implemented through the private sector. If preventive services were provided in the marketplace, the prices that would be charged to make those services profitable to the private sector would be higher than the prices individuals would be willing to pay (according to economic theory). Therefore, the costs of preventive and promotive services must be subsidized so that these services will be both profitable to providers and perceived as beneficial by consumers.

Efforts are being made to provide incentives to the private sector to "sell" PHC services. For example, pharmacies and traditional healers are being given ORS packets to sell at higher prices than in the public sector; traditional birth attendants are being trained to provide preventive and promotive services to mothers; the cost of prophylactic drugs, such as chloroquine, are being subsidized so that consumers may purchase them at lower than market prices while providing a profit to pharmacies and physicians. Private physicians are being organized in such a way that the incentive to provide preventive and promotive services exists. The construction, operation, and maintenance of water and sanitation systems have typically been provided in the public sector because they are for the public good. Nevertheless, some attempts are being made to provide some design, construction, operations, and maintenance services by contracting the private sector to operate public services. Therefore, there appears to be a well-articulated role for the public and private sectors in terms of the types of services they can provide. Curative care may be provided most effectively through the for-profit, private sector, and preventive and promotive services may be more effectively provided through the public sector.

D. Private, Non-Profit Financing

The non-profit sector (church groups and other NGOs) are philosophically bound to provide basic health services to the largest population group possible. In this sense, they highly value the equitable provision of PHC services. These organizations charge fees for services, but also provide services free of charge for those who cannot pay. In many countries, the non-profit sector operates "pilot projects" on financing and provision of PHC services, and this sector has not been explored to its full potential. The drawback of using the non-profit sector for financing PHC is that this sectors' services are often in direct competition with those of the private, for-profit and public sectors. In addition, church groups have larger goals than provision of health services, and these may not be embraced by the host country.

E. Community Financing: Social Insurance

The fourth source of funding for PHC comes from community financing. Community financing may take the form of prepayment for health services, collective payments, or user fees (24). Prepayment for health services includes employer-based social insurance and community-based schemes. Through employer-based social insurance in Latin American, employers contribute roughly twice the amount paid by employees. Medical care is provided either directly through the social insurance system's own facilities, or indirectly with private clinics or doctors reimbursed by social insurance (23). The majority of Latin American countries has some form of social insurance, though coverage of the population varies with higher income countries having higher coverage rates.

Social insurance schemes affect the efficiency and equity of health service delivery. An incentive for the use of capital-intensive technology exists which tends to drive the overall cost of health care upwards. The degree of this incentive depends upon the amount when all costs are

reimbursed there is no incentive for delivering services efficiently. The major disadvantages of social insurance are that few preventive and promotive services are currently provided through these systems which are primarily curative in nature; and that the system only covers individuals in the wage-based sector. However, these schemes can be redesigned in ways so that incentives are created for the individual to consume a wider range of health services, including preventive and promotive services. Therefore, in terms of financing PHC, social insurance schemes need to be re-examined and the design of these systems altered so that employees are more involved in sharing the costs of their health care and that individuals are provided with incentives to consume more preventive services.

F. Prepayment

Community-based prepayment schemes have been attempted in several countries with varying levels of success (26). In rural areas, households may contribute to support a community organization which provides medical services and/or drugs through cash or payment in-kind (22,23). Revenues generated are used to cover the cost of medical supplies or personnel or to raise additional revenues for the government (8). In Thailand, community welfare cooperatives provide services to households based on an annual membership (16). A production-based health financing scheme in Colombia is organized around a cooperative formed by small coffee growers. Some of this revenue is used to purchase health care through a contract with Ministry of Health to provide clinic services in a geographical area. Community prepayment is a common form of financing water and sanitation projects, where each individual in the community pays a fee for the initial installation of equipment and some recurrent costs.

Community-based prepayment schemes depend on favorable attitudes towards prepayment by the community, which is not always the case in developing societies. A household's ability to pre-pay may vary depending on the time of year. For example, periods of drought and famine adversely affect a household's ability to prepay for their health care; whereas, periods of harvest are relatively more economically stable. In addition, organizational capacity of the health system also determines the success of prepayment systems. For example, Stinson states that most prepayment schemes have failed because they were unable to maintain or manage the initial pool of funds collected through prepayment (26). On the other hand, prepayment schemes have the greatest potential to distribute the costs of PHC over the entire community and to finance a broad range of services (preventive, promotive, and curative). Prepayment systems may also be used to finance health services for poorer members of society through cross-subsidization: wealthier members paying proportionally more for their services to provide lower cost services for lower income groups.

Collective payments for health services include community donations of cash, land or labor for health services. This is one of the most prevalent forms of community financing for the construction of water and sanitation projects, whereby communities are involved in constructing latrines, installing pipeline, building storage tanks or digging their own wells. Collective payments are therefore a good mechanism for financing some

aspects of initial start-up costs of programs, or for maintenance and repair of health facilities and water and sanitation projects. Although this mechanism seems to be one way to facilitate community involvement in health services, the use of such services may depend on the level of democracy in a community.

G. Individual Payment

The last source of community-level financing for PHC is the individual. Fees are charges levied for health care consultations, tests, drugs or services received by an individual (24). Depending upon the ability and willingness of individuals to pay for their health services, user fees can provide a large opportunity for recovering the recurrent costs of PHC activities. This next section will summarize current research findings on this method of financing, and will outline some of the most relevant issues in the implementation of user fee systems for health and water and sanitation projects.

A multitude of studies and surveys have been performed throughout the world assessing the current contribution to health care expenditures of households. De Ferranti found that more than 85% of total health care expenditure could be attributable to out-of-pocket costs for health care by individuals in some countries (23). In Latin America, several studies (Honduras and Brazil) have elucidated which services could have user fees applied to them. In general, it was found that preventive services (maternal and child health and immunization services) should be provided free of charge, and that charges were more appropriate for selected curative services (lab exams and blood tests, for example).

Several studies have assessed population willingness to pay for health services as well (5). Recent studies in Latin America and the Caribbean have shown that consumers put qualifications on their expressed willingness to pay for health services, as they would like the revenues to remain in their communities. Retention of revenues in the health sector will remain a large problem in the future, as governments are interested in using the revenue generated for programs other than in the health sector.

There is general consensus that individual of financing of PHC activities will play a larger role in the future. However, there are several issues and problems with user fee systems which are likely to affect the cost recovery potential and implementation of such systems in the future.

First of all, there is some discussion over the extent of the impact that user fees will have on covering all recurrent costs of programs. One projection shows that only 20 to 25 percent of total health care expenditures could be recovered through this mechanism (23).

Second, the factors which determine willingness and ability to pay differ markedly from one setting to another. There is still no consistent evidence to assist policymakers in answering the questions of when to charge, how much to charge, who to charge, and for what services (5).

Thirdly, there is some concern about the effects of user fee systems on the utilization of health services, especially among the poorer population in countries. However, there have been few evaluations of the impact of systems on utilization patterns. Evidence from Thailand shows that households are not deterred from buying a health card for public services because of its price but because of limitations on coverage and competition from private sector providers (16).

Fourth, it is well documented that individuals are willing to pay for curative health services, but that they might be less likely to pay for preventive and promotive services. Therefore, there may be a growing need in the future to design financing schemes which charge individuals for drugs and consultations, and use these revenues to subsidize the recurrent costs of immunization programs or community well projects. Currently, some countries are exploring this mechanism (Zaire, for example). In Latin America, pre-paid health programs attempt to cross-subsidize primary health services with curative ones. Further evaluation needs to take place to determine how well these schemes are functioning.

Fifth, there is little experience at the peripheral level with regard to the management of funds generated through cost recovery schemes which charge fees. For example, revolving drug funds require an efficient and reasonable comprehensive management and information and accounting system. Moreover, the health workers who operate such funds need to have expertise in technical and business management skills (6).

Sixth, the ability to predict the cost recovery potential of a particular scheme is based on knowledge of the quantity of services which will be consumed at a particular price. However, we still do not know how individual's behavior will change over time with respect to the demand for certain PHC services. Other factors, such as quality of care, distance to health facility, organizational factors in the health facility, and interpersonal treatment during the time of care, affect a person's choice in the type of health care demanded. In order to maintain a knowledge base about utilization of particular services, user fee systems should be evaluated continually.

Finally, user fees pose a problem for services which are indivisible and where the amount of a service is not controlled by the price of that service. The best example is the community well. The question arises how to set the price for using the well. If each household is charged based on how much water it consumes, then price will reflect use. This type of system is difficult to monitor, however, in addition, the indigent population may restrict its use of water, resulting in a higher risk to the community as a whole for disease transmission.

Therefore, this paper has described four major alternative approaches to financing PHC components; namely:

1. To expand government allocation to primary health services;

2. To transfer or share public responsibilities to the private sector, as there appears to be a comparative advantage of providing certain services in different sectors;
3. To start or expand health insurance and community prepayment schemes; and
4. To institute user fees for selected government services.

Each of these methods of financing has implications for equity and efficiency in the delivery of services, and each should be applied in such a way that the optimal amount of primary health services are consumed. Further, each type of financing scheme affects the cost of delivering PHC services. Schemes which promote high-cost technology will tend to increase the cost of health care in general; schemes which raise the demand for certain services above a threshold level may also increase the cost of PHC.

Financing of PHC programs usually involves some combination of the four above-mentioned schemes. The decision to implement one financing scheme over another will depend upon the philosophy and policies of the country; the objectives and goals of the health sector, in general and for PHC in particular; the demand for services; and the capability of the health sector to manage the financing scheme. Before a particular scheme is developed, the answers to the following questions should be answered for each discreet component of a PHC program:

1. Are there special features of a particular PHC component which make it unsuitable for production and/or financing through the private market, or particularly suitable for production and/or financing through the public sector?
2. What are the incentives embodied in the financing method to producers and consumers of the product or service in question? Will the method of financing lead to inefficiencies in production or to less or greater than optimal levels of consumption?
3. What are the marginal benefits of production and consumption relative to costs, and can the net benefits be increased by using some other financing method?
4. How are these benefits (effects) and costs distributed among particular individuals or groups in society?

IV. CASE STUDIES IN ALTERNATIVE FINANCING SCHEMES

Improvements in rural water supply and sanitation are priority investments in most developing countries. However, the progress of rural development has remained slow. Many of the failures in developing rural water supply and sanitation systems can be traced to the lack of adequate information for making decisions on who gets what services and at what cost (30). Therefore, one of the priority problems is the financing and cost recovery of water and sanitation projects. Without a high level of cost recovery, it is unlikely that programs will be either financially or administratively replicable on the scale required.

Traditionally, the financing of water and sanitation projects has been through donor contributions to Ministries of Health, as well as to other Ministries concerned with water management. The donor contributions have been put toward financing the capital investment costs of urban and rural programs. Because water projects involved other areas besides health, control over financing the recurrent, replacement, and operating costs of these projects are often outside the realm of Ministries of Health implementing PHC programs. However, several alternative financing mechanisms are being explored at the community level which have been successful in recovering costs. This section will explore some of these projects in more detail.

Cost recovery for water and sanitation projects includes the recovery of investment, operation, and maintenance costs. The primary objective of cost recovery is to ensure the financial viability of projects over the long run, which has often been the major reason for discontinued use of services. The major constraints to the achievement of cost recovery in water and sanitation services are several (31):

1. **Affordability:** A review of the global situation shows that most rural areas can afford to pay for improved services, provided that appropriate technologies and delivery mechanisms are used;
2. **Willingness of the population to pay for water and sanitation services:** A recommendation of a recent conference in Guatemala on water and sanitation is that this type of information should be included in the planning of rural schemes;
3. **Lack of awareness of the benefits and costs of these programs** so that effective demand for services is much less than expected, thereby increasing the unit costs of services;
4. **Absence of the necessary political will to implement projects;**
5. **Use of inappropriate technologies which increase the cost of a program and make services less accessible, affordable, or appealing to consumers;**

6. Low efficiency of local institutions to improve or maintain services, affecting the appeal and affordability and sustainability of services in the long run.

One of the major recommendations of an international conference on water and sanitation in Guatemala was to make willingness to pay surveys an integral part of planning of water and sanitation services.

A study performed in rural Haiti (30) demonstrated the positive benefits of performing willingness to pay surveys during the planning of water and sanitation projects. Results from these surveys can be used to set the price for a particular service based on estimates of the demand for them. It has been commonly assumed that rural consumers of water and sanitation services would use improved services so long as their cost did not exceed 5% of their total household income. Several reviews by the World Bank and other donors have shown, however, that this assumption has usually proved incorrect. In rural areas, many of those individuals served by new, improved systems have chosen to continue with their traditional water use practices.

Willingness to pay surveys attempt to measure how much individuals are willing to pay for services, given their perceived demand for that service and other competing ones. These surveys measure willingness to pay in two ways. The first approach (indirect approach) measures the demand for water (amount consumed, how far people travel to get water, and quality preferences). The second, direct approach measures how much people are willing to spend on improved water services, by asking them hypothetical questions. These two measurements provide information on the quantity and unit cost of services, so that an estimate of the cost recovery potential of a particular service can be made. This information can be used to design a water service, using appropriate technology, so that the community can afford and will use it.

The surveys performed in rural Haiti demonstrated that people would be willing to pay \$1.14 per month for improved water services at community standpipes. The authors felt that their willingness to pay survey provided vital information for project design.

Such a simple household survey could be performed prior to determining the type of service and where to develop projects. However, on the basis of this research the authors could not predict whether the individuals in the village would in practice pay the amounts that they indicated in the survey.

Another project in Brazil focused on community financing of community water supply (31). In this country, water supplies are operated under the municipal authorities rather than through the central government management. Community financing was accomplished through a variety of mechanisms, including community participation in construction and repair of facilities, subsidies, and external financing. Charges for utilization were based on the minimum national salary, and payment was made into a

revolving fund which worked well. These revolving funds sometimes generated enough excess cash to help with debt repayment or expansion of services.

In Thailand most water and sanitation programs for villages have been implemented by government health workers, with little community participation, with varying degrees of success (15). New approaches are being tried in which the emphasis is being placed on active community participation in planning, financing and maintenance of rural water supply and sanitation systems. A pilot project was conducted in 1981-1982 in which a revolving fund was established to finance work on drinking water supplies and sanitation in several villages. To become a member of the cooperative, a villager had to buy at least one share costing \$4.00. The administrative committee of the cooperative was empowered to consider applications for membership and to grant loans to members wanting to build private facilities. This village committee met monthly to discuss finance, cooperation, and implementation. However, two problems were encountered by the fund: competition arose at the beginning of the project because confusion existed about the purchasing of shares into the cooperative; and each month, between four and eight households were slow to repay their loans which meant delaying in lending money to new borrowers. These problems were overcome through increased education and participation of the villagers.

Therefore, the financing of recurrent costs of water and sanitation projects has been carried out in a variety of ways, usually with the assistance of the community itself. By involving the community in the planning of services, the financial viability of projects may be improved over the long-run. Community participation in terms of donations of labor, or development of cooperatives, or of revolving funds for maintenance and expansion are some examples described in this report.

Alternative financing of primary health care projects in developing countries is not a new concept. The Resources for Child Health (REACH) Project has recently funded a study which compares the cost recovery potential for health services among different health zones in Zaire (3). The question of how to assure financial viability of basic health services in the future has become a high priority for Zaire, as in other African countries. This has been for primarily four reasons:

1. The Government of Zaire and other donors have set ambitious goals for improvements in the quality and coverage of basic health services;
2. The amount of government resources available is constrained by the recent poor performance of the Zairian economy;
3. The past strategy that the government used to finance the operating and maintenance costs failed to assure sustainability; and,

4. The "distance" that the Ministry of Health must travel to achieve the goals of the health sector.

To meet the goal of "Health for All", Zaire is in the process of establishing a network of health zones to total 300 zones and 6,000 health centers. The financing strategy for the health zones involves a sharing of costs between donors (investment costs) and the government (salaries and personnel costs). The zones themselves are responsible for paying for operating and maintenance costs, from resources generated through charging fees for health services. The decentralization of financing to the level of the zones is a means to overcome the difficulty of relying of government recurrent resources to keep the system operating.

The zones have been given a high level of autonomy in decision-making so that they have been allowed to develop cost recovery schemes which are suitable to local conditions. During the initial phases of zone development, little attention was paid to cost recovery performance. The REACH-funded study was aimed at analyzing the health zones' cost recovery systems and recommending measures to improve the zones cost-recovery potential. Ten health zones were chosen among the best organized in the country and had relatively successful cost recovery systems. The main finding of the study are as follows:

1. There is a great deal of community participation in decisions about how to manage the health zones and how to finance health care within the zones.
2. There is cross-subsidization between services (curative to preventive services) and between communities (wealthier to poorer).
3. Some of the zones are experimenting with pre-paid health systems which are successful in recovering recurrent costs.
4. The health zones included in the study were able to finance a substantial proportion of their operating expenses through user fees. The cost recovery potential ranged from 90 to 67%, with the average being 79% of total recurrent costs.
5. The Government of Zaire and non-governmental organizations played an important role in financing the proportion of operating expenses not recovered by the zones. The total contribution in 1985 resulted in 21% of total operating cost.

The study made several recommendations for the improvement of the health zones cost recovery potential. In the first place, additional studies on the demand for services, including PHC, need to be performed. Understanding the population's behavior with respect to price of health care services will help to find the optimal payment schemes from the viewpoint of both accessibility and cost recovery.

Secondly, cross-subsidization among centers within a health zone is one solution for achieving financial autonomy for health centers, if this solution is accepted by the health centers' health committees. Health centers should investigate the reasons why reference hospitals cannot achieve financial autonomy in their operating costs. Low occupancy levels in these hospitals suggests that high overhead rates may be responsible for this deficit. Health zones with mature management information systems may investigate pre-paid health plans for both inpatient and outpatient services.

What this study shows is that through decentralization of management decision-making of financing of health services, substantial cost recovery may be achieved. In addition, the partitioning of costs among a variety of financing sources has helped the zones become more financially secure and will ensure the sustainability of health services in the future.

V. CONCLUSIONS AND SUMMARY

Primary health care, defined broadly, includes the provision of basic health services, as well as preventive and promotive services such as water supply and sanitation services. These types of services are expensive to provide an entire population, especially when viewed in light of the resource constraints posed by developing economies. Because of the high costs of PHC, more attention needs to be paid in the future to assessing the areas where costs can be contained, where inefficiencies in the delivery of services exist, and how alternative methods of financing for different components of PHC programs can be implemented.

Host countries and donors need to think more about the recurrent cost implications of the projects that they design, because the magnitude of the recurrent cost burden on a country will affect the probability of sustaining these projects and maintaining health benefits over time. In addition, the sustainability of PHC programs not only involves financial resources, but also manpower and equipment needs in the future.

Therefore, planning the financing of PHC in a particular country involves first a determination of what PHC services will be included in the "package" of services. Secondly, the costs of delivering the PHC services need to be ascertained in order to identify areas of inefficiency and in order to predict the resource requirements for implementation of the services in the future. Thirdly, various sources of funding for PHC programs need to be identified and their adequacy for covering all of the costs of a PHC program assessed. Finally, the costs of PHC and the performance of financing schemes need to be evaluated on a continual basis in order to foresee shortfalls in resources, to plan for additional funding, and in order to improve the performance of the health sector in general.

TABLE 1
SOURCES AND MODES OF FINANCING ALTERNATIVES

Form	Source of Financing	Type of Cost Covered	Type of PHC Service Provided	Equity
GOVERNMENT (Central, Regional, Local)	- Allocation from tax revenues - Free care	Recurrent cost Replacement cost	All	High
DONOR FUNDING (Bilateral, Multilateral)	- Grants - Loans	Capital Investment, Replacement Cost, Start-up Cost	-Depends on donor interest	High
PRIVATE FOR-PROFIT (Traditional practitioners, private pharm- acies, industry services)	- Fee-for-Service drugs, consultations	All costs	Curative	Low
PRIVATE NON-PROFIT (Church Groups, NGOs)	- Fee-for-Services, drugs, consultations - Free Care	All costs	Curative Preventive Promotive	High
COMMUNITY FINANCING (Social Insurance)	- Copayments by employers and employees	All costs	Curative	Medium
COMMUNITY PREPAYMENT	- Payment in-kind or in cash	Recurrent Replacement	Curative	High
INDIVIDUAL PAYMENT	- Payment out-of- pocket fees	Recurrent Replacement	Curative	Low

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Form	Efficiency	Risk Sharing	Sufficiency	Reliability	Administrative Feasibility
GOVERNMENT (Central, Regional, Local)	Low	-Government takes risk	Low	Affected by economic conditions	Depends on Institutional Capacity
DONOR FUNDING (Bilateral, Multilateral)	Low	Government takes the risk	Time-limited	Time-limited	Depends on Institutional Capacity
PRIVATE FOR-PROFIT (Traditional practitioners, private pharm- acies, industry services)	High	None	High	High	High
PRIVATE NON-PROFIT (Church Groups, NGOs)	Medium	Some	Sometimes time-limited	High	Medium
COMMUNITY FINANCING (Social Insurance)	Medium	High	Medium	High	Medium
COMMUNITY PREPAYMENT	High	High	High	Medium	Low
INDIVIDUAL PAYMENT	High	None	Medium	High	Low

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