RECURRENT COSTS IN THE HEALTH SECTOR - PROBLEMS AND POLICY OPTIONS IN THREE COUNTRIES

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Preface

The origin of this study lay in the difficulties which most developing countries have encountered in financing the recurrent costs of their health services following the second world oil price increase of 1982. The fact that by late 1988 oil prices were much lower, has done little to alleviate the problems. World interest rates are high, economic growth lower, the terms of trade unfavourable to the developing countries, many of which are burdened by international debt for which the service payments are high in relation to their export revenue.

Concern regarding the effects of economic stagnation on health was expressed at the Executive Board of WHO in 1984 (EB74/1984/REC/1, p.8), which led to a discussion at the Executive Board in early 1986 and at the World Health Assembly of the same year. The subject was considered of such importance that it was selected as the topic for the Technical Discussions of the World Health Assembly in May 1987.

Meanwhile in 1985, a draft application was submitted to USAID for funds to undertake a study of the recurrent cost problem in three developing countries. The draft was revised after discussion with USAID and approved in late 1986. WHO wishes to thank USAID for the financial and other support given to these studies. They were intended to assist in the identification of rational policies for implementing primary health care. It was hoped that senior policy-makers in the health field would be involved in the study from its inception. The general study objectives were to:

(a) Identify the nature, extent and principal consequences of present and prospective recurrent budget shortages in publicly-financed health care; and

(b) Assess the feasibility and maintainability of alternative financing and resource allocation strategies to promote equity and efficiency in the provision of primary health care.

Overall coordination of the studies was by Mr A. Creese, Division of Strengthening of Health Services, WHO, Geneva.

The final selection of the countries, made by USAID in conjunction with WHO, was Mali, Jamaica and Costa Rica. Basic facts about the three countries are shown in Table 1. The most striking difference is between the GDP per head of Mali (US$ 130) and the other two — Jamaica (US$872) and Costa Rica (US$1334). The size of population is similar in Costa Rica and Jamaica but Mali has a population two-and-a-half times larger. Though both Costa Rica and Jamaica are heavily burdened with international debt, an important difference between the two is in the level of unemployment (Costa Rica, 5.5% and Jamaica, 22%). The poverty of Mali is reflected both in its poor health indices and its limited availability and use of health services.

Table 1
BASIC STATISTICS FROM THE THREE COUNTRIES
(1986 or nearest year data available)

	Jamaica	*Costa Rica*	*Mali*
Population in millions	2.35	2.75	7.3
GNP per head in US dollars	872	1 334	180
Rate of unemployment	22.3	5.5	
Percentage of population covered by piped water	20	8	urban 63 rural 8
Debts as percentage of exports of goods and services	81	60	11
Infant mortality rate	27	17	150
Life expectancy at birth	70	75	45
Percentage with malnutrition	—	2.5	49
Health expenditures as percentage of GDP (public and private)	3.5	7.7	(4.3)*
Visits per person per year to public health services other than hospitals	0.5	2.6	0.2
No. of hospital beds per 1000	2.5	2.6	0.6
Average length of stay in days	7.2	6.3	10
Persons per doctor	1 839	1 087	17 800

* Percentage of GDP estimated for 1987

It was hoped that each study would be undertaken by a national team of investigators with a technical assistance input from the World Health Organization. While this did not prove practicable in all of the countries, special studies were undertaken by national researchers in each of them. Senior policy-makers were involved from the start in all three countries and WHO wishes to thank all of those from the countries concerned who gave so much time to the study. A meeting was held of senior policy-makers with the WHO consultants and representatives of USAID in Geneva in December 1988 to discuss this draft report, make corrections and amendments, and to discuss the conclusions.

The Mali study involved a large-scale exercise to collect data as existing returns to the Ministry were unreliable. A technical committee was established to monitor the process of data collection and analysis. The study was executed by a team of nine persons specially trained for the purpose. The survey team visited, between them, the seven provincial capitals and 46 districts over a period of 12 weeks to collect the data.

In the case of Costa Rica, apart from the special studies undertaken by the National Institute for Economic Research, the task required the reassembly of existing data in a form to fit the requirements of the study. The WHO consultant (Professor Abel-Smith) made three visits and worked with teams both at the Ministry of Health and at the Social Security Fund to clarify the precise definitions of the information required. The teams assembled the data between visits. In the case of Jamaica, the task involved the assembly of existing data and policy discussions with the Minister of Health and his advisers during three separate

visits by Professor Abel-Smith. The only new data was the price index prepared by Mr Le Roy Taylor of the National Institute for Social and Economic Research.

This report consists of five chapters. Chapter 1 provides an overview of the concepts and issues involved in identifying recurrent budget deficiencies. The second chapter is an abbreviated edition of the report on Mali prepared by the National Institute for Research in Public Health. The remainder of the report consists of Chapter 3 on Jamaica, Chapter 4 on Costa Rica and Chapter 5 drawing lessons from the experience of the three countries.

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CHAPTER 1
SYMPTOMS, CAUSES AND PROPOSED SOLUTIONS

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1. INTRODUCTION

In recent decades, many developing countries have undertaken major investments in their physical infrastructure, in an attempt to expand their productive capacity. These programmes have been supported by multilateral and bilateral agencies in the belief that they were the key to future economic growth and prosperity; and, in the hope that they would produce sufficient public monies to meet the recurrent commitments of existing and new developments as they arose.

However, the reality has been somewhat different. Internationally, and within these same countries, there is now a growing realization that insufficient resources are being allocated to meet the operating and maintenance costs associated with these past investments, and that services are suffering both qualitatively and quantitatively as a result. Existing investments are operating at considerably impaired levels of efficiency; whilst new investments seem likely to further exacerbate the situation. Many areas of public sector investments have been affected besides health (e.g., agriculture, education, and transport).

Such problems are not entirely new, nor were they completely unanticipated. Despite early warnings of the long-term consequences of such a rapid expansion in investment, many countries have found the recurrent costs of investments in social infrastructure beyond their capacity of support. For instance, observing the doubling of recurrent expenditures in Ghana between 1959 and 1963-1964, Waterston (1968) warned of the effects that this trend might have on the availability of funds for development. More recently, Heller (1979) noted that the recurrent implications of the Kenyan Second National Development Plan almost always exceeded the actual and projected growth rates, and would consequently constrain future growth.

Not surprisingly, perhaps, many countries have found it increasingly impossible to meet recurrent costs from their own budgets, since as producers of primary products they have been subject to the vagaries of the physical environment, and fluctuations in world prices. Further, the two oil price crises left many of these countries heavily indebted, with repayments a major claim on public funds.

This combination of factors has proved to be particularly unfortunate for the health sector. The financial crises have come at the same time as many countries

are undertaking a structural readjustment of their health systems to the requirements of primary health care (PHC). This entails investment in both new facilities, and in new types of manpower (i.e., human capital); as well as in improvements to existing facilities and staffing patterns. The problem of finding the resources to meet the additional expenditures generated by these investments, is made all the more difficult by the reluctance of many countries to raise part of these revenues through a greater use of cost recovery.

Whilst the capital costs of these developments have been met, and may in future have been expected to be met, in large part, by donor assistance, it is the inability of many of the LDC's (Less Developed Countries) to meet the high recurrent costs of these developments that poses the central problem of development planning. In recognition of these problems, and in an attempt to resolve them, many donor agencies are now reappraising their policies for the support of health and other sectors.

Much of the literature in recent years has been on Africa where the problem appears to be chronic rather than the result of cyclical economic crises as elsewhere (Waddington & Thomas, 1988). Low per capita incomes mean that governments are unable to provide essential services to more than a small minority of their population. Resources are insufficient to keep existing resources operating at existing capacity, let alone to make them available to a greater proportion of the population. Even with donor assistance to meet the development costs, the recurrent implications would be beyond the fiscal capacity of the national governments (Meerman, 1983).

It is against this backcloth of economic insecurity and fluctuations in fortune that this chapter provides a broad overview of the recurrent cost problem. Examined in turn, are the definitions and concepts of cost and output; the components of cost, both development and recurrent; the symptoms, nature and dimensions of the recurrent cost problem; and the underlying causes of the recurrent cost problem. A range of possible solutions to the problem are presented from a review of the literature. Country-specific examinations of the problem, and of locally appropriate solutions, follow in Chapters 2, 3 and 4.

In short: the objective of this introductory chapter is to seek to identify those factors which have led to the existence of such recurrent cost problems; to describe ways of identifying, measuring, and predicting the occurrence of such problems; and to elaborate upon a broad range of policy options to prevent such problems in future years.

2. DEFINITIONS AND CONCEPTS

Any exploration of the "recurrent cost" problem requires first a clarification of the terms and expressions frequently encountered in this area (Mills & Gilson, 1988). Central to this analysis is the notion of **production:** that is, the combination of resource **inputs**, such as buildings, manpower, and technical equipment (i.e., land, labour and capital), to produce socially valued **outputs** such as goods and services. Now, whilst the needs and demands of society for such outputs are

infinite, the resources available are finite; and it is this relative scarcity that requires consideration be given to aspects of production, such as:

- the effect on output of employing different combinations of capital, human and other types of input; and
- the effect on output of increasing the input of some resources whilst holding others constant.

It is also important to consider the resource consequences, and hence costs, associated with these activities: to know the total resources necessary for present and future activities; and to be able to assess the degree to which resources are currently being used efficiently. Understanding the concepts of "resources" and of "costs" is crucial to that exercise.

The concept of cost as a sacrifice is familiar; but many people equate this with the monetary price they are required to pay for the use of goods and services. However, the primary focus of the economist is on the exercise of choice in resource use. Here, sacrifice is viewed in relation to the opportunities forgone in using resources in one way rather than another. In many instances, monetary prices are useful indicators or measures of these opportunity costs, but in other instances they are not:

- where resources are not priced (i.e., where they are given without charge);
- where the prices charged do not accurately reflect the scarcity value of those resources, and their value when used elsewhere;
- when prices do not fully reflect the effects that the use of certain resources can have other than upon those utilizing them (i.e., external or spillover effects); and
- when transfer payments, such as taxation and subsidies, are levied, which carry monetary values, but not opportunity costs, to the process of production.

Thus, cost to the economist is essentially a production-related concept, and refers to the choices implicit in utilizing resource inputs to produce one set of outputs rather than another (Robertson, 1985).

Two approaches that are often employed by economists address how costs vary with output; and how costs and output may be varied in the short and long run.

2.1 The relationship between cost and output

Often, two components of the relationship between cost and output are studied separately. The first of these is the technical relationship between **inputs** and **outputs** (i.e., the production function). In its simplest form, production consists of bringing together two productive inputs to produce some goods or service. In terms of the quantitative physical relationship between inputs and outputs — the production function — three outcomes are possible. Output can rise proportion-

ately faster than inputs, proportionately slower, or at the same rate. This relationship has been extensively studied within economics, and is the subject of the hypothesis of diminishing marginal returns which postulates that:

> "If increasing amounts of a variable factor are applied to a fixed quantity of another factor, the output per unit of the variable factor will eventually decrease."

Whilst it has been shown to be true in a wide range of circumstances, the hypothesis only suggests that output per unit of the variable factor will decrease; and, at any time, total output may still rise due to the effects of the specialization or the division of labour.

The second relationship is that between **inputs** and **costs**. It is frequently assumed that resource prices will remain constant as output rises. However, they may fall in response to such factors as bulk purchases, or may rise in response to increased competition for scarce resources.

The net effect of these two forces will determine the relationship between **costs** and **output**, and total costs will be determined both by the physical productivity of the inputs, and by their associated costs.

Whilst **total cost** (TC) provides a simple measure of the aggregate resource requirements of a particular scale of activity, most economic decisions are concerned with how much to produce, and so it is often useful to know how costs vary with different levels of activity. Two other measures are useful here. **Average cost** (AC) provides a measure of the costs associated with each unit of output and is calculated by dividing TC by the quantity of output produced. **Marginal cost** (MC) measures the rate of change in costs as output increases. Ideally, MC measures the cost associated with increasing or decreasing output by one unit. However, without a large number of observations or the use of statistical techniques, it is difficult to measure the costs associated with a single unit of output. Instead, the change in costs associated with several units is calculated, and then averaged to approximate MC.

Often the relationship between these measures can cause some confusion, although in practice it is quite straightforward. If output increases by one unit, total cost will rise by the marginal cost of that unit. If this marginal cost is equal to the average cost before the change, then average costs will remain unchanged. If marginal costs are greater than average costs, the average will rise (and vice versa).

2.2 Costs and output in the short and long run: fixed and variable costs

Cost analysis is frequently used to assist decision-makers in making choices about resource use. In practice, choice may be constrained by past resource commitments; and, similarly, present decisions will have future resource implications.

Often a distinction is made between those resources which are easily varied, and those which, at least in the short run, cannot easily be transferred from their present uses (i.e., buildings, equipment and permanent staff). The inability to transfer immediately some resources to other uses has important consequences not only for costs in particular, but also for resource use and efficiency in general. In the short run, output can only be varied by utilizing different quantities of easily variable resource inputs (i.e., drugs, and medical supplies). With a given level of fixed inputs there will be a given level of variable resources for which cost per unit of output is minimized. At this point, optimal use is being made of the fixed factors, and variations in the level of output can only be achieved at the expense of increased unit costs. In the long run, however, it is possible to vary all inputs, and the combination of fixed and variable factors may be varied to minimize unit costs for any level of output. The actual time period elapsing between the **short** and **long run** will depend upon the nature of the productive activity under study, and upon the characteristics of the productive inputs utilized.

It is also possible to study the relationship between inputs and outputs as the **scale** of production varies. If productive inputs are increased in proportion to each other, output may:

— increase at a correspondingly lower rate (i.e., diseconomies of scale); or

— increase at the same rate (i.e., constant returns to scale); or

— increase at a faster rate (i.e., increasing returns to scale).

The precise relationship will be determined by factors such as:

— specialization and the division of labour, which may help explain increasing returns at lower levels of activity; and

— the problems of managing large-scale production which may account for diseconomies of scale above certain levels of output.

An understanding of these output and cost relationships are essential if decision-makers are to arrive at an optimal quantum and amalgam of scarce resource inputs.

3. COMPONENTS OF COST

For conceptual convenience, costs (and hence, expenditures) are often classified according to whether:

— they vary with changes in the **scale** of production or in the volume of output produced (i.e., **fixed** versus **variable** costs);

— they yield immediate rather than long term consumption benefits (i.e., **capital** versus **recurrent** costs).

In practice, there is considerable overlap between these two forms of classification, as the following explanations seek to demonstrate.

FIXED COSTS (or overheads) refer to costs necessarily incurred in establishing a productive activity: they are borne irrespective of the scale of an activity or how much is produced. Examples include the salaries of permanent staff, the costs of buildings, and of medical equipment.

VARIABLE COSTS, conversely, are costs which are directly related to the scale of production and to how much output is produced. Examples of these include drugs, fuel, and vehicle maintenance. As most factors of production can be moved from one activity to another in the long term, fixed costs are usually defined as those costs which are fixed within a defined time period (e.g., the financial year).

RECURRENT (or operating) COSTS are those costs associated with the operation or maintenance of facilities or assets. Typically, they include the costs of:

— salaries and wages;

— equipment maintenance and spare parts;

— supplies such as drugs, dressings, fuel;

— utilities, such as electricity, water; and

— maintenance of human capital (i.e., on-the-job training).

Such costs recur over the life of a project, and may in fact increase towards the end of a project life as maintenance costs increase.

CAPITAL (or development) COSTS are those costs concentrated at the beginning of a project and associated with the establishment of productive capacity and physical infrastructure. These include the costs of:

— installation of plant and equipment;

— construction of buildings;

— purchase of vehicles; and

— investment in human capital (i.e., initial training).

In practice, there are often considerable difficulties in distinguishing between **capital** and **recurrent** costs. Their timing or periodicity is often used to classify costs, with recurrent costs defined as those which occur with greater than annual frequency; and capital costs those which occur at intervals greater than one year.

However, it has to be said that the one year distinction between capital and recurrent costs is largely a matter of pragmatism; and in recent years, this distinction has been questioned increasingly. The two can more realistically be viewed as lying at opposite ends of a continuum, the measure of which is the length of time over which expenditures yield benefits. Recurrent expenditures yield benefits for immediate consumption, whilst capital expenditures are those

which yield a stream of benefits over time. The area of ambiguity relates to the length of time which distinguishes (i.e., separates) the two. The greater the period of time over which expenditures yield benefits, the greater the claim that they are an investment in productive capacity (i.e., capital cost).

Some projects require that costs are incurred for the first few years of project life, after which they cease. These are capital costs in that they are essential to project start-up; but recurrent costs in that they recur over sequential years. This conceptual debate is reflected in the definitions adopted by a number of international institutions:

The OECD (1979) defined recurrent costs as those of:

> "... maintaining and operating a given project/programme during and after completion of the initial financing."

The Club du Sahel (1980) adopted a somewhat narrower definition of recurrent costs; and, by corollary, a wider view of what constitutes investment costs. They recommended that investment costs include those transitional start-up costs associated with establishing productive capacity, incurred up to the point at which the project assumed "normal operation". Consequently, they defined **recurrent** costs as:

> "The set of annual flows of gross expenditure of the government and its agencies, in local currency or foreign exchange, undertaken in order to generate socio-economic benefits in connection with the operation and maintenance of a unit of installed capacity, regardless of the source of finance of the expenditure in question, domestic or foreign."

Hence, they defined **non-recurrent** costs as:

> "... all expenditure incurred in connection with establishing this capacity, regardless of the nature of the expenditure (purchase of capital goods or current imports, personnel payments, etc.), the type of payment (in foreign exchange or local currency), and the source of financing."

This amounted to an implicit recognition of an intermediate cost category; which Gray (1986) subsequently described as:

> "... pseudo-recurrent costs of operating and maintaining productive capacity after the capacity has nominally been brought into existence, but before it has reached a stage of 'normal operation'."

UNDP/ILO also adopted a narrow view of recurrent costs (Jennings, 1983). They included, under development costs, many of the items which normally appear under recurrent budget heads, even though they may have a significant impact on long-term development.

As Waddington & Thomas (1988) correctly assert, these definitional problems are more than an issue of semantics:

— these changes represent a blurring of the traditional recurrent/capital dichotomy, and a change in emphasis from investment in physical infra-

structure towards the PHC approach of investment in human capital, health education and community involvement. This is necessarily a lengthy process with a less definite time-scale than physical investments;

— donors have traditionally been unwilling to support recurrent costs, and so a redefinition of the nature of capital costs may encourage them to widen the scope of their activities.

As will be seen below, such definitional ambiguities do make it difficult to interpret measures of the recurrent cost problem, as these rely on measured ratios between the two types of expenditures. Since cost studies have tended to vary both in the range of inputs costed, and in the definitions of recurrent and development expenditures adopted, there has tended to be no consistency in the numerator or denominator calculated. Differences in national accounting conventions compound the problem.

At the same time, definitional problems notwithstanding, it is possible to express the relationship between capital and recurrent expenditures as a numerical ratio: the Recurrent Cost Coefficient (RCC).

Simply expressed, if a district hospital is to be built at a cost of US$300 000 from donor contributions, and it is expected to cost the equivalent of US$100 000 in local currency to run the hospital each year, then the RCC would be 0.33. In other words, the r-coefficient measures the ratio of recurrent expenditure per annum to the total investment outlay. Data for clinics and hospitals in Jamaica and Costa Rica are discussed in Chapters 3 and 4.

Of course, most commonly, the calculation of RCC is based on historical data which makes it suspect as a basis for future decision-making. Whilst RCC's based on retrospective data can provide useful guidelines for financial planning and resource management, they are not a sufficiently precise tool to account for changes over time in methods of service delivery, or to reveal the effects on cost of such factors as:

— utilization;
— accessibility;
— case mix;
— project size or scale;
— the age and condition of capital stock; and
— the location of projects.

To take the example of location: remote health facilities often have higher capital costs resulting from differing service needs or from equipment requirements (e.g., the provision of staff accommodation). This shows that RCC's must be viewed with caution: firstly, where changes in local circumstances will affect both development and recurrent costs significantly; secondly, where over the passage of time, the nature of the provision of health care changes dramatically, as does the take-up of services. In theory, all these factors can be taken into account: but it does require more cost analyses than is implied in the simple (and simplistic) r-coefficient.

4. SYMPTOMS OF THE RECURRENT COST PROBLEM

Few health facilities in the LDC's are operating in ways and at levels that were initially intended. There is, in consequence, considerable documentary evidence of the recurrent cost problem and its symptoms.

- new hospitals unable to function because of a lack of staff or equipment;
- shortages of drugs, dressings and other essential medical supplies;
- facilities supplied with equipment but with no qualified staff to operate them;
- poorly maintained (and poorly functioning) buildings, equipment, facilities, etc.;
- transportation difficulties, and immobile vehicle fleets caused by lack of spares and/or fuel;
- a large number of unfilled posts;
- primary health care staff working unsupervised because of transportation difficulties which prevent senior staff from visiting remote facilities.

The consequences of these problems may be described in terms of:

— reduced efficiency;

— reduced service quality;

— reduced service quantity;

— reduced confidence in public sector facilities, with consequent low utilization;

— a shortened lifespan for capital investments due to poor maintenance; and

— low morale amongst staff with consequent absenteeism and high turnover.

5. THE NATURE OF THE RECURRENT COST PROBLEM

In essence, recurrent cost problems are the set of difficulties that result from an inadequate allocation of resources to meet the operating costs of capital developments. Inadequacy implies something about optimality or desired standards; and, technically, the problem may be defined in terms of the underutilization of

productive capacity through a shortage of variable inputs, even when the returns to those variable inputs would be greater than those to new capital investments. In other words:

> "A recurrent cost problem is a situation in which the government faces such budget stringency that it is unable to finance the recurrent costs of existing development projects when the stream of returns to the recurrent factor of production is much higher than that of new development projects." (USAID, 1982).

With a given budget constraint, governments should allocate resources between fixed and variable inputs so as to maximize the marginal revenue product or returns to each unit. Equilibrium is achieved where the marginal returns to fixed and variable inputs are equalized.

Of course, circumstances change and a failure to fund the recurrent costs of development projects may well represent a rational response to a different environment from that in which the project was initially conceived. Shortages of health workers, drugs, and funds allocated for maintenance may be a rational and considered response to the existence of more profitable investment opportunities elsewhere. USAID (1982) correctly assert that such actions do not constitute a recurrent cost problem as such. However, in many cases, there is evidence to suggest that despite a high rate of return to recurrent spending, recurrent undertunding has been accompanied by a simultaneous investment in new productive capacity. That is the nub of the problem.

In essence, therefore, recurrent cost problems arise from a disequilibrium in the allocation of resources between recurrent and capital spending. Although related to the notion of deviation from optimality, it is difficult to define optimality without recourse to technical criteria, or, as in Chapter 3 (Section 4) from historical comparisons. It may be useful to also ask whether or not resources are being used in a way conducive to long-term development objectives. Recurrent cost problems may then be explored with respect to two different societal goals:

— where there are insufficient resources to support **existing** levels of investment; and/or

— where there are insufficient resources to support **planned** rates of expansion or growth.

Traditionally, the health sector has been viewed as a nonproductive sector with limited income-generating capacity. While recurrent cost problems have been defined in terms of an inadequate provision of funds, the problem may be seen in terms of a failure of those investments to generate revenues in excess of their current resource requirements. Rather than adding to government funds, such investments constitute a net claim (and hence, a drain) on government funds, and thereby contribute to a vicious circle of underfinancing (Heller & Aghevli, 1985). Whilst not all projects need to generate revenues, it is self-evident that one cause of such problems may be that not enough projects are covering either all or enough of their costs.

6. DIMENSIONS OF THE RECURRENT COST PROBLEM

There are a number of dimensions to the recurrent cost problem:

Scope: The degree to which other sectors are affected by the problem, e.g., a failure of public health services to improve health, resulting in a diversion of private investible funds towards payments for private curative care (Heller & Aghevli, 1985).

Time: The greater the length of time that projects are underfunded, the less likely they are to ever reach optimal levels of operation; and the more likely they are to result in premature deterioration. Further, short-term problems, due perhaps to budget difficulties, may be reversible (Heller & Aghevli, 1985).

Repetition: Recurrent cost problems appear to be persistent in some places, and more so in some countries. This may in part be due to the vicious circle of effects that they set in motion: they not only reduce the efficiency of investments and halt development, but they impoverish a country, thereby creating future problems (Jennings, 1983).

Visibility: In some circumstances it may be difficult to identify whether a recurrent cost problem exists. This is in part due to the limited information available to planners. However, it is also true that some of the symptoms are difficult to identify: "The more subtle manifestations of the problem — the fact that a project is not providing optimal output levels — are not so easily discernible as the visible manifestations, and will not generally carry the political weight necessary to result in questioning the optimality of a government's allocation of budgetary resources." (Heller & Aghevli, 1985).

Pervasiveness: Since recurrent cost problems are the outcome of a large number of problems, it is difficult to develop a single or simple solution. There is no magic bullet approach to solving recurrent cost problems.

Scale: The scale of a recurrent cost problem may be assessed by considering the overall resource requirements of existing and anticipated developments, in relation to projections of the resources likely to be made available to meet them. A number of studies have attempted to quantify the resource requirements of Health For All 2000 (HFA2000) both nationally and globally; and it may be useful to now review their findings.

6.1 Estimating the resource requirements of health for all

PHC does not mean an end to other forms of health care. Indeed, the well-known difficulties faced in seeking to divert existing resources away from existing activities may suggest that the bulk of resources required for PHC will, in large part, have to be additional to existing resources on health care. The capital resource requirements for such developments are large, but the recurrent resource requirements are arguably even greater.

A number of writers have attempted to estimate the recurrent cost implications of PHC. For example, the Kasongo Project Team (1984) took an optimistic view of PHC costs, suggesting that PHC could be provided in Zaire for less than US$1 per capita per annum; that recurrent cost problems were unlikely; and that the scale of activities could be expanded without exceeding the US$1 figure.

This view has been challenged by several other recent studies:

— a Guinea Bissau study reports much higher per capita costs, partly due to higher geographical access, and partly to higher staff population ratios. A calculated recurrent cost coefficient of 0.26 suggests a need for ongoing support from donor agencies (Chabot & Waddington, 1987);

— an El Salvador study of the considerable expansion of PHC facilities between 1975 and 1985 observed that the recurrent cost problem manifested itself in manpower costs becoming a higher proportion of total recurrent expenditures, and that the consequent drug shortages contributed to reduced utilization and effectiveness of the new peripheral facilities (Fiedler, 1987);

— Golladay & Liese (1980) noted that, whilst the initial development costs of PHC are substantial, the RCC of PHC facilities may be as high as 0.5 In the very poorest countries, where simple facilities are used, the RCC may be greater than 1;

— de Ferranti (1985) estimated the global resource gap necessary to implement HFA to be some 14 times the existing total of external support for the health sector.

7. CAUSES OF THE RECURRENT COST PROBLEM

Whilst the consequences of insufficient funding for operating costs are undoubtedly problems in their own right, and whilst they undoubtedly contribute to further problems elsewhere, they can be better viewed as the outcome of a range of micro and macro factors. It is to the root causes that this text now turns, and offers as causal factors issues of: resource availability; national economic policies and plans; government attitudes towards cost recovery; poor cost information

systems; poor project design; political considerations; global economic considerations; weak planning, budgeting and resource mechanisms; the lack of incentives to efficiency; the price of past investments; and donor policy on grants and loans. It is argued that some combination of these factors lies at the root of recurrent cost problems in developing countries.

7.1 Resource availability factors

Expressed simply, recurrent cost problems may be the result of the inability of countries to generate sufficient resources. Hoped for recurrent expenditures may not materialize, or there may be specific constraints on the availability of certain resource inputs.

General resource constraints may be due to a country's limited capacity to generate tax revenues, to insufficient tax effort, and/or to a failure to recover all or part of the costs of services. Many LDC's have very limited domestic financing capacities as a result of:

- low per capita income;
- low or even negative growth rates;
- high family dependency ratios with low savings ratios; and
- large subsistence sectors and weak trading sectors.

In addition, tax systems are often inefficient; yields from direct taxation are nominal; tax evasion is widespread; whilst fiscal systems are rarely able to capture inflationary gains or profits resulting from speculative trade and investment. Even if it were possible to increase the tax ratio, this might have adverse consequences for producer incentives and economic growth. Deficit financing carries with it the risks of inflation, and in some instances is prohibited by IMF loan conditions. A number of studies have examined how a country's tax effort compares to its taxable capacity, and several studies have examined whether countries are maximizing their potential for increased resource mobilization. The general conclusion is that the possibilities for increased resources from increased tax effort/sources is minimal (Jennings, 1983).

Inflation has contributed to recurrent cost problems by reducing the real value of tax revenues over time. Non-salary-related expenditures have suffered as tax rates and revenues have failed to keep pace with inflation (Jennings, 1983).

At a more specific (i.e., local) level, resource unavailability may be due to constraints upon the supply of particular variable inputs. Foreign exchange constraints, for example, can result in a shortage of imported inputs relative to locally produced ones (i.e., drugs, fuel and supplies). A consequence of such problems is the high proportion of recurrent expenditures made on manpower relative to other recurrent inputs:

> "The ratio of those two indices is a useful measure of the degree to which there is an apparent underspending on materials and replacement of capital equipment, and thus, a likely foreign exchange constraint." (USAID, 1982.)

Local recurrent cost problems may also be the result of the inflexible structure and operation of government departments: for example, where recurrent expenditures are the responsibility of local government, but where revenue generation (i.e., user charges) are the responsibility of central government. If such problems are to be avoided, there is a need for a more flexible allocation of funds between sectors (Heller & Aghevli, 1985). This argument can be extended in support of resource transfers to the health sector from other revenue generating sectors; but only if the political will exists.

7.2 National economic policies and growth

Since, in many countries, increased real allocations of government resources to health will only be possible with increased economic growth, attention has focused on whether a country's economic policies are best suited to the maximization of growth potential. The Club de Sahel study (OECD, 1980) suggested that many of the policies of LDC's constrained economic growth prospects and thereby limited the capacity to generate additional resources. These policies included:

— interest rate controls and credit rationing;

— excessive government employment policies; and

— inefficient and over-extended public enterprise activity.

Singly, or in combination, one unwilling recipient of these problems has been the health sector.

7.3 The international economy

It is self-evidently the case that global economic problems have worsened the economic position of many of the LDC's today, and their capacity to fund the recurrent costs of health activities. Balance of payment problems have been exacerbated by rising costs of imports of fuel, capital equipment and spares, at the same time as demand for their exports has stagnated (in both price and quantity terms). Imports are often essential recurrent resources for the optimal use of fixed capital and for the success of development projects. Perversely, such problems are often magnified for the poorest of the developing countries. Cumper (1984) explains that the costs of items such as drugs, which are fixed internationally, are thus relatively more expensive for the poorest countries, where the relative costs of manpower are often much lower. Budgetary difficulties, combined with foreign exchange constraints, can, therefore, have a critical effect upon the efficiency of services in the poorer countries.

Most notably, a number of developments in recent years have had dramatic and largely unforeseen consequences for many developing countries (Abel-Smith, 1986):

— a sharp increase in the price of basic imports such as fuel;

— a sharp fall in the prices of principal exports;

— a sharp increase in international interest rates;

— an unanticipated surge in world inflation rates;

— drought in many countries (especially Africa).

In some countries, a combination of war and economic dislocation has led to both a reduction in the general level of resource availability, and a lower priority to health sector allocations (Fiedler, 1987). Where these and related changes are more than merely transitory in nature, revenue shortfalls will require a reordering of budget priorities to bring revenues and expenditures back into equilibrium. As many countries are discovering for themselves, that process is both painful and protracted.

7.4 Government policies with respect to cost recovery

Traditionally, many governments have been unwilling to introduce or extend charges for services at government facilities. Apart from the political issues that such policies generate, a number of arguments are often advocated in support of a deviation from normal efficiency pricing for health services:

— public good considerations, where the characteristics of non-excludability, and non-rivalness in consumption, make the price mechanism difficult to operate;

— certain goods and services are deemed to be too important to be left to market mechanisms to determine their production, distribution, and utilization;

— many governments have explicitly embraced equity as an objective of their health care policy, and seek to make health services more accessible than they would be if left to market mechanisms alone;

— the market for health services is subject to informational problems which prevent consumers from making appropriate consumption decisions.

The arguments for and against cost-sharing in the health sector, and especially for the use of charges in the government health service, can be found in de Ferranti (1985b) and Hoare & Mills (1986). One message that emerges from

that literature is that inappropriate pricing and subsidization policies can lead to unnecessary demands upon services, and a misallocation of scarce resources. Local resource shortages of funds for recurrent cost financing are often the result of failures to recover costs, and/or, the extensive subsidization of supposedly productive projects. A movement to economic prices may be desirable for more health care goods and services than at present is the case.

7.5 Poor cost information systems

Ideally, government budgeting and financial information systems should be able to provide basic information about resource use that would allow identification of:

— the recurrent implications of past investments; and

— the requirements of future scenarios and their affordability.

Yet, in the developing world, very few health service information and accounting systems are capable of routinely providing information in a form suitable for financial planning and management. What is required is a means of linking expenditures and resource use to activities; and, in particular, to:

— programmes;

— projects;

— institutions;

which would enable estimates of future recurrent resource requirements to be estimated. Most government accounting systems have been designed with the primary function of financial control and audit. Traditionally, these accounts are classified according to:

— spending ministry or department;

— development or current budgets;

— type of expenditure (e.g., salaries, equipment, maintenance).

Separate items usually exist for the two major items of health sector recurrent expenditures, namely:

— manpower; and

— institutional running expenses;

but these are often presented as global totals, so that the identification of cost out-turns (i.e., expenditures) by individual facilities or even by facility types is difficult if not impossible.

If separate budget heads do exist for recording:

— expenditures on national teaching or referral hospitals;

— expenditures for different types of facility, such as hospitals, health centres, clinics, and health posts;

then it does become possible to generate average costs for particular types of facility, by dividing totals by the number of facilities. However, even in these circumstances, certain items of expenditure may not have been included. For instance, expenditures on maintenance, transport and training are often incurred on behalf of the Ministry of Health by other ministries, and even where these expenditures can be identified, they are usually too aggregated to be able to identify the health component. Even where these items are the responsibility of the MOH, and appear as a consolidated item in the Ministry of Health accounts, it is then difficult to relate them to particular facilities. Where expenditures do not routinely correspond to individual health facilities, a crude costing exercise is often necessary through the direct observation of items such as manpower, drugs, and dressings.

Where routine information is available, it is often historical; and many countries are several years in arrears in completing their national accounts. With so little (useful) information available, it is hardly surprising that planners find great difficulty in quantifying the resource implications of alternative policy scenarios.

At the same time, budgetary information needs to be related to service objectives so that decision-makers can better evaluate the feasibility of the resource implications of alternative policy scenarios. Perhaps the root problem here is not so much the lack of information, but the lack of awareness and commitment to generating it. In the past there has been little recognition of the need to identify and measure recurrent costs, and consequently little demand to produce indicators for use to this end.

In the three country studies, levels of cost information on government health services were found to vary widely. Mali has so little expenditure information collected and returned from the *cercle* (district) level that a special survey was necessary to assemble and analyse these data. Special studies were also necessary in Costa Rica to determine cost structures at primary health care units, though hospital expenditure data are extensive. Jamaica has recently introduced a programme budget for its health sector to improve the managerial usefulness of its budget.

7.6 Poor project design

Recurrent cost problems may, in part, be the result of failures of project design. The underutilization of the capital stock may suggest that the returns to past investments were over-estimated at the project design stage (USAID, 1982).

Once projects are under way, costs are sunk, and it makes sense for governments to recalculate the returns to investments. Recalculations may differ from the original estimates for a number of reasons (USAID, 1982):

— government priorities may change;

— the original design may have been faulty;

— the prices of certain variables may have been inaccurately calculated;

— estimates of the time taken for projects to reach the operational stage may have been over-optimistic.

Also, projects may be inefficient, with low productivity and high levels of subsidization which encourage excessive consumption of subsidized inputs (e.g., free drugs and dressings). Further, the recurrent costs of government provision of services may be high because of inappropriate technologies, which utilize techniques of production with higher resource implications than necessary, e.g., diesel water pumps (Jennings, 1983). The result is higher costs per beneficiary for high technology curative systems as opposed to PHC systems using low technology means of health care delivery.

7.7 Weak planning, budgeting and resource mechanisms

Part of the problem is the fragmentation of responsibility for budgeting procedures in many countries. As noted above, many LDC's inherited national accounting systems whose primary function was that of audit and cost containment rather than resource allocation or efficiency. Often these systems had separate budgets for recurrent and capital expenditures; and, as a consequence, capital developments continue to be planned without regard for their recurrent cost implications. There is a tendency for projects to lose visibility once they are transferred from the capital to the recurrent budget, so that the additional expenditures required for new capital projects remain unquantified.

Also, as noted previously, in many countries the responsibility for recurrent expenditures on items such as building, vehicle and equipment maintenance is that of government agencies other than the MOH. Here there is a tendency for MOH planners to disregard these costs; and, consequently many hospitals suffer operational difficulties when there are insufficient funds allocated by these other ministries to meet the costs of the repair and maintenance of buildings and medical technology.

It follows that mechanisms for the macro-economic planning of recurrent costs are generally poor. Resource allocation is often on an **incremental** or historical approach, whereby allocations are based on the previous year's "approved estimates". This method is attractive because of its simplicity, and the fact that it avoids the need for explicit political decisions.

However, whilst this approach is easily operated in times of growing budgets, in times of contraction, this method of resource allocation invariably means that agencies are incapable of doing anything very well (Fiedler, 1987). In these circumstances, agencies will try and maintain what they judge to be "critical" expenditures, and sacrifice those which minimize damage to the agency and its personnel. A typical hierarchy of such **damage minimization** is:

— building construction;

— acquisition of new capital equipment;

— building maintenance and repair;

— materials and supplies; and, as a last resort

— personnel.

In the hope that such crises are transitional, agencies will try and maintain their investment in human capital; although it is true that beyond a certain point, reductions in expenditure on the items complementary to manpower will severely constrain the operational efficiency of health service delivery (Fiedler, 1987). Since these items may only account for 20% of total recurrent expenditures, to effect significant resource savings does require dramatic cutbacks (World Bank, 1987).

Whilst many ministries do plan for development expenditures, staff shortages often mean that recurrent expenditures are not calculated with either the same skill or attention to detail. Many ministries do experience real technical problems with the aggregation of recurrent resource requirements. Since very few projects imply recurrent expenditures that are very large in relation to total revenues, there is a tendency to disregard the effect of individual projects in aggravating recurrent cost problems (Heller & Aghevli, 1985). With little concern paid to the recurrent implications of individual projects, it is hardly surprising that there is almost no consideration of the macro- or supra-project aggregation of post-implementation costs (Heller, 1979).

Compounding the problem is a tendency for formal methods of project appraisal to permit bias towards items of capital expenditure. Economic appraisal compares total project costs with total benefits (as measured in terms of health status). Arguably, the financial prices of investment and recurrent expenditures do not reflect their true opportunity costs; a tendency reinforced by the process of discounting future costs (Waddington & Thomas, 1988). A project which appears justified on the grounds of economic appraisal, may well score poorly when subjected to financial appraisal which seeks to measure the flow of funds from the point of view of the agency managing the project. The recurrent cost problem is primarily a shortage of financial resources. However, evidence suggests that prices paid to factors of production in developing countries, as well as those paid for goods and services, frequently differ from those prices reflecting the relative scarcity or opportunity costs of those goods (OECD, 1989).

7.8 Lack of incentives to efficiency

An often-made remark about management in the health sector of developing countries, is that local managers are too limited in the freedom they have to deal with local problems. The need for greater flexibility and autonomy in dealing with local problems is commonly seen as a necessary condition for improving the quality of the managerial process for national health development. Thus, at the specific level, the World Bank (1987) proposes the development of incentives to better practice, such as allowing institutions to keep funds — in part or in whole — they generate through cost recovery mechanisms. Their proposal runs counter to the high degree of centralism evident in developing countries today and the desire of central government to ensure that all savings and revenues generated are returned to the Ministry of Finance for disbursal when, and if, considered necessary.

Empirical evidence on recurrent costs necessarily reflects the cost behaviour of the organization to which it applies. Unless and until decentralization of decision-making is a reality, together with the mechanisms of accountability, the derivation of recurrent cost coefficients may say very little about "efficient" forms of health care delivery.

7.9 The volume composition and timing of past investments: too much, too fast?

The nature, timing and quantity of past investments have contributed in part to the recurrent cost problem. Recurrent cost problems are due not only to the volume of past investments, but to their nature. The major expansion of investment in projects designed to meet basic needs has exacerbated recurrent cost problems, since sectors such as health, education and housing have high recurrent costs. Since in many countries these services have traditionally been provided free or at nominal charge, these investments have necessitated a net injection of public resources (Jennings, 1983).

In periods of positive, if modest, economic growth, it was possible to meet the associated costs of those development projects which represented a net drain on government revenues. However, since the 1970s, economic conditions have deteriorated and many countries have found themselves unable to meet their costs. However, even without this down-turn in economic activity, it is questionable whether domestic fiscal capacity would have been sufficient to meet the increased recurrent costs of the volume of such investments (Meerman, 1983).

Further, if it had been sufficient, a high level of new investment does exacerbate problems by making demands upon limited local administrative and technical capacity, especially scarce management skills. Donors may therefore contribute to inflationary pressures, making projects more expensive than they otherwise would need to be. One consequence is that many planning units in ministries of health are spending most of their time on submissions for donor monies, and little or no time on strategic planning issues.

The risk, thereby, of moving with indecent haste is a real one, leading to over-optimism in specifying the time required for projects to reach normal operation. Many projects require more than the nominal five years often selected for administrative and financial convenience. Indeed, many associated with manpower development, may require lead times of as long as 15 years before the recurrent cost implications of normal operation may become fully apparent (Jennings, 1983).

7.10 Political considerations

Since success in government is often measured in terms of project completion rather than long-term sustainability, politicians, civil servants, and development planners may tend to try to maximize the number and size of investments and accept all donor support irrespective of its recurrent cost burdens (Waddington & Thomas, 1988). In order to combat this failure to choose priorities, greater use needs to be made of techniques of economic evaluation and project appraisal to determine both the "worthwhileness" and "sustainability" of projects.

A further political dimension to the problem is that of the distribution of monies between the spending heads of governments. The low emphasis on meeting the recurrent costs of certain projects or sectors, may be less the result of resource insufficiency, and more due to the low political priority attached to the health sector. Priorities in spending change, just as do the priorities set by government, both central and local, but not necessarily in favour of the health sector.

7.11 Donor policy

It has been argued that the policies of many donor agencies have themselves had a significant adverse impact upon the recurrent cost issue. Heller (1979) noted that:

> "... In general, external aid flows have only exacerbated this problem by enabling a country to increase the level of its investment without directly encouraging the growth of recurrent revenues."

Certainly, donors have traditionally been unwilling to support recurrent costs, preferring instead to provide support in the form of capital funding. Their reasons include:

- a preference for investment assistance in encouraging a country's growth potential rather than on consumption goods and services;
- a fear of embarking on an open-ended commitment which may be politically unacceptable. Construction projects have a clearly-defined end-of-project status;

— concern that such support may encourage dependency rather than self-reliance;

— a belief that the greater the share of costs borne by the host country, the greater the level of commitment to project success;

— the high visibility, control and prestige associated with development projects;

— a fear of becoming too involved in internal politics; and

— a shortage of recurrent funds may in fact encourage LDCs to reappraise their financing options, including the politically sensitive question of user charges.

And yet, programme costs, such as those for immunization, often present severe recurrent problems. Whilst donors will often fund the cost of materials (e.g., vaccines), these costs are relatively small compared to the operational costs of service delivery (e.g., salaries, supervision costs, transportation of staff and vaccines, running and maintenance costs of refrigerators, etc.). Expanded Programme on Immunization costing studies have estimated that recurrent costs can constitute some 83% of total costs. Similar problems exist within supplementary feeding programmes, where cost of delivery can be up to 3.5 times the cost of the food itself (Waddington & Thomas, 1988).

These recurrent cost problems may be further exacerbated by conditions imposed by donors when funding projects. Tied aid, for example, may increase the costs of items such as spare parts, etc. Furthermore, donors may increase recurrent costs by promoting more expensive high technology solutions, and/or encouraging a larger scale of project operation than would otherwise be the case. In short: the root causes are many, and not all rest with the countries concerned. In consequence, not all the solutions are to be found within the developing world: the responsibility should be a shared one.

8. SOME PROPOSED SOLUTIONS

Recurrent cost problems are complex and their causes multiple. Since the problems are in part due to governments, part to the actions of donor agencies, and part to the effects of changes in the world economy, proposed solutions address a wide range of existing policies so as to:

— generate widespread awareness of recurrent cost problems;

— improve the poor state of existing information systems;

— generate a commitment to use the improved information to incorporate considerations of recurrent costs into planning and budgeting;

— develop a sound methodology for identifying and measuring recurrent cost requirements;

— promote a more rational use of scarce resources through the use of evaluative techniques (i.e., cost analysis and economic evaluation);

— mobilize additional resources via user charges, local financing for development projects, etc.; and

— increase donor support of recurrent costs.

The next section of this chapter discusses each "solution" in turn.

8.1 Increased awareness

UNICEF (1980) cites a growing awareness, on the part of all interested donor groups, of the full recurrent costs of different types of expenditure. Vehicles, for example, will, over their lifetime, require expenditures for such items as: fuel, oil, maintenance, driver costs, insurance and depreciation. Increasingly, donors are recognizing that effective utilization of such investments requires support for such expenditures and are now tending to support such costs by making provision for spare parts and maintenance costs.

Increasingly, also, many developing countries are becoming more discriminating of external assistance, and some have actually rejected donor support for new projects because the recurrent resource burden was deemed unacceptable (Heller & Aghevli, 1985). Of course, it is only possible if the government in question arrives at this decision because their national development planning process explicitly addresses the recurrent costs of existing and proposed commitments.

Opinions differ, none the less, as to the appropriate methods of dealing with the problems of reconciling recurrent and development costs. Some argue for separation of recurrent and development budgets on the basis that financial administration is technically different for the two (especially if the bulk comes from donor sources). Others argue that continued separation will further fragment planning (Waddington & Thomas, 1988).

8.2 Improve information systems

The inability of many governments to identify, at present, the recurrent costs of their health activities from routine data sources, clearly impedes any attempts they may make to identify what those costs might be in the future. The need exists for an information system that provides both a greater understanding of the determinants of the relationship between the recurrent costs and development costs of (say) hospitals; and more detailed information on the line items of cost themselves.

Currently, financial systems are designed primarily to ensure cost control, though they may allow the identification of what is spent on particular items; but, generally, they are incapable of identifying **where** (i.e., in which geographical area or institution); or **why** (i.e., for what reason or to what ultimate objective) those expenditures are incurred. The problem is made worse by the fact that it is often difficult to identify health expenditures that are the responsibility of other agencies, or those that are at present given freely. To rectify these gaps in knowledge is important, in order to estimate the overall resource requirements of new or expanded service commitments; and, also in determining the additional resources that would be required should responsibility for those other items be transferred to the MOH.

In studying costs it is often useful to have some indication of how costs vary with different levels of activity, or with different levels of coverage. Yet, even unit costs for different types of health facility are seldom available from central or local government accounts. In order to develop such indicators or standard costs, it is necessary to consider total costs in relation to some denominator of input, throughput, output, population or coverage. For example, it is important to determine, for different health services, the:

- cost per capita;
- cost per beneficiary;
- cost per unit of (intermediate) output:
  - cost per inpatient day;
  - cost per fully-immunized child.

What is currently missing, and much needed, is the development of a formal methodology for project preparation, and standard costing guidelines that would assist planners in the quantification of programme resource requirements.

8.3 Improve planning and budgeting systems, and resource management

There is a need for improvements in planning linkages to require decision-makers at all levels to be more fully aware of the consequences of their decisions. This will require improved links between planning and budgeting so that decisions can be related to considerations of overall resource availability, and improved links between planning and management so that managers are better able to understand the resource consequences of their decisions (Waddington & Thomas, 1988; Heller & Aghevli, 1985).

At present responsibility for capital and recurrent cost planning is often fragmented, so there is no guarantee of matching capital growth to recurrent capacity. There is a need for formal mechanisms for incorporating considerations of resource availability and requirements into project planning, in order that a Financial Master Plan can be produced (Abel-Smith & Mach, 1983). Incremental

budgetary practices of the past, whereby health budgets were determined by incremental adjustment to the previous year's allocations without reference to plans or resource availability, should be abandoned forthwith.

In addition, it is important that efficiency considerations be built into the appraisal of projects:

> "... there is a need to undertake, and to institutionalize, the ability to undertake quality and efficiency evaluations of MOH services", and thereby, "... enable the more conscious and rational planning and managing of that system; including the avoidance of the most debilitating effects of recurrent cost shortfalls." (Fiedler, 1987).

For instance, it may be that the level of recurrent cost financing is adequate; but that the other types of inputs currently purchased are inappropriate and inefficient. In other words, recurrent costs may be overfinanced in the sense that needlessly expensive inputs and techniques are employed to produce a given mix of outputs. Techniques of economic appraisal may usefully be employed to identify the possibilities for improved economic efficiency, such as:

— the substitution of less expensive, but no less efficient, cadres of manpower for the existing stock;

— the use of less costly, but no less efficacious, drug regimes;

— questioning the need for the number and extent of diagnostic services requested.

8.4 Mobilize additional resources for health

The Club du Sahel group (1981) introduced the notion of a cost recovery coefficient as follows:

> The Recurrent Cost Recovery Coefficient (RCRC) is a measure of the ratio of such receipts to total recurrent costs in a year of normal operation. The value of this coefficient will vary, and may even exceed unity for projects which generate revenues in excess of the recurrent costs associated with them.

A number of problems have been discussed in the Sahel Group paper, which make clear the considerable difficulties in attributing revenues to projects, and measuring net attributable revenue. Further, whilst the RCRC may be useful in assessing the impact of projects on government finances, the Club du Sahel warned that it should not be considered an alternative criteria of project selection to economic appraisal. Otherwise, this could lead to the rejection of worthwhile projects with no revenue-generating capacity (e.g., free primary education).

What is widely recognized is the need to broaden the range of financing options so that recurrent costs are not seen to be the sole responsibility of international

agencies, governments or individuals. At the macro level, there is a clear need to improve domestic financing capacity and the recurrent revenue recovery factor through improvements in fiscal systems and domestic savings. It is doubtful, however, whether such efforts will be sufficient.

Expressed bluntly, if recurrent cost problems are due to resource insufficiency, an obvious step is to try and increase the resources allocated to the health sector. In the past, recurrent cost problems in the health sector were seen by some as an inevitable consequence of its status as a non-productive service sector, without revenue-generating potential. This view is increasingly being challenged, however, and several options for increased health sector resource mobilization are now recognized which include increased government allocations towards under-financed sectors. However, the chances of increasing government budget allocations are poor, with low and even negative growth rates projected for many developing countries (World Bank, 1987; UNICEF, 1988). Those countries spending least on health care are generally those that are poorest, have the least taxable capacity and least money to spare beyond that required to provide for essential human needs. Deficit financing remains a possibility, although this carries with it the danger of inflationary pressures, and international scrutiny of motives and financial stringency.

An option being considered by a number of developing countries that have not already done so, is the introduction of compulsory health insurance — initially for those in regular employment. The rationale for this approach is that if employees, who are generally on average better off than the rural self-employed, can be made with the help of their employers, to pay for their own health services, the limited tax money can be redeployed to finance the recurrent costs of services for those not covered by health insurance. As those in regular employment are disproportionately employed in urban areas, tax money can be switched towards the rural areas. The services paid for by health insurance may be both those in the public and private sectors. The objection to this approach is that it seems likely at first sight to increase the prices of goods produced by the firms covered by insurance. But in some countries (e.g., Indonesia and Nigeria), it has been found that larger employers are already spending more on the health care of their employees than they and their employees would have to pay under compulsory health insurance. This is because they are not efficient purchasers of health care. How far this approach is worthwhile depends, of course, on the relative size of the employed labour force in a particular country. Compulsory health insurance is considered in each of the three case studies which follow.

According to a recent World Bank policy paper (1987), many LDC's can now afford only a low per capita subsidy to health services; so that providing free publicly funded curative services for all, translates into free and adequate services for some and inadequate services or none for others. The World Bank (1987) proposes:

— the transfer of some of the responsibility for health services to the private sector and to nongovernmental organizations;

— greater use to be made of market mechanisms;

— the decentralization of services to encourage greater efficiency; and

— greater incentives to efficiency, such as the retention of fee income at as low a level as possible.

User charges for health services are currently being introduced, increased or considered by many countries. Evidence already suggests that user charges can effectively be employed to generate health sector support. In Ghana in 1986, 15.4% of total MOH expenditures came from user fees although this was not without consequences for utilization, especially in the rural areas (Vogel, 1987; Enyimayew, 1988; Waddington 1988).

Free services at the point of consumption have in the past been justified on equity grounds. However, free services are often inequitably distributed and are a poor way of targeting resources towards the poor. Resources are inadequate to provide services free to all, and the introduction of charges may allow services to be distributed more widely whilst still meeting other development objectives.

However, a decision to mobilize additional resources through increased cost recovery does not determine the form that it should take. Questions of:

— what to charge for;

— whom to charge and whom not to charge;

— how to charge; and

— how much to charge;

need to be addressed and answered carefully.

The World Bank (1987) suggest the following possibilities, regarding what to charge for:

— hospital charges for private patients;

— drug charges;

— bypass fees;

— modest inpatient fees (e.g., fixed fee or per patient day for hotel charges for linen and food; or for direct patient services on drugs or laboratory fees); and

— outpatient fees (i.e., registration fees).

User charges may stimulate the growth of local community insurance schemes to prepay them. The Ministry of Public Health in Thailand has made vigorous and successful efforts to promote prepayment in rural areas by its health care scheme. If user charges are ever to be more than modest, considerations of equity require some mechanism to exempt the poor from them, as suggested by the World Bank. But it is extremely hard to develop such a system which works effectively. Either many more people become exempt than intended or exemption fails to reach all those it is intended to reach. Both problems can be found at the same time. Increases in user charges are also considered in each of the following country studies.

8.5 Changes in donor policy

There is a strong prima facie case for donors to respond to the increasing crisis over recurrent cost problems by modifying their own investment programmes accordingly. Increased aid *per se*, is only likely to compound the recurrent cost problems faced by many nations in receipt of aid monies. What is needed is a qualitative change in aid to ensure that investment efforts are not wasted (Fiedler, 1987).

More emphasis needs, therefore, to be given to ensuring that existing investments operate effectively, and less emphasis needs to be placed by donors on their support for development costs only. What is needed is a broadening of financial support for sectors, to include activities which extend beyond the plan period; are not easily costed in advance; are widely spread geographically; and require a variety of inputs (e.g., technical cooperation, local and foreign exchange, current and capital financing).

It may be that donor support for recurrent costs is increasing, and may be justified in some circumstances. In particular:

— where the returns to recurrent cost financing are greater than those to new investment;

— where the host country is unable to meet those recurrent costs themselves; and

— where a plan exists for the eventual transfer of responsibility for recurrent costs back to the host country, and is agreed upon by both parties.

Encouragingly, in recent years, the rigid distinction between capital and recurrent expenditures has been blurred. Increasingly, investments in education (human capital) and research (knowledge) are recognized to yield benefits over several years, and are accordingly being classed as investments. Similarly, maintenance of capital investments, either in human capital or physical, may be viewed as a gross (if not a net) investment. Health care (including manpower and drugs) may be viewed in this respect as investments in maintaining the quality and quantity of the capital stock.

Undeniably, donors will increasingly need to consider providing more aid for the local and recurrent costs of development projects; and for greater assistance for foreign exchange and local currency requirements, for finite periods, with arrangements for take over by the recipient country. Such assistance may be especially important for projects of a social non-revenue-generating nature. Donor assistance may be particularly relevant to alleviate bottlenecks in management, maintenance, repair and physical infrastructure. Donor support for the local costs of development projects may also free up resources for the support of recurrent costs.

8.6 Improve measurement and projections

So as to be able to assess the resource implications, and thus, the affordability of service upgrading or new facilities, health service planners in developing countries have attempted to develop simple indicators or "rules of thumb" to describe the enormity of their problems. A number of crude indicators have been discussed, which variously attempt to:

— indicate the existence of recurrent cost problems; and/or

— provide some warning of potential recurrent cost problems in the future.

Most of the indicators developed have been based upon the calculation of expenditure ratios for different types of expenditure. Thus, the Recurrent Cost Coefficient (RCC) was first developed as a predictive tool by Heller (1979), who suggested that the ratio of net annual recurrent expenditures to total investment expenditures, could prove useful to donors and governments alike.

Stephens (1985) developed the RCC further, and suggested that capital expenditures which exceed between one-third and one-quarter of total budgetary resources, are likely to result in recurrent funding difficulties, unless they are accompanied by either:

— rapid rises in GDP and the revenue base; or

— a willingness of donors to provide increasing and indefinite external support for recurrent costs.

Several studies have attempted to identify the size of the recurrent cost problem by reference to disproportionate expenditures on certain recurrent items. Resource constraints affect different types of expenditure differently: a difference most readily observed between expenditures on manpower (i.e., wages and salaries), and expenditures on other goods and services (i.e., operations and maintenance, drugs, supplies). Shortages of skilled manpower in many developing countries mean that the public sector has to compete with other sources of employment; whilst a shortage of recurrent funds means that manpower has to compete with other activities for resources. In times of budgetary constraint, expenditures on manpower-related items are subject to greater downward rigidities than others (Heller & Aghevli, 1985). It is a fact of life that priority is usually given to expenditures on governmnent salaries, social insurance schemes, and servicing the public debt (Jennings, 1983).

Gray & Martens (1983) examine the ratio of recurrent expenditures on "other goods and services" to those on "manpower" (i.e., salaries and wages), to develop a "coefficient of effectiveness". Since, in times of financial stringency, it is manpower-related expenditures that are often most vigorously defended, a rising percentage of manpower costs to total costs, may indicate that the efficiency of that manpower is being constrained by shortages of equipment, drugs, and vehicles.

Though intuitively appealing, the value of this particular measure is limited in a number of ways. First, no one ratio is suggested as being an optimal distribution

of recurrent expenditures between manpower and other costs. Second, it gives little indication of the adequacy of manpower expenditures in real terms; and, third, it does not address the relative price differences for manpower across regions and countries.

A number of other diagnostic indicators, to highlight the future likelihood of recurrent cost problems, have been calculated from retrospective data on public expenditure and revenues (Heller & Aghevli, 1985), namely:

— foreign financing as a share of total expenditure;

— capital expenditure as a share of total expenditure;

— foreign financing as a share of capital expenditure; and

— the buoyancy of government revenues.

The only one indicator which seems to have any predictive strength is that of the proportion of capital expenditures financed externally; presumably because external support for capital development significantly increases that which would have been possible from the country's own domestic fiscal capacity. Although the measure is far from perfect, the average ratio for countries with a perceived recurrent cost problem is 60%, compared with 26% in those countries where it is not perceived as a problem. Data for Mali in Chapter 2, Table 6 shows a dramatic increase — from 47.7% to 91% in the share of "investment expenditure" financed from nongovernment services in a recent five-year period.

Another possible indicator of problems is the proportion of recurrent expenditures allocated to essential functions of government such as civil functions, income distribution, transfers and subsidies, interest and debt repayment problems. Expenditures on these will affect the resources available for operational and maintenance costs; and so, in trying to identify the existence of recurrent cost problems, it may be useful to look also at the extent of other claims on domestic resources.

The calculation of recurrent cost coefficients have long been used by private and public sector planners in developed and in developing countries. The usefulness of such a tool varies from country to country and even within countries, according to:

— differences in relative factor prices;

— mobility of factors; and

— a country's level of development.

However, the use of an RCC is beset by a whole host of problems:

— when do "normal" operations start? and, consequently

— what costs enter into the numerator?

— what costs are to be measured, and in relation to what measure of effort? (issues of scale, i.e., costs of road per kilometre).

Whilst still useful as a broad guide to planning, these summary indicators cannot by definition account for the particular characteristics of the environment in which they may be applied:

> "At the same time, it is obvious that using an r-coefficient to estimate a project's recurrent costs will normally involve a lesser degree of accuracy than a detailed analysis of the different cost components peculiar to the project in question." (OECD, 1980).

Therefore, if greater precision is required when predicting future recurrent costs, more detailed analysis is required. First, some analysis of production functions is required so as to be able to better understand the relationship between costs and their determinants. Various factors can be demonstrated to influence the operational costs of health services, including:

— the relative prices and combination of inputs, such as buildings, equipment, doctors, nurses, drugs, vehicles, etc.;

— characteristics of the patients seen (i.e., case-mix and case-severity/comorbidity);

— the production techniques employed (i.e., methods of service delivery);

— quality and performance issues; and

— levels of service coverage.

As Mills (1987) observes, hospitals not only consume a high proportion of the expenditure of the Ministry of Health on items such as manpower and drugs, but, because they employ staff of high social and political status, tend also to dominate the scarce time and attention of senior health officials.

Given the relative importance of hospitals within the health sector of many developing countries, a greater understanding of the determinants of their costs can help in developing planning and budgeting methods that will help improve government control over hospital behaviour and thereby increase economic efficiency.

When examining the variation in unit costs between hospitals in a country or region it is possible that some of the explanations are because of differences in:

— hospital size (e.g., number of beds);

— activity levels or throughput (i.e., the number of cases treated);

— occupancy levels;

— the length of stay of patients;

— characteristics of patients (i.e., case or diagnostic mix; or case severity);

— the quality of care provided;

— the presence of teaching or research activities;

— the age and/or location of hospital facilities; and

— manpower availability.

Using the information derived from such analyses, it should — for instance — be possible to improve those aspects of hospital physical and operational design that most affect operational and maintenance costs, including:

— ward layout;

— building design;

— equipment choice.

In health systems generally, there exists considerable potential for management to reduce the recurrent costs of programmes through the better management of existing resources. Hence, in the area of drugs and medical supplies, there is scope for improved drug purchasing and distribution, as well as the encouragement of good prescribing practice. Such changes emerge from the study on Mali as offering the greatest scope for short-term relief of that country's health sector recurrent cost problem.

8.7 Maintain equilibrium in resource allocation

Since recurrent cost problems are rooted in an imbalance between the allocation of resources to the investment portfolio and the optimal utilization of that portfolio, it is important to be able to anticipate any changes which may upset the equilibrium position. This may entail that simple projections be combined with consideration of (USAID, 1982):

— the realism of development plans;

— the timing of development expenditures;

— the possible responses of the donor community;

— possible changes in government priorities;

— possible changes in legislation on taxation, user charges, revenue collection, etc.;

— likely rates of growth and inflation during the plan period; and

— possible changes in international prices and the terms of trade.

In short, a wide range of variables will need to be examined in relation to projected macro-economic trends in government revenues and expenditures (USAID, 1982):

— taxation by type;

— other non-tax revenues;

— foreign assistance;

— expenditure by type;

— transfers and subsidies;

— interest and debt repayments;

— capital expenditures;

— the recurrent cost implications of capital expenditures.

These may be related to the trends in government revenues and expenditures on health care, differentiated between capital (development) and recurrent (annual) costs. It is not too wide off the mark to say that such analytical work is still in its infancy in the developing world.

9. SUMMARY AND CONCLUSIONS

If resources were unlimited there would be no such thing as recurrent cost problems. Recurrent resources could always be found to make optimal use of existing investments in physical and human capital. However, resources are limited and always will be, and planners recognize that such constraints exist. It is not, repeat not, the existence of gross resource deficiencies that are the root cause of these problems, since, whatever the level of available resources, there must be some optimal distribution that will allow a given capital investment to be optimally used.

It is clear in many developing countries, that the prevailing position is remote from any notion of optimality, and even of acceptability. The causes of this problem are numerous. At the root of the recurrent cost problem is the inability to achieve this optimal balance, and, crucially, to be able to maintain that balance over time. The problem has a number of dimensions, and may be seen in terms of:

— factors which are within the control of planners and those which are not; and

— factors which may be anticipated, and those which cannot.

Is, for instance, a failure to fund the operating and maintenance costs of PHC services due to: a general shortage of recurrent resources; a shortage of particular inputs; inadequacies of the government's revenue-generation efforts; or, a conscious decision that such allocations are no longer desirable for economic or political reasons? Unless the precise answer is known, the solution is elusive.

Clearly, it is preferable for such circumstances to be predicted so that avoiding action could be taken. Today, this is hampered by informational deficiencies, and there is a need for improved financial planning and management information systems which can make available timely, adequate and reliable information and present that information in a form suitable for decision-makers (e.g., information on costs on a programme-by-programme basis). This should be capable of indicating the capacity of the recurrent budget to absorb investments (known and planned).

If the problem is such that an investment in any one project will have net recurrent cost requirements beyond the means of the government to support them, a number of remedies are possible. On the **expenditure** side, governments can:

- modify the allocation of resources, and reduce the scale, or speed of new investments; and

- reduce the recurrent resource requirements of those projects.

On the **revenue** side, government can mobilize additional resources through partial or full cost recovery which, depending on the means, may also have the effect of reducing demand. Policy options of both general types are considered in the following case studies.

CHAPTER 2
MALI

by Amadou Koita[1], Joseph Brunet-Jailly[2], Seydou Coulibaly[3], and Kafin Diarra[3]

INTRODUCTION

Mali is one of the poorest countries in the world. The World Bank estimated the per capita gross domestic product as US$180 for 1986. The population is 7.3 million, the infant mortality rate is estimated as 150 per 1000 and the expectation of life at birth is estimated as 45 years.

The health services are organized at five levels. At the lowest level are the village health centres and village drug shops staffed by village health workers or traditional birth attendants. Above these are rural maternity centres and dispensaries staffed by health assistants and midwives which serve groups of villages. At the subdistrict level are health centres staffed by professional nurses. At the district level are the principal health centres and either a district hospital or a surgical block attached to the health centre.

Secondary and regional hospitals are intended to provide inpatient and ambulatory care for cases which cannot be treated at lower levels. Finally, at the national level there are three national hospitals and specialized services such as the national blood transfusion centre, the Marchoux Institute for Dermatology, and Institut d'Ophtalmologie Tropicale Africaine (IOTA) for Ophthalmology. Each province has directorates responsible to the Ministry of Health. At the district level, there are public health offices and community development centres to provide technical support. The People's Pharmacy of Mali (PPM) has, in theory at least, a monopoly for the importation of drugs and has a large number of retail shops and stores. There are separate services for the armed forces.

The Social Security Institute (INPS) has about 60 000 members and is estimated to serve 250 000 persons. It provides medical inspections, compensation for work accidents and occupational diseases, antenatal care and curative care for members and their families at three preventive clinics and 15 medical centres.

Until 1985, private medical practice was forbidden and there are still very few wholly private doctors. The role of illicit practice by government health staff is much more considerable than that of traditional practitioners. The nonprofit private sector is very small.

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PART I
THE ANALYSIS OF TRENDS, 1983-1987

1. THE FINANCING OF THE HEALTH SERVICE

While for the other two countries, data on financing and health services activity could be pieced together from the accounts and statistical returns at the central level, this information for Mali had to be specially collected for this study. Investigators were recruited with college or university degrees, given a month of training and sent out to provinces and districts with different questionnaires for hospitals, district centres and central services. The questionnaires were completed from such records as were available: some of them were missing, poorly maintained or incoherent. There were also problems in identifying the full cost of foreign aid. The figures for 1986 and 1987 are believed to be more reliable than those for the earlier two years. The scope of the study included the costs of training of health personnel, but excluded the provision of drinking-water, sanitation and nutrition.

1.1 Financing of the organized services

In Table 1, the investment and recurrent costs of the services of the Ministry of Health are shown. The definition of investment expenditure is based on the concept of use extending over one year. Thus, it includes not only building works but vehicles, equipment, furniture and bedding. Investment expenditure varied between 12% and 19% of total expenditure in the years 1983-1985. It is noticeable that total expenditure fell in two years (1984 and 1987) compared with the previous year. No special price index for health services is available.

Table 1
INVESTMENT AND RECURRENT EXPENDITURE
ON ORGANIZED SERVICES, 1983-1987
(Billion CFA francs)

	1983	*1984*	*1985*	*1986*	*1987*
Investment	1.2	1.0	2.2	2.5	2.6
Recurrent	8.4	7.8	10.0	11.8	11.2
	9.6	8.8	12.2	14.3	13.8

The sources of finance for investment expenditure are shown in Table 2. Investment from the budget fell sharply in 1984 and then increased again up to 1986, but not back to the level of 1983. The role of international organizations in financing investment expenditure increased dramatically: they financed less than 3% of investment in 1983 but well over half the investment from 1985 onwards.

Table 2
SOURCES OF FINANCE FOR INVESTMENT EXPENDITURE ON ORGANIZED SERVICES, 1983-1987
(Million CFA francs)

Source	*1983*	*1984*	*1985*	*1986*	*1987*
Budget (national or provincial)	632	245	295	443	332
Other public	135	106	96	79	57
User charges	2	—	—	7	44
Other private	3	3	10	5	6
Rural development agencies	3	11	3	7	4
Bilateral cooperation	50	266	33	57	234
International organizations	30	101	1610	1530	1511
Nongovernmental organizations	231	129	124	339	320
Social Security Institute	122	159	18	22	52
Total	1208	1020	2189	2489	2560

The sources of finance for recurrent costs show a different picture (Table 3). The largest single source of finance for recurrent costs each year is not the budget but "other private". The revenue from user charges allocated to recurrent costs did not finance more than 2.25% of the total. The highest contribution from nongovernmental organizations in any year was 3.6% of recurrent costs. The major change was the increasing role of bilateral cooperation and international organizations in financing recurrent costs from 1.7% in 1983 to 3.8% in 1987. But even in the last year their absolute contribution to investment was about four times greater.

Table 3
SOURCES OF FINANCE FOR RECURRENT EXPENDITURE ON ORGANIZED SERVICES, 1983-1987
(Million CFA francs)

Source	*1983*	*1984*	*1985*	*1986*	*1987*
Budget (national or provincial)	2925	2975	3971	4115	4365
Other public	60	78	81	91	78
User charges	146	158	158	236	149
Other private	4441	4106	4742	6472	5433
Development agencies	3	1	1	8	7
Bilateral cooperation	3	3	24	43	136
International organizations	81	108	179	254	287
Nongovernmental organizations	61	95	359	245	288
Social Security Institute	647	295	450	378	456
Total	8367	7819	9965	11842	11199

The analysis of recurrent costs by level (Table 4) shows a decline in the proportion going to the districts except for a marked increase in 1986. The proportion going to hospitals increased from 13.4% in 1983 to 17.4% in 1985 and then fell, by about 2%: proportionately more was spent on hospitals in 1987 than 1983.

Table 4
RECURRENT EXPENDITURE ON ORGANIZED SERVICES BY LEVEL, 1983-1987
(Million CFA francs)

Level	*1983*	*1984*	*1985*	*1986*	*1987*
Districts	5 291	4 916	5 881	7 638	6 850
Provincial administration	67	60	75	113	103
National hospitals	574	623	931	1 086	934
Regional hospitals	340	364	532	438	479
Military hospitals	210	235	269	297	363
Institutes	284	336	402	534	602
Other national services	134	97	86	143	112
National administration	818	890	1 340	1 216	1 301
Social Security Institute	647	295	450	378	456
	8 365	7 816	9 966	11 843	11 200
Percentage devoted to districts	63.2	62.9	59.0	64.5	61.2
Percentage devoted to hospitals (national, regional and military)	13.4	15.6	17.4	15.4	15.8
Percentage devoted to administration (national and provincial)	10.6	12.1	14.2	11.2	12.5

In Table 5 is shown recurrent expenditure by type. Over half of the expenditure appears to go on personnel. It should, however, be pointed out that, except in military hospitals, the cost of drugs in hospitals is mainly paid by the patients. A study of one national hospital in 1984 showed that 91.5% of pharmaceutical costs were paid by the patients. It should also be pointed out that sales by the drug monopoly (PPM) are excluded.

Table 5
RECURRENT EXPENDITURE ON ORGANIZED SERVICES BY TYPE, 1983-1987, EXCLUDING PATIENTS' PAYMENTS FOR PHARMACEUTICALS
(Million francs CFA)

Type	*1983*	*1984*	*1985*	*1986*	*1987*
Pay or personnel	2 619	2 492	3 006	3 169	3 601
Pharmaceuticals	466	401	762	731	1 047
Others	841	866	1 477	1 695	1 512
Total	3 926	3 759	5 245	5 595	6 160

The distribution of expenditure between government and other sources is shown in Table 6. This brings out the sharply declining role of government in financing investment expenditure, falling from 53% in 1983 to 9% in 1987. In the case of recurrent expenditure, government finances 35-40% in the different years.

Table 6
PERCENTAGE DISTRIBUTION OF EXPENDITURE BETWEEN GOVERNMENT AND OTHER SOURCES, 1983-1987

	1983	*1984*	*1985*	*1986*	*1987*
Investment expenditure					
Government	52.3	24.0	13.5	17.8	9.0
Other	47.7	76.0	86.5	82.2	91.0
Recurrent expenditure					
Government	35.0	38.0	39.8	34.8	40.0
Other	65.0	62.0	60.2	65.2	60.0

In Table 7, expenditure in 1987 is divided both by level and source of finance. The budget disproportionately finances hospitals and administrative costs rather than district expenditure while other public funds are devoted nearly wholly to the district services.

The revenue from charges goes disproportionately to the hospitals and other services. Other private expenditure and that of development agencies goes almost wholly to the districts. Bilateral cooperation goes disproportionately to hospitals and other services, while finance from international organizations goes heavily to administration and other services. Expenditure of nongovernmental organizations goes disproportionately to hospitals and other services.

Table 7
THE DISTRIBUTION OF FUNDS BY LEVEL AND SOURCE, 1987
(Percentage distribution)

Sources	*Districts*	*Hospitals*	*Administration*	*Other*	*Social Security*	*Total*
Budget	23.5	38.4	31.6	6.6	—	100.0
Other public	95.6	4.3	—	—	—	100.0
User charges	15.2	25.4	—	59.4	—	100.0
Other private	99.9	0.1	—	—	—	100.0
Development agencies	100.0	—	—	—	—	100.0
Bilateral cooperation	11.1	19.8	31.8	37.2	—	100.0
International organizations	35.7	3.4	50.3	10.6	—	100.0
Nongovernmental organizations	57.4	24.8	2.2	15.6	—	100.0
Social Security Institute	—	—	—	—	100.0	100.0
Total	56.2	15.6	18.3	6.2	3.7	

1.2 Expenditure on nonorganized services

The nonorganized services include traditional practitioners and private practice (most of it clandestine) and transport costs related to sickness.

1.2.1 Traditional practitioners and traditional services

In different years, between 1981 and 1988, eight local surveys of household expenditure on traditional practitioners and medicines have been conducted. They yield figures varying from 68 francs CFA per inhabitant per year found in three areas, up to 260 francs CFA per year in Bamako (the capital), 272 francs CFA in Didieni and 348 francs CFA in Kita. These data suggest that expenditure on traditional practitioners and traditional medicines cannot exceed 2 billion francs CFA.

1.2.2 Pharmaceuticals

Although the PPM has, in theory, a monopoly of drug sales, several agencies import their own drugs directly (the Social Security Institute, the armed forces, nongovernmental organizations, embassies and international cooperation agencies). In addition, there are illegal imports from neighbouring countries — Algeria, Côte d'Ivoire and Mauritania. It should also be noted that some PPM branches, despite instructions from headquarters, sell drugs at prices higher than the official ones.

Thirdly, in all the hospitals and other health units, a certain amount of drugs are pilfered and some of these are sold to the sick. Fourthly, the high sales recorded for the PPM branches in Bamako suggest that purchases are made for resale elsewhere at a profit.

For all these reasons, calculations of pharmaceutical sales based on PPM sales, using official prices, seriously underestimate the cost falling on the public. It is much more reliable to base estimates on household expenditure surveys. Seven local surveys have been conducted between 1981 and 1987. They have found average expenditure per head per year varying from 342 francs CFA to 1058 francs CFA. This suggests that expenditure on pharmaceuticals may amount to about twice the turnover of PPM — around 12 billion francs CFA.

1.2.3 Private expenditure on health services

Although the private practice of medicine has been legal since 1985, there are only five doctors and one dentist in private practice, all in Bamako. Including midwives and nurses, there are a maximum of 12 health professionals in private practice, but the bulk of private practice is clandestine, conducted by health professionals who are full-time employees and by persons without any qualifications at all. Only two local surveys are available to estimate the extent of illicit practice. In one rural area, when the official consultation fee was 50 francs CFA for children and 100 francs CFA for adults, actual payments amounted on average to 686 francs CFA, of which 232 francs CFA was paid in cash and 454 francs CFA was paid wholly in kind. A survey in Bamako indicated that one in three consultations were paid for. The average charge was 1500 francs CFA for a consultation with a doctor and 1700 francs CFA for a consultation with a nurse or at a health centre. It is not unreasonable to estimate that clandestine private practice may have an annual turnover of 500 million francs CFA. This does not seem too high as it is less than 20% of the salaries of employees of the Ministry of Health.

1.2.4 Transport costs related to sickness

Only one survey, covering three local areas, is available which attempted to measure transport costs. The results varied from 6 francs CFA per head per year and 12 francs CFA per head per year in towns with ready access to health services, to 51 francs CFA in towns with poor access. On this very limited data, it seems not unreasonable to assume that transport costs are 10 francs CFA per head per year for the population living in the main towns and cities and 50 francs CFA for the rural population. On this basis total transport costs are around 300 million francs CFA.

2. TOTAL RECURRENT COST OF HEALTH SERVICES

In Table 8 estimates of the total cost of health services are brought together by source of finance.

Table 8
TOTAL EXPENDITURE ON HEALTH SERVICES

	Million CFA francs	*Percentage*
Public funding		
Government	4 200	
Other public bodies	90	
Development operations	8	
Social Security Institute	380	
Subtotal	4 678	23
Household budgets		
User charges	236	
Pharmaceuticals	12 000	
Traditional medicine	2 000	
Clandestine private practice	500	
Transport costs	300	
Subtotal	15 036	74
External funding	542	3
TOTAL	20 256	100

Less than a quarter of the cost of health services falls on the public sector. Nearly three-quarters falls on private households. External funds amount to only 2% of recurrent costs.

3. THE USE OF SERVICES

The following data on the use of services was collected at the local level from the doctors in charge of health centres and hospitals. The information was so poorly kept that it proved impossible to make a separation between visits and consultations with specialists. It is for this reason that all types of visit have had to be added together.

3.1 Visits to health centres in districts without hospitals

The data in Table 9 for visits and hospital admissions are for the year 1986, as data for 1987 was incomplete. The rates are calculated using the 1987 population. The rates vary enormously from 0.9 per person per year at Timbuktu to between 0.01 and 0.04 at Bandiagara, Bougouni, Goundam and Koro. Five districts are excluded from the Table as data were not available. The overall visiting rate for districts reporting figures, was 0.15 per person per year. The figures collected for 1984 give a visit rate of 0.17. This may be compared with a figure of 0.12 to be found in the Ministry's Yearbook for 1984. Our higher figure is due to the fact that we collected all available data.

Table 9
VISITS AND HOSPITAL ADMISSIONS IN DISTRICTS WITHOUT HOSPITALS

District	*Visits (1986)*	*Admissions to hospital (1986)*	*Population (1987)*	*Visit rate*[a]	*Admission rate*[a]
Bafoulabe	14 228	297	143 939	9.88	0.21
Diema	11 232	0	110 550	10.16	0.00
Kenieba	24 752	342	101 788	24.32	0.34
Kita	35 539	667	233 906	15.19	0.29
Yelimane	14 342	172	89 402	16.04	0.19
Koulikoro	22 209	312	125 811	17.65	0.25
Banamba	25 205	137	108 775	23.17	0.13
Doila	67 310	2 171	253 706	26.53	0.86
Kolokani	40 430	50	149 959	26.96	0.03
Nara	29 236	236	147 337	19.84	0.16
Bougouni	6 805	809	220 443	3.09	0.37
Kadiolo	28 845	1 024	98 337	29.33	1.04
Kolondieba	14 374	1 731	103 352	13.91	1.67
Koutiala	20 448	756	286 244	7.14	0.26
Yorosso	7 559	41	104 463	7.24	0.04

Baraoueli	17 592	518	127 684	13.78	0.41
Bla	29 731	103	150 382	19.77	0.07
Macina	21 237	144	140 109	15.16	0.10
Niono	28 713	0	161 594	17.77	0.00
Tominian	24 834	352	127 764	19.44	0.28
Bandiagara	5 019	199	182 869	2.74	0.11
Bankass	20 936	53	155 999	13.42	0.03
Douentza	26 880	37	150 608	17.85	0.02
Koro	8 741	144	211 988	4.12	0.07
Tombouctou	58 490	95	65 179	89.74	0.15
Goundam	1 610	0	113 119	1.42	0.00
Rharous	23 336	205	87 049	26.81	0.24
Niafunke	32 982	98	108 178	30.49	0.09
Ansongo	11 109	123	76 896	14.45	0.16
Bourem	12 794	153	73 134	17.49	0.21
Kidal	10 130	398	34 813	29.10	1.14
Menaka	9 411	362	50 005	18.82	0.72
Total	706 059	11 729	4 295 382	18.84	0.30

[a] Per 100 population

A total of 1 357 851 visits was recorded, while the Ministry recorded 917 334 in returns from *all* the health services, although the returns were incomplete. Presumably the higher figure remains an underestimate, partly because figures for some health centres were not found and partly because it is known that some units keep no figures at all. For three of the districts in this table Dr G. Kegels-Cornelis directly recorded a rate of 0.04, while our rates varied from 0.1 to 0.24. The question which arises is how the terms, 'visits' and 'patients' are understood by those in charge of gathering health statistics. It is not unusual to find even in official documents (e.g., the Ministry Statistical Yearbook for 1984) figures for patients which are higher than those for visits. Thus, it can be concluded that the figure of 0.17, though the best available, is an overestimate.

3.2 Visits and admissions to hospitals in districts with a hospital

In preparing Table 10, it is assumed that patients are drawn from the district in which each health facility is situated. This assumption is not absurd. It was estimated that 88% of the consultations at Gao hospital come from residents of the city. Similarly, a study by Dr Kegels-Cornelis in two districts showed that the visit rate dropped from 1.09 per person per year to 0.43 in 1986 for the population living over 15 kilometres from the health centre. In the calculations we have included the figures for military side wards in the district concerned. The table includes 40% of consultations in all such sick wards in 1986.

The figures for Bamako include the Point G and Gabriel Touré hospitals and, for Segou, the Markala hospital.

Table 10
VISITS AND HOSPITAL ADMISSIONS
IN DISTRICTS WITH HOSPITALS

Health centre	*Visits (1986)*	*Population (1987)*	*Hospital admissions (1986)*	*Visit rate*[a]	*Admission rate*[a]
Bamako	392 500	646 163	14 936	60.74	2.31
Kati	301 855	340 600	1 091	88.62	0.32
Kayes	259 130	247 200	1 361	104.83	0.55
Sikasso	117 103	374 611	7 000	31.26	1.87
Segou	265 163	418 621	7 692	63.34	1.84
Mopti	43 764	243 245	1 643	17.99	0.68
Gao	62 404	148 886	860	41.91	0.58
Nioro	15 442	131 790	500	11.72	0.38
San	88 370	202 096	3 868	43.73	1.91
Dire	15 614	79 507	893	19.64	1.12
Total/average	1 561 345	2 832 719	39 844	48.38	1.16

[a] Per 100 population.

The table shows a total of about 1.6 million consultations for 1986 as against the figure of 878 480 in the Ministry's 1984 Yearbook. The Ministry's consultation rate, using the 1987 population, is 0.31 as against the present calculation of 0.48 for 1986. This again is due to incomplete returns made to the Ministry.

The variation in the visiting rate between districts may be partly due to difficulties of travel. For example, low visiting rates are recorded for Dire and Nioro where the roads are impassable most of the time and a high rate of 0.6 for Bamako which is a more crowded city. Segou also has a high rate and relatively good roads. The high rate at Kati is due to the presence of the military hospital which provided 47% of the visits in the district. The relatively high rate at Gao is probably due to the role of Médecins Sans Frontières which enables treatment to be cheap: prescriptions cost only 200 francs CFA in 1986. Possibly the rate at Kayes (1.05) has been overestimated and that at Sikasso and Mopti (under 0.35) underestimated. Alternatively, it may be due to the quality of what is offered — particularly the availability of pharmaceuticals.

The highest admission rate is found at Bamako (3 per 1000 persons). The average admission rate for all these districts was 1.4 in 1986.

3.3 Visits to hospital clinics

The figures in Table 11 exclude those for 1987 which were incomplete. In 1983, 24% of all consultations were at Sikasso Hospital. From 1984 onwards most

consultations were at Gabriel Touré (21-23%). Less than 2% of consultations were at Nioro and at Dire. National hospitals provided 37% to 53% of consultations in the different years.

Table 11
NUMBER OF VISITS AT HOSPITALS

Hospital	*1983*	*1984*	*1985*	*1986*
Point G	21 682	22 825	24 032	26 338
G. Toure	102 036	104 562	102 932	97 536
Kati	66 626	83 123	77 669	79 030
Kayes	3 356	4 081	26 930	20 987
Sikasso	123 410	72 860	74 738	83 519
Segou	25 878	27 240	28 673	30 182
Mopti	42 426	31 867	26 070	28 340
Gao	20 177	20 460	21 253	19 382
Nioro	4 401	4 749	3 966	4 145
San	17 011	16 846	17 837	17 896
Markala	80 673	53 507	61 268	53 429
Dire	5 505	8 322	4 222	4 123
Total	513 181	450 442	469 590	464 907
Average	42 765	37 536	39 132	38 742

There was a fall in consultations of 12% between 1983 and 1984 due to a fall of 41% in Sikasso Hospital. At first sight this may appear to be due to the introduction of user charges. But an experiment has shown that charges or higher charges only lead to a temporary reduction in visits. Within two months this previous level is attained or exceeded. Thus, the reason may be found in the quality and acceptability of the hospital's services.

3.4 Average length of stay

The average length of stay is shown in Table 12. There is a wide variation from over 20 days at Point G, Kati and Dire hospitals to less than five days at San and Segou hospitals. The national hospitals, with around half of the admissions, have the longest stays. Over 26% of hospital days were for maternity and obstetrics/gynaecology. Specialties with very long lengths of stay, such as psychiatry, are not included in the table because such services are not available at other hospitals.

Table 12
LENGTH OF STAY BY HOSPITAL

Hospital	*1983*	*1984*	*1985*	*1986*
Point G	19	22	24	24
G. Toure	8	7	9	7
Kati	22	22	22	22
Kayes	3	3	6	7
Sikasso	6	3	5	6
Segou	3	3	2	2
Mopti	7	6	4	7
Gao	15	14	14	15
Nioro	11	8	8	10
San	5	4	3	3
Markala	12	12	13	12
Dire	25	22	12	17

3.5 Bed occupancy

Table 13 shows that hospitals are underused in Mali: only Sikasso had an occupancy of over 60%.

Table 13
PERCENTAGE OCCUPANCY OF HOSPITAL BEDS

Hospital	*1983*	*1984*	*1985*	*1986*
Point G	38	40	43	45
G. Toure	45	44	35	41
Kayes	16	18	44	33
Sikasso	67	66	68	64
Segou	21	21	21	23
Mopti	42	30	19	30
Gao	34	44	39	29
Nioro	29	22	24	21
San	32	32	31	31
Markala	50	47	35	36
Dire	36	28	49	57
Average	37.3	35.6	37.1	37.3

4. AVERAGE COSTS PER INPATIENT

The figures in Table 14 show some large variations in costs for the same hospital year by year, mainly due to extra funding from nongovernmental organizations or support committees, the effects of user charges or an increase in admissions. Variations in cost between hospitals may be due to the technicality of treatment, the quality of catering or the management of resources.

For example, transport may be diverted for the personal use of the staff instead of for the conveyance of the sick. The low morale of staff, particularly due to the delays in payment of salaries, may lead to thefts of drugs and medical equipment.

Table 14
AVERAGE COST PER PERSON ADMITTED TO HOSPITAL BY HOSPITAL

Hospital	*1983*	*1984*	*1985*	*1986*
Point G	46 156	52 551	85 710	99 335
G. Toure	20 310	15 115	39 039	31 457
Kati	76 419	80 617	82 820	102 160
Kayes	28 919	30 455	12 009	35 285
Sikasso	7 337	3 826	7 151	10 388
Segou	14 443	16 404	13 520	12 535
Mopti	10 253	12 739	19 803	22 350
Gao	25 669	22 143	31 463	64 421
Nioro	29 233	27 960	23 003	38 112
San	6 676	5 895	36 427	5 894
Markala	14 674	11 996	19 082	27 179
Dire	31 484	39 982	12 083	16 804
Average	25 964	26 640	31 842	38 826

On average, between 1983 and 1986, the cost per patient was around 65 000 francs CFA for national hospitals, 22 000 francs CFA for secondary hospitals and less than 21 000 francs CFA for provincial hospitals. All these calculations must, however, be treated with caution. They depend on how well records were kept. Records of activity were not well maintained and were generally overestimated, while register books were compiled irregularly.

PART II
FUNDING OPTIONS

5. DEVELOPING A FRAMEWORK FOR PROJECTIONS

To pave the way for an examination of funding options, a comparison is needed between the funds currently used and the funds needed to run the health system properly. The existing accounts cannot be used for this purpose as they are not related to the invested capital, to levels of activity or to unit costs. Nor do they help to visualize any new scenario. On the other hand, they are too detailed for use in building a picture of what the future might be.

What is required is a simplified model of the health system as it is now and as it could become if certain policy decisions were made. To construct the model it is necessary to specify:

— the main activities to be undertaken at the different levels of the system;

— the frequency with which these activities should be undertaken;

— the basic cost of the different activities.

These elements of the model are of course subject to discussion and can be changed. But they make it possible to calculate the total funding required if one or more variable is changed. This can then be compared with indications of the possible extra funding that could be made available if the different funding options were implemented which have been proposed by specialized institutions in Mali and abroad. In making these calculations, the information collected in Part I above can be used.

In the final stage, the different elements of costs and available funds can be combined in a simulation model to describe in one table the costs of alternative strategies using clear definitions and realistic hypotheses. Such a table will make it possible to assess the consequences of any changes in the hypotheses, to make a clearer examination of options and thus improve decision-making in health policy, at least on the question of funding.

The exercise will be confined to modern medicine. This does not mean that it is expected that traditional medicine will cease to play a role. But there is sufficient evidence to show that its present role is much smaller than is generally believed. Moreover, the public sector is not giving it any active support, e.g., by subsidy, and it is quite likely that, at least in the case of conditions which are seen as serious, the population will only turn to traditional medicine as a last resort. Its role would diminish further if the health services were in a position to take effective care of patients' needs.

The first step is to specify the activities to be funded and guess their respective costs. This involves examination of two main questions. The first involves activities, the use made of them and the resources involved. The second deals with the supply of pharmaceuticals which play a crucial role in recurrent costs. The former involves looking at the number of personnel, their pay and productivity. These need to be examined before other specifications for the model are set out.

5.1 Activities, visiting rates and basic costs

The values of the main variables cannot simply be taken from the data in Part I for two reasons. First, despite the care taken in collecting and checking the data, the quality of the data is very poor in some aspects. This is particularly the case with the activity rates and, thus, with costs per unit of activity. Secondly, the data reflects the way in which the health system has been managed in recent years and cannot be used for projections. Allocations of money and personnel are not based on quantitative or qualitative levels of provision. Moreover, the supervision of the system is such that there are wide variations in the quality of what is provided. Instead, it is preferable to use those examples where the information on activities is reliable and the quality of provision is acceptable. The examples which meet these criteria are health centres which have benefited in one way or another from project assistance. One should, however, bear in mind that not all projects have adequate financial resources and not all have been successful in securing the radical improvements for which they hoped. Their main contribution has been to supply modest but carefully chosen extra resources and by making them available at the right time; or by the presence of a foreigner, motivate the local personnel to do their job in the way in which they were expected to do it. Thus, the national choice of parameters for the model will be based on particular cases which will be analysed in as much detail as the available data permits. On this last point the supply of pharmaceuticals can have a decisive effect.

5.1.1 The price of drugs

The price of drugs will be based on those which the PPM could obtain from tender and from an efficient system of internal distribution. This question is of major importance as the turnover of PPM amounts to over half the recurrent costs of the health system. And this proportion is an underestimate because PPM drugs are often sold above the official prices and because of illegal imports from neighbouring countries. However, the sixth and seventh provinces have been obtaining drugs with the technical assistance of Médecins Sans Frontières (Belgium) in ways very different from those which PPM imposes on the rest of the country. It is also possible to learn from an experiment in three districts (Bankass, Koro and Yorosso) undertaken with the technical assistance of Médecins du Monde. This gives us the quantity used over a year and we can calculate the cost of this quantity using different prices.

It has been found that supplying drugs at PPM prices is four times as costly as can be obtained using tenders for generic names specifying product, quality and origin. These prices, which are obtained for the sixth and seventh provinces, will be called MSTG prices. Secondly, supplying at PPM prices is twice the cost of supply through a European wholesaler. These prices, used in the shops at Bankass and Koro, will be called MSBK prices. Thus, about half the difference in prices is due to the method of purchasing and the other half due to using generics. Essential medicines have of course been defined by WHO and, since 1980, Mali has made a few initial steps towards this policy. Thus, purchasing at international market prices must be carefully assessed among the funding options.

5.1.2 Remuneration and productivity of personnel

The health system in Mali is still essentially provided by public employees and it will be a long time before private practice can play a significant role.

Moreover, over the last three years, or a longer period, there has been virtually no new recruitment to the public health services even to provide for replacement of those who leave. Moreover, the state of the public finances is such that it is impossible to predict what changes will occur in salary levels in the years to come. Thus, it can be assumed that staff costs in the public health services, which amount to nearly the total of public expenditure in the field, will remain the same.

It must also be pointed out that habits in personnel assignment are so rooted in both senior and junior management that any reallocation of personnel according to the needs of the service would face difficulties which no one is prepared to face. Nevertheless, it should be pointed out that the multiplicity of funding of maternal and child health services obscures the fact that the maternity wards in Bamako are overcrowded with midwives, while there is a shortage of these personnel where they are needed most. Secondly, male nurses in the sixth and seventh provinces treat only seven or eight patients on average a day (nearly 10 at a district health centre and only six at a subdistrict dispensary). Thirdly, a doctor only sees, on average, 10 to 11 patients a day, representing no more than two hours work. The average daily number of consultations in the Koro and Bankass districts varies from 7.3 to 8.7. Fourthly, the only study of a laboratory at a health centre was at Kita when it was found that it was only busy for less than one hour a day. This scattered evidence documents what many observers are agreed upon. There is a surplus of personnel and the resultant behaviour, related both to lack of means as well as lack of supervision, discourages patients.

Simulation is only useful if it sheds light on possible decisions. If no decisions can be considered in this area, it becomes only an academic exercise. Thus, the productivity of personnel will have to be considered only to see at what level of activity present manpower would be insufficient.

5.2 Classification of activities

The limited information prevents a precise account of all the activities at each level of the health system. However, their technical complexity does not necessarily vary at different levels of the system. This limits the importance of examining the different levels. Activities related to rural maternities and subdistrict dispensaries will be ignored for the moment. The possibility of allowing for them in total will be considered later. Inpatient care will be grouped together from that given in district health centres to that at national hospitals. The justification for this will be given later. Similarly, education, training and refresher courses for health personnel working at village level, will be ignored. It has never been demonstrated that they have any impact either on the quantity or quality of work done. Nutritional and social activities will also be excluded: the former are essentially emergency measures, which are specially funded, and the latter, in their present geographic location, can be regarded as a luxury which cannot be afforded at present. Nor will account be taken of vertical programmes (such as the expanded programme of immunization or the national programme against diarrhoeal diseases) which enjoy preferential treatment and financial backing from certain officials: their funding is always guaranteed from external sources when they are given political support without consideration of their efficiency or their potential effects on the organization and operation of the horizontal services.

5.3 The village level

All that can be pursued at this level is very modest — first-aid for minor injuries. There have been experiments with village pharmacies and stores. Villagers collect money. A nongovernmental organization provides the rest of the money to buy an initial stock of drugs. After several months, or two years at most, the stock disappears without being renewed. The importance of pharmaceuticals distributed in this way is limited. The stores established by PDS in 1985 led, at PPM prices, to expenditure per capita of 50 francs CFA per year in 1985-1986. At the village pharmacy set up in Djidian subdistrict with the help of Association Française des Volontaires du Progrès (AFVP), sales per inhabitant did not exceed 83 francs CFA. At Tofassadaga, they amounted to 110 francs CFA. At this level of sales it is not possible to provide for reprovisioning and payments to staff. Reprovisioning could be done under supervision and it is known that, when properly trained and supervised, health first-aid workers can look after the stores for very low pay. There are two successful examples where remuneration of under 2000 francs CFA per month was acceptable. The experiment at Djidian on these lines, generated a visit rate of between 0.06 and 0.1 per person per year. In the MDM experiment, the visit rate was between 0.3 and 0.4, or higher, at a cost of 75 francs CFA per inhabitant with prices far below PPM levels.

A second possible objective, in view of the management difficulties of village pharmacies, would be to aim only at one disease (malaria). As systematic provision of Nivaquine to children is not recommended, it would be possible to aim to treat all adults with fevers. But this would not require a paid worker.

Moreover, a vertical programme is dangerous for health services development. Although the approach is favoured by certain nongovernmental organizations, it is not included in the simulation.

The third alternative is to place at the disposal of groups of villages both a health assistant and an assistant midwife, both of whom are literate and trained for about six months, assisted by a traditional birth attendant. Whether the higher training than that given to a first-aid worker, justifies the extra pay by a higher quality of service cannot be settled here, as no proper evaluation has been undertaken. In practice, a health assistant is allowed to administer injections and prescribe about 15 pharmaceuticals. The only example that could be studied was that of Kolokani where, in the best conditions, health assistants appeared to attract a consultation rate of around 0.24 per person per year, with a drug cost varying from 137 to 473 francs CFA per consultation. In this experiment the results seemed to justify the costs, but the statistics underlying this finding are dubious because of poor maintenance of records and the destruction of returns from the subdistrict.

5.4 Subdistrict level

5.4.1 The visiting rate below the district level

The levels of consultation from the case studies are summarized in Table 15 below.

Table 15
RATES OF VISITS BY AREA AND DISTANCE

	Central area			*Other areas*		
	Other years	*1986*	*1987*	*Other years*	*1986*	*1987*
Bankass			52		31	
Koro			20			12
Kolokani (1985-1986)	6			17		
Nossombougou (1985-1987)	8					
Didieni					8.6	
Kita						
Main town		64	59			
Less than 15 km		31	30			
More than 15 km		0.5				

Djidian (1983-1985)			10-19
Mahina			
Main town	68	55	
Less than 15 km	46	40	
More than 15 km	0.75		
Bafoulabe			
Main town	109	78	
Less than 15 km	43	30	
More than 15 km	0.75		
Kenieba			
Main town	52	52	
Less than 15 km	30	31	
More than 15 km	0.9		
Timbuktu		29	16
Goundam		24	15
Dire		40	12
Niafunke		29	9
Gourma-Rharous		48	15
Total: sixth region		33	13
Gao		53	8
Bourem		45	18
Menaka		55	23
Ansongo		26	16
Kidal		94	30
Total: seventh region		50	17

5.4.2 The average cost of a prescription

There are only three useful examples from the case studies to be analysed. The first is from Nossombougou, which has a competent and experienced head nurse and both a PPM and a private drug store. The cost at PPM official prices was calculated at 960 francs CFA per prescription: 30% of visits did not lead to a prescription. The second example was from MDM experience in Bankass and Koro. The cost was 500 to 700 francs CFA per prescription at PPM prices. The third example is from the sixth and seventh provinces where the cost was 179 francs CFA and 219 francs CFA in two different areas, but these are in MSTG prices.

In terms of PPM prices, the three examples give roughly the same figures of between 700 and 1000 francs CFA per prescription at PPM prices.

5.4.3 Private prescriptions and self-medication

The above data should be compatible with sales by PPM stores in subdistrict main towns and, in rare instances, villages, but the data rounded up suggest sales of about 530 million francs CFA while sales by the stores are of the order of 2 billion francs CFA. This last figure includes not only self-medication and private practice, but prescriptions by all levels of health worker. As only about a quarter of subdistricts have a dispensary and, as the cost of a prescription by a village health worker varies considerably (from 50-250 francs CFA per inhabitant), prescribing could represent between 65 and 325 million francs CFA at the level of the villages and 530 million francs CFA at subdistrict level. Thus, self-medication and private prescribing amounts to less than half the total medical consumption of the villages and subdistrict populations. This would amount to about 250 and 300 francs CFA per rural inhabitant.

5.5 The district health centres

This is the lowest level of the pyramid with medical staff. All the districts have at least two doctors, one of whom is responsible for all the district's services, but this does not mean that the simple statistics of the activity of the health centre are reliable. Visits and consultations are not properly distinguished, nor are repeat visits separately recorded. The unreliability of the figures can be shown by local studies, comparing prescriptions issued with visits recorded in official reports sent to the Ministry with a careful study of the actual registers.

5.5.1 Frequency of visits

In Table 15 are shown the estimates of the rate of visits per year for the most recent years. As one would expect, the visit rate varies between provinces. It is lower in the sixth and seventh provinces than in the fifth or first. Secondly, the visit rate at peripheral subdistricts is between half and a third of that in the main subdistrict. Thirdly, it should be noted that the district health centres do not operate as centres for referral as intended: in the three districts of the PDS where the main town has a high visit rate, the visits from over 15 km are negligible. It is not possible to believe that in remote villages less than 1% of the population needs to make a visit during the year. In the sixth and seventh provinces, over 80% of consultations come only from the village where the facility is placed.

5.5.2 Average cost of a prescription

Two different situations can be usefully compared — one in the first province and the other in the sixth and seventh provinces. In districts of the first province involved in the World Bank project for cost recovery, prescribing and the pharmaceutical supply system are as in most of the country. The PPM stocks some 30 essential medicines plus over 200 "essential specialties" — a concept created in Mali and having no international backing. In the sixth and seventh provinces, not only are the prices lower but essential medicines are stocked, all designated by their generic names. Parallel strong action has been taken to train the prescribers and control prescribing, both individually and collectively. International tendering plus rational prescribing reduces costs by three-quarters. The average cost per consultation in different health centres is shown in Table 16.

Table 16
AVERAGE COST PER PRESCRIPTION IN DIFFERENT HEALTH CENTRES
(CFA Francs)

	Prescribed by				
	Doctor	*Nurse*	*District*	*Subdistrict*	*Average*
Price PPM					
Kita (1985)	1 466	2 279			1 888
Kita (1987)					2 607
Kenieba (1986)	2 223				
Price MSTG					
Timbuktu (1987)	187	197	204	179	196
Gao (1987)	238	248	251	219	243
Price MSBK					
Bankass (1987)			367	362	364
Koro (1987)			581	350	426

It should be noted that the method of purchase (PPM, MSF or MDM) makes a substantial difference. The average prescription cost at Timbuktu could be between 800 and 1000 francs CFA at PPM prices and at Bankass and Koro between 700 and 950 francs CFA. The fact that these figures are remarkably close suggests that the prescribed volume is comparable. There is no reason to believe that the conditions treated vary much between provinces or that the means of diagnosis or competence of the staff are better in one province than another. The use of essential medicines halves the cost compared with expensive specialties.

5.5.3 Private prescriptions and self-medication

There is no doubt that these also play as substantial a role in the main towns other than Bamako, as in the districts. The role is probably greater as there are a larger proportion of executives, traders and officials in the town population who, because of their education, knowledge and influence, are able to secure the services of health professionals on a private basis. Using a consultation rate of 0.2 and an average cost of prescriptions of 2500 francs CFA, medicine expenditure per inhabitant would be 500 francs CFA a year. The survey in the Kangaba subdistrict gave a figure of at least 700 francs CFA.

5.6 Consultation and pharmaceutical consumption in Bamako

This city is a special case with its high concentration of health professionals, hospitals and the presence of a population with a relatively high purchasing power as well as immigrant populations which adapt themselves to the ways of the city. Unfortunately, none of the hospitals or health centres keep reliable statistics and there is a consensus of silence on the role of clandestine private practice. The only evidence is the survey of officials working in the field of teaching and culture, but this is broadly representative of the whole population. On this basis, in the search for a better estimate, the parameters are as follows:

— consultation rate with modern health services is 0.6 per person per year;

— cost per consultation is 1500 francs CFA with a doctor and 1700 francs CFA per year with a nurse, but only one visit out of three is actually paid for;

— the proportion of this population purchasing modern medicines is 60%;

— the average cost per prescription is about 5000 francs CFA.

5.7 Inpatient care

As mentioned earlier, all inpatient care is grouped together as the technical nature of it does not vary very much according to the type of place where it is provided. The evidence supporting this conclusion is based on the diagnostic mix in the Point G hospital (excluding surgery), the final diagnosis does not show any refinement or the case note evidence of specialized treatments: an examination of the diagnostic mix at a lower level hospital gives the same impression. The very limited use of laboratory examinations in two such hospitals points in the

same direction. Finally, the fact that the 30 pharmaceutical products most commonly consumed at Point G hospital are exactly the same as at any district health centre, again indicates that no special role for the national hospitals is perceptible.

In the case of surgery there is evidence that the district health centres play an important role (45% of their inpatients and 26% of all outpatients), although relatively simple hernia and hydrocele cases represent 87% of their surgical workload. Some more delicate operations are 8% of the cases at the provincial and secondary hospitals, and 15% at the national hospitals. This is the only evidence we have that points to a more specialized role for the national hospitals.

5.7.1 The rate of admissions to hospital

If we assume that the records of hospital admissions are complete, there was a total of about 50 000 a year, leading to a rate of 0.7%. It would be wrong to assume that the 60 000 deliveries recorded in district health centres were all admitted to hospital.

These orders of magnitude are confirmed by two studies of population samples. In a rural area of the second region, a study gave a rate of 3 per 1000. In Bamako, a sample of civil servants gave a rate of 2.4%. This variation is consistent with such evidence there is of catchment areas. What is true of consultations is probably also true of hospital admissions. It should be recalled that only 12% of visits to Gao hospital came from outside the city and that Point G hospital plays a referral role for very few patients.

Admission rates depend on whether there is a hospital in the district. Thus, the 37 districts without a hospital have admission rates from 0 to 1.1%, with an average of 0.25%. The nine districts with one hospital or more have admission rates from 0.27% to 2.31%, with an average of 1.4%. The simulation model will need to show under what conditions an increase of the use of hospitals would be possible.

5.7.2 Average medicine cost per hospital patient

The data on hospital medicine costs are the most scarce, inconsistent and least reliable, but the patients admitted to Mopti hospital have been analysed by specialty and the main diagnosis and standard prescriptions selected according to diagnosis. The prescriptions have been costed at International Dispensary Association (IDA) wholesale prices, plus 50% to allow for transport costs.

In the case of Point G hospital the 30 most commonly prescribed pharmaceuticals were analysed and also the prescriptions bought by the family in the pharmacies

at PPM prices. By combining this data, it is possible to calculate the average cost per patient (see Table 17). The prices for Mopti are probably one-third of PPM prices. If this is so, the volume used is almost the same in Mopti and Point G hospitals in 1986-1987. An allowance has also to be made for the cost of anaesthetics which probably amount to about 7000 francs CFA. On this basis, the average cost is 4500 francs CFA at international market prices, or 13 000 francs CFA at PPM prices, for medical cases, and 10 000 to 30 000 francs CFA for surgical cases. For maternity cases, based on Mopti, the cost is about 6000 francs CFA at PPM prices. Allowing for case mix, the average for all patients comes to 10 000 francs CFA.

Table 17
AVERAGE COST OF PHARMACEUTICALS
PER HOSPITAL ADMISSION

	General	*Surgery*	*Gynaecology/ maternity/ obstetrics*
Mopti (1987)	4 500	10 000	2 000
Point G			
30 medicines (1987)	4 693	7 252	4 644
Private purchase (1986)	8 222		
Private purchase (1984)	5 515	11 040	12 823

5.7.3 Laboratory examinations

There is surprisingly little use of these techniques in Mali. One example is a secondary hospital whose laboratory has benefited from external aid over the past few years. The average number of examinations per inpatient was 1.5 in 1986 and 0.47 in 1987; it was 0.08 per outpatient in 1986. The cost of the disposables used per examination was about 200 francs CFA. Similarly, the laboratory at Mopti has received technical assistance. It does an average of four examinations per inpatient and 0.2 per outpatient. The cost of disposables per examination is 175 francs CFA. At Point G hospital the rate was 3.5 examinations per inpatient.

5.8 Summary of key parameters

In Table 18 we summarize the data on activity and costs.

Table 18
SUMMARY OF KEY PARAMETERS

Population	*Orders of magnitude*
Total	7.6 million
Rural	5.3 million
Urban	1.6 million
District	0.7 million
Village	
Accessibility	25%
Pharmaceuticals	50-250 francs CFA (PPM) 150 francs CFA (MS)
Subdistrict	
Visit rate: no change	10%
Visit rate with pharmaceuticals	30%
Prescription by consultant	1 000 francs CFA (PPM) 40 francs CFA (MS)
Private practice and self-medication	250-300 francs CFA per inhabitant (PPM)
District	
Visit rate: no change	6-20%
Visit rate with pharmaceuticals	30-70%
Prescriptions by consultant	200-2 500 francs CFA (PPM) 200-400 francs CFA (MS)
Private practice and self-medication	250-300 francs CFA per inhabitant (PPM)
Bamako	
Visit rate: no change	60%
Visit rate: with drugs	75%
Proportion of paid visits	36%
Price of visit	1 600 francs CFA
Pharmaceuticals: proportion buying	60%
Average cost	5 000 francs CFA (PPM) 1 250 francs CFA (MS)
Hospitals	
No change	2-3% of rural population 1.4% of urban population 2.4% of Bamako population
With drugs	5% of rural population 3% of urban population 3% of Bamako population
Pharmaceuticals	10 000 francs CFA (PPM) per admission 3 500 francs CFA (MS) per admission
Laboratory use	0.5-4% per admission 0.08-0.2 per consultation
Laboratory cost	200 francs CFA

6. PROJECTIONS — POSSIBLE SOURCES OF FINANCE

In this section, the options for financing are considered with the underlying aim of increasing the quantity and quality of care without placing intolerable burdens either on the public finances or households. The options chosen for discussion are those which have been recently proposed, both in Mali and by international advisers. There are two ways of increasing the available resources — finding new sources of funds or ways of financing, on the one hand, and increasing the efficiency of resource use within the system on the other. Into the first category come recovery of costs, establishing some new type of insurance, or the use of local taxes. The "Bamako Initiative" could come under the first of these or be treated as a separate option. Under the second heading come proposals for privatization of the health professions, or pharmaceutical supply, or modifying the health structure and its staff.

6.1 New sources of finance

6.1.1 Recovery of costs

In Mali, this essentially means user charges. In the circumstances of Mali, it clearly would be impossible to attempt to recover all costs, including salaries. The aim is more modest — to find the resources needed to cover the cost of the goods needed to maintain the system, including dressings and office supplies.

The Ministerial Decree of 1983 fixed a scale of charges and defined the extensive conditions for free care. The regulations which were introduced a few months later were a masterpiece of ambiguity. They excluded health centres from the Decree but stated that they could introduce "forms of participation" not exceeding the rates in the Decree. This has led to total anarchy. With the exception of the World Bank project, no one knows in Bamako which health centres have established what forms of cost recovery, at what rates, with what results or for what uses.

The scale of charge has been applied to hospitals. It was only capable of correcting, to some small degree, the deterioration of the health services on one condition — that the money collected was left in the hands of the hospitals to spend rather than being paid over to the Treasury. The officials of the Ministry only succeeded in obtaining a temporary right of retention which was extended twice for one year. A survey has been launched by the authors of the study to find out the charging policies of the districts. This will make it possible to know what the effect would be if the revenue from charges were left for the use of the various health units.

Some scattered information is available. It appears that in subdistrict health centres, the receipts would just cover the simplest operating expenses. In a secondary hospital, the enforcement of the rules would bring in enough money to finance operating expenses, excluding salaries, and the cost of materials in the laboratory. In some areas, for example surgery, many district health centres have higher charges than Point G hospital would have wanted to set. The sums recovered at national hospitals would allow them to increase slightly the volume of pharmaceuticals and other medical supplies and do some maintenance of the buildings, but they represent only 21-53% of operating costs, excluding salaries. In total, charges raise less than 250 million francs CFA. This is negligible compared with the cost of pharmaceuticals and about half our estimate of receipts from clandestine practice.

If one wanted to raise more money, there are three possibilities. First, the rates could be raised: we know that the rates charged outside Bamako do not meet with opposition. Secondly, the categories entitled to free care could be reduced. They include pupils, students, health personnel and their families and civil servants, all of whom are already privileged in their access to care. Free care for certain diseases also benefits those with access to the services. Thirdly, the rates could be enforced. It is remarkable that at Point G hospital 50% of hospital days are free as against only 32% at San hospital. Granting free care is clearly a source of private remuneration to health service staff.

In these circumstances, it is not realistic to expect great changes over the next few years. Thus, the simulation will be based on present charges. We also assume that free care can be kept down to 40% of inpatients and 30% of visits, though this last figure is actually reduced by half in the sixth and seventh provinces.

6.1.2 Compulsory sickness insurance and voluntary sick funds

The present social security scheme is not well developed. Only 60 000 persons have cards and about 250 000 persons are entitled to use the services. Employers pay the contributions without giving a list of employees. Thus it is up to the employee to apply for a card. There is a proposal to extend the scheme to agricultural employees, a group which hardly exists in Mali. Outside agriculture, the scheme could be extended by proper enforcement. There are about 115 000 employees outside the civil service so the number covered could be doubled, but this would still only involve about 6% of the population.

The administrative costs of the scheme absorb about half the contribution income and the employees of the Social Security Institute benefit disproportionately from it. It spends about 100 million francs CFA on drugs. Prescriptions for Social Security staff in Bamako amount to 60-75 million francs CFA. Virtually the only benefit to covered persons is the consultation. They amounted to about 200 000 outpatients and 400 000 to 500 000 visits. In practice, the administration of the system is such that the service, notably in Bamako, is not confined to covered persons but is used by local residents or relatives of the Institute's employees.

In the case of voluntary sick funds, one can imagine these developing first in relatively well qualified professions with a sense of social solidarity, but this is a small group. It might extend to civil servants or employees of public enterprises, but those covered will not exceed 250 000 persons, even if steps were taken to promote such schemes.

Neither type of development will solve the problem of funding health services as representatives of the doctors seem to imagine. They can only affect a small group, mainly in the capital. Thus, it is no use building this into the simulations.

6.1.3 Decentralized public financing

Cooperative action centres, school/parent associations and provincial or regional development committees have had in the past to help finance the health services. They have been urged to build rural maternity units, train rural midwives or even assistant nurses or retrain traditional birth attendants. Nongovernmental organizations and external agencies have played a major role in this. When they retire from a project, they try to shift responsibility to some local organization. When this fails to collect the funds as promised, it in turn tries to shift responsibility on to another organization.

Local authorities can collect extra contributions on top of their local taxes. Development councils have never come into existence and there are only development committees composed of civil servants representing different departments. The collection of extra contributions has always been poor and some of the funds collected did not always get used in the way intended.

By a law passed in 1988, previous local taxes are being replaced by one local and provincial development tax, with local discretion to vary the rates by 25%. The receipts will be divided: 60% for the subdistrict, 22% for the district and 18% for the province. The funds will, however, be controlled centrally and used on the same conditions as the national budget. For all these reasons, decentralized public financing will not solve the problem of funding health services.

6.1.4 The "Bamako Initiative"

At the last meeting of the WHO Regional Committee for Africa, held in Bamako in 1987, a new action programme was agreed. It envisages that the financing of all primary health care (including hospital care) would be left to the districts. They would be supplied with essential medicines bought at the lowest prices and helped to set up revolving funds. The initial stock would be provided by international aid. The drugs would be sold at high enough prices, not only for the stock to be replenished, but the financing of other recurrent expenditure to be covered. Such a proposal will be included in the simulation model.

6.2 Changing the health structure

6.2.1 Privatization under the present regulations

Since the authorization of private practice in 1985, prices have been fixed for private consultations on the basis of calculations by an administrative body. The calculations assume an investment of 12.5 million francs CFA, over half of which is for the purchase of a vehicle and air-conditioners to be depreciated over 30 months. It allows for the remuneration of the doctor, a nurse, a secretary and a room boy (the minimum team) and a profit of 20%. It is assumed that these personnel have 15 consultations a day for 300 days a year. On this basis, the charge for a visit to a general practitioner is fixed at 4185 francs CFA, to a specialist at 5945 francs CFA, and a dentist at 4230 francs CFA, with comparable rates for a midwife and a hospital day. According to the press, the study was conducted in agreement with the doctors. However, the seminar on structural adjustment of the health services suggested a reduction of the difference between private fees and public charges, but the important fact is that only five doctors and one dentist had, by early 1988, opened a private practice.

Nor is this surprising in view of the level of income in Mali. The sample of employees of the Ministry of Education and Culture in 1987-1988, showed an annual income per household member of around 80 000 francs CFA or 6700 a month. For the whole country in 1985, income per head was 67 000.

Thus, the private sector can only be developed if there is private sickness insurance. An official document described this as "an excellent .... mechanism for the wealthy people of the population". Therefore, for the simulation no great loss is made by ignoring privatization within the existing regulations.

6.2.2 Privatization under new conditions

Under what conditions would private doctors settle in Bamako, the provincial capitals, and some districts, and make their services available to a wide section of the population? This possibility must be envisaged as newly qualified doctors and pharmacists are no longer able to find jobs in the public services. The questions which must be raised are whether fee levels should be regulated at all and whether the actual rates laid down should be retained. It should be appreciated that fee levels are laid down in European countries because they are used for paying doctors under compulsory health insurance. As we have seen, health insurance can only play a small role in Mali for many years to come. Regulating fees in Mali is either a survival of the period when all prices were regulated or an exception to the new liberalization policy to protect the interests of a particular professional group.

As regards the level of fees, it must be questioned whether they do represent the minimum costs of operating a practice. No senior civil servant can buy and maintain a car from his salary, yet a young doctor was assumed to require a car, air-conditioners, typewriters, calculators and refrigerators, all of which were included in the calculations. The operating costs can be halved by excluding the car and the secretary. Moreover, the remuneration can be brought down to a reasonable level of 150 000 francs CFA. On this basis the fee for a general practitioner comes down to 1600 francs CFA instead of 4185 francs CFA. This is not intended to be a recommendation, but to show that progress in the development of private practice is being blocked by the regulations.

Parallel to this question, the possibility of some form of association of private practitioners with insurance must be considered, as suggested by the Malian Medical Association. Already the Social Security Institute has recruited two doctors from outside the public services. Some councils and development committees in the districts might develop initiatives of this kind. Already the provincial budgets pay for part of the staff of primary health care. There are also village associations and cooperatives which are active in some provinces and have substantial resources to draw on from production and marketing activities. The crucial question is what resources these bodies could devote to the health field. It is possible to envisage doctors working in public or nonprofit associations without necessarily being paid on a fee-for-service basis.

6.2.3 Pharmaceutical supply

The problems of pharmaceutical supply must also be considered. They have began to be tackled since the earlier monopoly supplier accumulated a deficit of 2.5 billion francs CFA in 1979. The problems now widely recognized are the following:

- poor prescribing, associated with limited diagnostic skills, and the treatment of symptoms by unqualified personnel (particularly paramedicals) with inadequate training and knowledge;
- self-prescribing is widespread and dangerous, and the prices of medicines are, in practice, not under control and vary widely for no clear reason;
- the local pharmacies of the PPM are so poorly managed that they are constantly running out of stocks of particular products;
- the large range of products on the market encourages thefts, losses and spoilage;
- the presence of free medicines (subject to availability), alongside medicines which are paid for within the public sector, undoubtedly causes profiteering by taking stock from the first category and transferring it to the other;
- there is no competition in the supply system which results in unnecessarily high prices.

6.2.4 Principles governing reform

An important regulatory activity has been developed and implemented — along with the creation, with the help of Chinese Aid, of a pharmaceutical factory in Mali. A decree in 1984 laid down three essential principles:

— that a list of essential medicines be established;

— that these listed products be excluded from customs and excise;

— that, subject to defined exceptions, the PPM should have the monopoly of importing these listed products.

6.2.5 The official list

The first list of essential medicines published in 1980 did not specify the presentations for the 240 products included, nor did it describe them by their international denominations. The new list of 1985 includes 224 presentations of 187 products, plus 13 traditional medicines, some dressings, syringes and needles as well as a list of chemicals and essential reagents. This list was reviewed in 1987 and it was laid down that there would be a further review every two years. Another provision of importance was the decree of 1984, which stated that a national therapeutic formula and manual of treatment would have to be used by prescribers. In practice, the manual is available for some retraining seminars, but it cannot be used by prescribers because neither the health service nor the pharmacies have supplies of the products unless provided by nongovernmental organizations. Finally in 1986, the PPM was selling over 2000 specialties, but periodically running out of stocks of essential medicines.

6.2.6 The selling price of essential medicines

The same decree laid down which body should fix the selling prices if bought at negotiated prices or by international tender. In practice, the PPM makes 86% of its purchases by negotiation with foreign suppliers. In such negotiations, the suppliers dwell on PPM's record of arrears in payment and thus PPM has no option but to accept the prices offered. The machinery for purchase by international tender has been established. The same body fixes retail margins which it has laid down will be 140% of the cost as delivered to Bamako. Three calls for bids were launched in 1985-1987 by the PPM and the pharmaceuticals bought were sold in three pilot pharmacies. The value of the first two orders was 213.6 million francs CFA and 347.7 million francs CFA, less than 5% of PPM turnover.

6.2.7 Other medicines

The decree laid down a system for authorizing what could be marketed. The Committee established to do this laid down a new list of authorized products with the warning that the authorization was only valid for five years. The selling prices were laid down for these products in a 1986 decree was 206% of the prices as delivered in Bamako.

6.2.8 The background

Pharmaceutical supply has had a checkered history in Mali. From independence until 1981, an administrative body called Pharmapro was responsible for the supply of pharmaceuticals to the public health services. This was badly managed. It accumulated substantial losses and was replaced in 1981 by the Malian Office of Pharmacy which was, in turn, dismantled in 1985. So the PPM is now in charge of both importation and distribution. Its management difficulties were such that it had to be helped by a consulting group financed by the World Bank and, finally, since 1987, Chinese Aid personnel have held the key positions in the administration.

Despite all this, pharmaceutical policy is characterized by inexplicable delays given the importance of the problem and by uncoordinated developments in privatization, foreign aid and policy for pharmaceutical purchase.

6.2.9 Privatization

Now that the private practice of medicine is permitted, the question has been raised of whether the pharmacies should be privatized. At a national workshop in 1987, Professor Bocar Sall presented the view of the professional associations:

- that the PPM should become part of the mixed economy with pharmacists' shares in its capital;
- that PPM should act only as one wholesaler in competition with others and as an importer of specialty drugs;
- that it hands over any retail outlets wanted by pharmacists, but retains the remainder;
- that a body within the Ministry of Health should have the monopoly of importing essential drugs under international denomination and essential reactives and make them accessible to the population;

— that the establishment of private pharmacies should be allowed;

— that private pharmacies should form their own wholesaler to import drugs in competition with PPM.

To consider the possibilities of this proposal, it is necessary to examine the geographical distribution of PPM pharmaceuticals. The provincial shares of PPM sales are shown in Table 19.

Table 19
DISTRIBUTION OF PPM OUTLETS BY REGION

	Outlets	*Percentage of sales*
Bamako	33	49.0
Kayes	5	6.4
Koulikoro	11	5.5
Sikasso	15	12.0
Segou	12	11.3
Mopti	11	5.5
Timbuktu	5	0.6
Gao	6	1.7

It is clear that the sales in some provinces are very small and, thus, possibly it is uneconomic to run a pharmacy in them, but the full facts are not available. The workshop mentioned earlier recommended:

— a State buying agency;

— the creation of several privately owned pharmacies;

— the temporary maintenance of a parastatal network of pharmacies in zones not served by private pharmacists;

— that the health services only stock products with an international nomenclature;

— that private health professionals should be able to sell both generic products and specialties at prices different to those laid down by the committee.

The intention is clearly to split the market and give the private sector the profitable products and the more prosperous areas, leaving the public sector with the cheaper products and the less prosperous and remote parts of the country.

Meanwhile, PPM is preoccupied with making a profit to increase its working capital and, thus, be able to pay cash for its purchases and so lower a little the prices it has to pay. Thus, the PPM wants to retain sales of inessential products as well as essential products. As the Head of State put it, "any reform is resisted as it threatens someone's interest".

It can be concluded that privatization, as at present designed, cannot have significant effects on recurrent costs. There is one predominant reason for this. Retail profit margins are regulated as fixed proportions of the value of deliveries to Bamako. Any manager can see that the more expensive the item brought into the country, the higher his profit. It is no use, therefore, spending time on the role which private pharmacies could play. It would be limited to the more profitable places, but in terms of the quantity of provision, it will not come to grips with the fundamental problem — which is the price of pharmaceuticals.

6.2.10 External aid and purchase policy

The reality of pharmaceutical supply is marked by the growing role of external aid supplementary to PPM supply channels. For three years the health services of the sixth and seventh provinces have been supplied with pharmaceuticals through the project's health stores.

This is also true of three districts in the fifth province though operating in a somewhat different manner. Recently a new agreement has been signed covering the whole of the fifth province. These arrangements have shown that it is possible to supply patients with the pharmaceuticals which the doctors prescribe from a list of generic products for a cost of a quarter to a half of PPM prices — a half by better purchasing and a quarter if in addition prescribing is rationalized. This has great importance for the recurrent costs of the whole health system. Extending this experience would be the solution most capable of enabling the country to improve the quantity and quality of the health services, without exceeding the cost which both the public sector and households can afford.

6.2.11 Effective decentralization of responsibilities

So far the different possibilities have been considered separately. How can they be combined to provide an original solution for Mali? In fact decentralized public financing, the "Bamako Initiative", and supplying pharmaceuticals using generic names and purchased by international tender, can be joined together to establish a more efficient system of cost containment and cost recovery.

The key ideas analysed above which can be combined are:

— social mobilization at the district level, which appears both in the "Bamako Initiative" and in the experience of numerous health development projects, is the key — the success of a strategy in which the population is invited to sponsor primary health care. In the case of Mali, decentralization to the district encounters obvious difficulty, but the objective must be reaffirmed. It is not unreasonable to expect the district council to take on a real capacity for decision-making and management, at least in the field covered by the "Bamako Initiative";

— generic names and international tender are the only ways of obtaining pharmaceuticals in sufficient quantity at the lowest prices. Prices can be at least halved and the benefits shared between the public sector and households. The deduction of a share of the benefit to finance primary health care is the solution advised by the "Bamako Initiative". Mali has been involved in a similar system when national hospitals were allowed to retain the user charges they collected. We have shown that operating expenses, excluding salaries, could be financed in this way;

— the "Bamako Initiative" envisages at least part of salary costs being funded. There is no doubt that these salaries are too low in Mali and this contributes to the growth of undesirable practices. It is clear that by using half the present cost of pharmaceuticals, without any extra cost to the budget or to households, this can be put right. This last point will be further discussed in the context of the simulation model.

What are the legislative implications of implementing such a policy? The government has the power to require PPM to buy essential medicines by generic name and international tender and to resell them at cost (including necessary management expenses) to the health services. One large organization is in a better position to secture good prices and control the quality of supply.

Decentralization is compatible with existing legislation and regulations, except those concerning provincial and secondary hospitals. There are already management boards in health centres established by decree and given wide powers, but the provincial and secondary hospitals come under the provincial health directorates. How they are to be managed is not clearly specified in the law and this deficiency would need to be corrected to give the entire responsibility for management to a decentralized body.

The problem lies not so much in legislation, but in the arrangement by which the whole control of hospital expenditure and revenue form part of the national budget. Similarly, the recent reform of local taxes imposes central control of the money, thus destroying local initiative which should instead have been boldly encouraged by decentralization.

To implement the "Bamako Initiative", what is needed is a change in the system of remunerating health personnel. One must accept at the same time that:

— an increase in pay is not possible in view of relativities and low productivity;

— a better service cannot be obtained without a considerable increase in their living standards.

Any alternative to the present situation is worth considering. Services cannot be improved by an appeal to professional standards and ethics, which have degenerated to such an extent that they simply fail to govern behaviour, or by disciplinary action from above which would have no real content. The material conditions of employees must be modified to create a new climate and the acceptance of new responsibilities. Social mobilization, as mentioned in the "Bamako Initiative", concerns at the same time the local population, the decentralized institutions and the persons working for them. Foreign experience can be cited where health

personnel do not depend on central government, but on local governments which have taken upon themselves the responsibility for the local health services. If this development is considered premature for Mali, it could be replaced by an acceptable solution which, nevertheless, ensures a significant increase in pay and a restoration of hierarchical authority. Possibly the salaries provided by the Government could be augmented by bonuses given by the senior doctor, the hierarchical superior, on criteria linked only to the quantity and quality of services provided. The amount could be fixed by the management board of the district and it could be financed from the new financing mechanisms (user fees, profits on the sale of pharmaceuticals and the new combined local tax). Whatever the legal ramifications of such a solution, its economic feasibility is worth demonstrating and one of the variants of the simulation should do it.

In Tables 20 and 21 a simplified model of the cost and financing of the health services of Mali is constructed. For reasons explained earlier, the traditional sector is excluded. The aim is to look at different ways of changing it so as to make it possible to implement the health strategy without overloading the budget or charging prices which households cannot afford. The intention is not to reduce the total cost but to improve the quantity and quality of what is provided. The financial importance of the options is examined using the model.

Table 20
PARAMETERS OF ACTIVITY AND UNIT COSTS

Population		*Million persons*
Bamako		0.7
Rural		5.3
Other towns		1.6
Total		7.6
Activity rates	*Present activity*	*Future activity*
Visit rate per person per year:		
Village health workers	0.25	0.25
Subdistrict health centre	0.10	0.30
District health centre	0.20	0.30
Bamako	0.60	0.75
Percentage of private consultations:		
Bamako	0.36	
Rate of purchase of medicines	0.60	
Hospital admission rate:		
Rural	0.002	0.005
Urban	0.014	0.030
Bamako	0.024	0.030
Percentage of admissions with laboratory examinations	0.5	
Laboratory examinations per visit	0.1	
Average length of stay	10	10

Unit costs	*Francs CFA* *PPM*	*MS*
Medicines per person — village	100	50
Prescription per consultation — rural health centre	1 000	400
Self-medication per person — rural	250	100
Prescription per consultation — district	2 500	400
Self-medication — urban	300	100
Private consultation — Bamako	1 600	1 600
Average cost of prescription	5 000	1 250
Cost of medicines per hospital admission	1 000	3 500
Cost per laboratory examination	200	
Percentage given free treatment	40%	

Table 21
FORESEEABLE IMPACT OF PHARMACEUTICAL SUPPLY

TOTAL COSTS (million francs CFA)	*Present activity PPM prices*	*Present activity MS prices and private drugs*	*Present activity MS prices*	*Future activity MS prices*
Village medicines	132.50	66.25	132.50	66.25
Rural health centre				
medicines prescribed by the health service	530.00	212.00	212.00	636.00
Private prescriptions and self-medication	1 325.00	530.00	1 325.00	530.00
District health centre				
medicines prescribed by the health service	800.00	128.00	128.00	192.00
Private prescriptions and self-medication	480.00	160.00	480.00	160.00
Bamako				
Private practice	241.92	241.92	302.40	302.40
Prescribed medicines and self-medication	2 100.00	525.00	756.00	525.00
Hospital care				
Cost of medicines	498.00	174.30	174.30	334.25
Laboratory cost of examinations	19.780	19.78	19.78	19.78
Present fixed costs				
Salaries in the public services	3 000.00	3 000.00	3 000.00	3 000.00
Running costs (other than medicines)	1 500.00	1 500.00	1 500.00	1 500.00
TOTAL RECURRENT COSTS	10 627.20	6 557.25	8 029.98	7 265.68

FINANCING

RECOVERY OF COSTS				
Consultations				
Rural health centres	31.80	31.80	31.80	95.40
District health centres	96.00	96.00	96.00	144.00
Bamako	126.00	126.00	126.00	157.50
Private practice	241.92	241.92	241.92	302.40
Laboratory	19.78	19.78	19.78	19.78
Hospital care				
Regional and secondary	43.34	43.34	43.34	111.75
National	151.20	151.20	151.20	189.00
PAYMENTS FOR MEDICINES	5865.50	1795.55	3207.80	1913.50
STATE				
Salaries	3000.00	3000.00	3000.00	3000.00
Running costs (other than medicines)	1500.00	1500.00	1500.00	1500.00
TOTAL RECEIPTS	11075.54	7005.59	8417.84	7433.33

Table 20 repeats the parameters of levels of activity and the costs of each activity. Under the heading *Present activity* in Table 21, are shown the most likely figures to characterize the present functioning of the system and, under the heading *Future activity*, what these figures could become if action were taken to rescue the system. These figures are based on actual experience already existing in parts of Mali as described earlier. For example, the impact of the use of essential drugs bought at the lowest prices is already known. So are costs, both in the public and the private sectors, including the order of magnitude of prescribing costs. Thus, the difference between PPM costs and MS costs can be set out in the table in separate columns.

These different parameters cannot be combined as the shortage of pharmaceuticals (both in the health services and the pharmacies) limits the use made of the services, but it is known from the case studies that if these problems were resolved, the use of the services would rise to an acceptable level. The key is not only the availability of the supply but the lower prices. Thus, the high use can only be combined with MS costs. Service use cannot be expected to improve by only changing pharmaceutical supply.

By combining the rate of use and the unit costs with PPM prices, the model gives the order of magnitude of present total costs. It then shows the total cost in the alternatives considered above. With present activity and PPM prices, total costs are 10.6 billion francs CFA. It has already been shown that certain proposed solutions would have little quantitative impact compared with the adoption of a pharmaceutical policy which has been recommended internationally for a considerable period and is now officially adopted by Mali.

What roughly would it cost to make the health system function properly?

— An increase in total pay for health service staff of 50% would cost about 1.5 billion francs CFA.

— For the operating costs and transport costs of referred patients and of supervisory staff, an extra 1.5 billion francs CFA a year is required.

— For proper maintenance of buildings and equipment, a sum of 0.5 billion francs CFA is required for a few years.

These orders of magnitude are substantial, but an enormous effort will have to be made after at least a decade in which the pay of staff absorbed virtually all the budget allotted to health while external aid bodies did not help with the operating costs of the service.

6.3 The impact of the pharmaceutical policy

The first option to consider is the purchase of all necessary pharmaceuticals at the lowest prices following the "Bamako Initiative". This could be done if PPM retained its monopoly of imports, but was required to buy only generic products by tender on the international market. These products could be sold to patients by the health service at cost price. In parallel, a commercial sector could eventually be created and allowed to obtain its supplies in whatever way it wished. These could be obtained on prescription (official or clandestine). This kind of solution has been proposed by some in Mali and has social advantages as well as the use of the private sector. To describe this, PPM costs are replaced with MS, but only for products prescribed in the public health services without changing the rate of visits (present activity, MS prices and private drugs). To estimate the total cost, pharmaceutical consumption has had to be divided between the two sectors using the line "percentage of district consultations paid" in Table 20. In practice, however, if pharmaceuticals are available at the lowest price the rate of visits will increase giving the option high activity and MS prices.

Table 21 shows that generic names bought by tender save 4 billion francs CFA — 40% of total recurrent costs. Allowing a private system of marketing prescribed pharmaceuticals would save about 2.4 billion francs CFA. The private sector would have a turnover of 2.7 billion francs CFA, although supplying the health services would only cost a little over 500 million francs CFA. It allows to be made available a supply not only prescribed by private doctors but by unqualified persons and purchased by ill-informed consumers. This is dangerous in Mali, where the personnel of the pharmacies and stores are not qualified to exercise control or even to advise patients. An analysis of 1000 purchases in a few pharmacies in Bamako was undertaken to study who did the prescribing. The results are shown in Table 22 and the risks are apparent.

Table 22
PRESCRIBER OF DRUGS IN BAMAKO

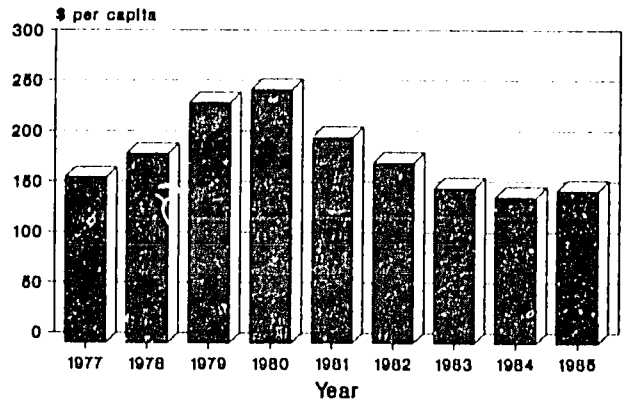
	Percentage
Self-medication	47.8
Doctor	4.4
State-qualified nurse	24.4
Assistant nurse	6.5
Midwife	1.9
Student	2.4
Not identified	12.5

A systematic policy of essential medicines would increase the rate of activity in the health services. The various health development projects show that within a short time the visit rate at subdistrict level would multiply by three and there would be a considerable increase in hospital admissions as shown in Table 20. This would go much further to meet the needs of the population and there would be lower costs than at present. The total recurrent costs under the high activity MS prices option is 3 billion francs CFA lower than present costs. This shows that there really is a solution to Mali's crisis in financing the health system. Nor is it original as the policy of essential medicines was defined internationally some 10 years ago. What is new is the use of experience in three out of the seven provinces to calculate the consequences if the policy were applied all over Mali.

6.4 The impact of other solutions

The most commonly proposed solution is the recovery of costs. The lower part of Table 23 shows its relative importance. In this connection it is important to bear in mind the World Bank's estimates of trends in gross national product per head (see Fig. 1).

Figure 1
MALI: TRENDS IN REAL GROSS NATIONAL PRODUCT PER CAPITA (US$)



Source: Vogel 1988

Table 23
FORESEEABLE IMPACT OF COST RECOVERY

	Present activity level (PPM prices)
Village medicines	132.50
Rural health centre	
Medicines prescribed by the health services	530.00
Private prescriptions and self-medication	1 325.00
District health centre	
Medicines prescribed by the health services	800.00
Private prescriptions and self-medication	480.00
Bamako	
Private practice	241.92
Prescribed medicines and self-medication	2 100.00
Hospital	
Cost of medicines	498.00
Laboratory	
Cost of examinations	19.78
Present fixed costs	
Salaries in the public services	3 000.00
Running costs other than salaries	1 500.00
TOTAL RECURRENT COSTS	10 627.00

FINANCING

	Present charges	*Higher charges*	*Present charges*	*Higher charges*
Consultations				
Rural health centre	100	200	31.80	90.10
District health centre	500	1 000	96.00	272.00
Bamako	500	1 000	126.00	357.00
Private practice			241.92	241.92
Laboratory			19.78	19.78
Hospital care				
Regional and secondary	250	500	49.50	140.25
National	1 500	3 000	151.20	428.40
Payments for medicines			5 865.50	5 865.50
STATE				
Salaries			3 000.00	3 000.00
Running costs other than medicines			1 500.00	1 500.00
TOTAL RECEIPTS			11 081.70	11 914.95

Of the 130 countries for which the World Bank gives economic data, only one has a GNP per head lower than Mali. This leads to doubt about the ability of the population to pay for the care it needs. For this reason, in the lower part of Table 21, user charges are kept at about their present level (see Table 23, lower part for present charges) and it is assumed that, as at present, 40% of the population obtains free care.

The lower part of Table 23 (column higher charges) shows that doubling charges and reducing free care from 40% to 15% would multiply by three the yield of charges, but this brings in less than an extra 900 million francs CFA. Such a solution is not only socially unacceptable but would fail to bring about a revival of the health service.

Another frequently proposed solution is some form of health insurance. It was shown above why this could not solve the problem of health service financing. It does not follow that initiatives of this kind should not be encouraged or the management of the Social Security Institute improved. In the developed countries, administrative costs never exceed 10% of contribution income, while they swallow up half the income of INPS. The savings which could be made amount to around 2 billion francs CFA, but half of this sum should go to services other than sickness insurance.

Moreover, it is doubted whether the best use is made of those resources which are currently spent on health services. The financing by INPS of services managed by the Ministry of Health denies the two partners an effective role. It would be preferable for each to run their own services. Responsibilities would be clearly defined and in all countries where this is done, sickness insurance takes its own initiatives and builds on its experience with more freedom than the public system.

Another solution mentioned above is decentralized financing. How much could be raised to finance the health system? If we put the average local and provincial development tax as 1600 francs CFA per head and assume that 35% of the population are eligible to pay and 50% do so, the yield of the tax would be 2 billion francs CFA. If the development committees devote about one-third to health, the share would only be about 600-700 million francs CFA. This cannot be used to pay the staff. Thus, a solution cannot be found on these lines.

This leads to the following conclusions. Out of the "Bamako Initiative" two ideas should be retained. The first is low cost pharmaceutical supply, and the second is decentralized management — the only way to get the population's cooperation and to enable them to participate in the management of the system. So it is better to focus on a new financing system ensuring that the cost of providing a much higher quantity and quality of services does not exceed the present level.

6.5 The proposed solution

The starting point is pharmaceutical supply, i.e., bought by international tender using generic names. As has been shown earlier, the cost depends on whether there is also a private sector and on whether there is an increase in activity. The

principal results of Table 21 are in Table 24. The first summarized line shows the recurrent costs of each option leaving fixed costs at their present level. We then show the acquired financing:

— cost recovery, assuming actual price schedules and free care at the rate of 40%;

— fees from private practice, calculated on information available only for Bamako;

— pharmaceutical expenditure costed according to what is prescribed (in the health services or outside) and what is bought on prescription using MS prices. In the option, *MS prices plus private drugs*, only the medicines used in the public health service are at MS prices;

— the fixed costs covered by the budget (pay and running costs, other than pharmaceuticals).

Table 24
USE OF THE MONEY RELEASED BY THE PROPOSED SOLUTION
(Million Francs CFA)

	OPTION	*Present activity MS prices*	*Future activity MS prices private drugs*	*Future activity MS prices*
(1)	Recurrent costs of the option, including present fixed costs	6557.25	8209.98	7265.68
(2)	Acquired finance			
	Cost recovery	468.12	468.12	717.43
	Private practice	241.92	241.92	302.40
	Pharmaceuticals	1795.55	3207.80	1913.50
	Budget	4500.00	4500.00	4500.00
	Total	7005.59	8417.84	7433.33
(3)	Balance: (3) = (2) – (1)	448.34	207.86	167.65
(4)	Present recurrent costs	10627.20	10627.00	10627.00
(5)	Margin: (5) = (4) – (1)	4069.95	2417.22	3361.52
(6)	Available for new uses (6) = (3) + (5)	4518.29	2625.08	3529.17
	New Expenditure which could be incurred			
	Working capital for PPM	1000.00	250.00	[a]
	Upgrading of services	1500.00	750.00	600.00
	Increase in basic salaries	1500.00	1500.00	1500.00
	Bonuses for staff	500.00	125.00	1500.00

[a] The increase in working capital is needed in the first year to prepare for the increased level of activity in later years

For each option, the acquired financing exceeds total recurrent costs but by a small margin. The recurrent costs of the option are then compared to present costs and the margin is shown in line 5. In line 6 is shown the money available for developments, assuming no extra burden either on the budget or on households.

In the second part of the table are shown the possible uses of these funds:

— to enable PPM to buy by tender, it will need more working capital, the level of which will depend on its sales volume. Here it is assumed that the working capital needs to be half the volume of sales: 1.8 billion francs CFA for option *present activity with MS prices*, only 500 million francs CFA for option *present activity and MS prices plus private drugs* and 1.9 billion francs CFA for *future activity and MS prices*. As it is right to assume that activity will grow steadily over two to three years, it is planned to devote 1 billion francs CFA to the PPM working capital for the present activity option and nothing extra for future activity (PPM will already have had an injection of a billion francs CFA added to its working capital in the first year);

— in the first year, 1.5 billion francs CFA is devoted to the upgrading of the health facilities. It is assumed that the effort will be kept on (and eventually directed to facilities equipment: surgical instruments, laboratory equipment, etc.) at the rate of 600 million francs CFA in the later years. The option *present activity and MS prices plus private drugs* which requires the population to pay high prices for most of their purchases of pharmaceuticals provides less (only 750 million francs CFA) in the first year for upgrading;

— the sum of 1.5 billion francs CFA is allotted in each case for higher salaries as justified above. This extra pay must be given in the same year as the switch to generic drugs, as staff must learn to prescribe them and be urged to new efforts after years of negligence, but as indicated earlier, the bonuses should be linked to the quantity and quality of work done. It is only when activity reaches the higher future level, that the maximum bonuses of 50% extra should be given.

The solution can be implemented with a small number of changes none of which involve any major modification of the present organization of services:

(*a*) PPM keeps its import monopoly but has to buy generics by international tender. This has already been happening for many years in the sixth and seventh provinces. The procedures are known and can be transferred to PPM which has, so far, little experience in this field. The same is true of training to prescribe and dispense by generic name. The experience in the three provinces needs to be generalized. Indeed, this is already planned by EDF for the fourth and fifth provinces.

(*b*) The PPM supplies the stores within or near the services: these stores are managed by specially recruited staff or staff from the health services. Again, experience in Mali has only to be extended, but it is important to keep separate the functions of prescribing and maintaining the stores. Separate control of stores is essential. This lesson from Malian experience must be put into

practice, even though some think it is possible to implement the "Bamako Initiative" by mixing the tasks. Experience in Mali is already available for the design of documents for health stores, registration of diseases and prescription pads. There is also experience of the use of data processing software for handling all the statistical data. The health professional gives the patient a written prescription which the patient takes to the health store and pays the price laid down.

(*c*) Prices should cover not only the cost of the products as landed in Bamako, but internal transport and storage costs and the costs of the staff handling the supplies. These expenses can easily be calculated as a percentage to be added to the Bamako price. The margin used in the sixth and seventh provinces is 28.8% of the Bamako price. The selling price could be fixed accordingly with an extra sum to provide the working capital mentioned earlier. All that is needed is to amend the 1986 interministerial decision which fixes the prices of essential medicines by adding 40% to prices landed at Bamako. An increase is needed to cover all the operating costs of health services other than staff costs.

The present turnover of PPM is around 6 billion francs CFA. According to the present activity and MS prices hypothesis the turnover would be 1.8 billion francs CFA at present MS prices. Thus, multiplying by three the Bamako landed price would give a sufficient margin to pay for everything listed above.

It may be useful at this stage to compare this with the case studies which were used to justify and define the "Bamako Initiative". The prices for treatment in Benin are on average three times the landed price of pharmaceutical products. In practice the margin varies according to the treatment. For example, a small bag of oral rehydration salts is sold without a margin while the price for the treatment of parasitoses by mebenzadole is 5 to 6 times the cost of the drug. In Ghana and Niger, the prices are calculated to give a profit of 100%: cost prices are doubled on resale.

(*d*) The receipts of the health stores would be controlled by the managing board of the health centre. This board would use them for operating costs, including the maintenance of plant and equipment as well as for the bonuses granted to personnel. As mentioned above, the health committees already have wide powers: what is essential is to put the ministerial Decision No. 1943 into practice. For this reason the receipts of the health stores must not be transferred to the Treasury but put into a separate bank account. An accountant could be put in charge of the funds. In the case of other matters the pattern of organization assumes that the doctor in charge fully exerts his powers in supervising the technical quality of the service for which he is responsible and expresses his authority as the manager of all the staff in his area, particularly by allocating the bonuses on the basis of the quantity and quality of the work done.

7. CONCLUSIONS

The study has shown the extreme problems which currently face the public health services of Mali:

— inadequate drug supply;

— very low utilization of services;

— poorly maintained buildings and equipment;

— considerable pilferage of supplies;

— inadequate vehicles and fuel for supervisory visits.

It has also shown the improvements which have been secured in some of the health development experiments undertaken by a variety of different agencies.

The study has shown that a number of proposals being advocated by groups inside and outside Mali cannot solve these problems. Health insurance, whether compulsory or voluntary, can only play a very small role because of the low proportion of the working population in regular employment and the cost of private insurance. Doubling existing user charges plus a reduction in the categories eligible for care would not bring in much additional revenue and would probably reduce utilization still further, at least in the short run. Nor does the privatization of pharmaceutical supplies offer a solution as the bulk of the population resides in spread-out rural areas where a private pharmacy would not be profitable

The key to solving the problem lies in the purchasing of generic drugs by international tender. These drugs can be sold at lower prices than at present, while still accumulating a substantial surplus. This additional revenue can be used to give incentives to staff and generally improve the quality of services, particularly by ensuring that supplies of drugs are continuously available throughout the country. This coupled with the decentralization of control of local services and the local retention of the revenue from user charges, can re-establish wards, promote effective work, prevent pilferage and secure a substantial increase in the utilization of services.

CHAPTER 3
JAMAICA

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According to the population census of 1982, Jamaica had a population of 2.19 million, with a recent growth rate of 1.4% per annum, consisting of an underlying crude birth rate of 25 per 1000 population (1984) (which had fallen from 35 per 1000 in 1972) reduced by net migration. Nearly 7% of the population were over 65 and 38% under 14. The population in 1986 was estimated as 2.35 million. The infant mortality rate was probably around 27 per 1000 (allowing for under reporting) and life expectancy at birth was estimated as 70.3 years for 1982. However, the maternal mortality rate was 1.1 per 100 in 1982. It is estimated that 77.9% of the urban population receive treated water, but only 21% are served by a sewage system. By 1986, illiteracy was down to 20%. Previously a British colony, Jamaica became independent in 1962 and has a Parliament elected by adult suffrage and a British type of Cabinet Government. The GDP per capita was US$872 in 1985.

1. THE ECONOMIC BACKGROUND

After substantial economic growth in the 1950s and 1960s, the economic situation deteriorated from 1974. Measured in constant Jamaica dollars, the gross domestic product fell every year from 1974 to 1980, then made a small recovery up to 1984 before falling back to about the 1980 level in 1985 (15% below the level of 1974). With the growth of population in the island averaging around 1.5% per year, gross domestic product per head was about 25% lower in 1985 than in 1974. It is estimated that growth of GDP was about 2% in 1986. Because of the changes in the exchange rate, measured in US dollars, GDP per head has been falling rapidly in the past few years — from US$1581 in 1983 down to US$872 in 1985.

The trade balance has been unfavourable for every year in the last ten. Foreign reserves have been maintained not only by earnings from tourism but by net capital inflows in nearly every year. The most formidable problem is the burden of foreign debt which, in terms of US dollars, multiplied in value by nearly six between 1974 and 1985. By 1986, interest and amortization due on foreign debt amounted to 81% of the value of goods and services exported or over half of exports plus earnings from tourism. Jamaica has managed over the past few years by a series of debt rescheduling and stand-by help from IMF.

Despite the difficult economic situation, there has been a trend for public consumption to increase as a proportion of gross domestic product from 1974 onwards. The proportion has risen from 18% in 1974 to over 25% in 1985. The fiscal deficit (net of amortization) which was running at 6.4% of gross domestic product in 1984 is estimated to have been brought down to 2.7% of GDP in 1986. Unemployment (which includes those seeking work), which had been at a rate of around 25% for several years (with the rate for women over 35% and for men around 16%) fell to 22.3% in 1986. Inflation has fallen from 26% in 1985 to 14.8% in 1986 to just over 7% in 1987.

2. DESCRIPTION OF THE HEALTH SECTOR

2.1 The development of the health services

Kingston Public Hospital was established by an Act of Parliament in 1776. An Act of 1792 required each sugar estate to establish a "hot house", with a medical officer who was to provide the necessary medical services and report regularly on the number of workers, causes of death, etc. Eleven such hospitals had been taken over by the Government by 1874. After epidemics of cholera (1850) and smallpox (1861) and, crucially, the Morant Bay "rebellion" of 1865, a Public Health Law was passed in 1867. A medical organization was established in 1868 with a senior medical officer, union and marine hospitals and the definition of 40 medical districts. A Mental Hospital Law followed in 1873.

Public health developed rapidly after 1919, with support from the Rockefeller Foundation. Campaigns were launched to deal with hookworm, malaria, yaws and tuberculosis. In 1949, the National Chest Hospital was established for tuberculosis and chest diseases. A strong campaign against malaria reduced deaths from 724 in 1952 to 15 in 1961. The establishment of the University of the West Indies in 1953 was accompanied by the opening of the first block of the Teaching Hospital in the same year. The Ministry of Health was also set up in 1953 and the construction and extension of both hospitals and health centres followed over the next two decades which was a period of substantial economic growth. Regional hospital boards were established from 1963 onwards. By the early 1970s, the hospital had become the hub of the health services delivery system and, in many areas, the health centres and dispensaries operated as outreach stations. The peak of the development of the hospitals was the completion of the 400-bed multidisciplinary hospital in Montego Bay.

The 1970s represented, as mentioned earlier, a change in Jamaica's economic fortunes. Output stagnated and fell. There was rapid inflation reaching a peak of 35% in 1978 and industrial employment fell from 55% of the employed labour force in 1970 to 45% in 1980. The proportion employed in government increased from 10% to 15%, with consequential strains on public expenditure. During this

period, the number of health centres doubled and general hospital beds increased by 20%. There was little change in the shares of the budget directed to primary care and secondary/tertiary care, respectively. The number of doctors and dentists in government service increased by about 40% between 1970 and 1978 and there was a substantial increase in temporary staff in the general service and clerical grades. There is some evidence suggesting that the number of doctors in private practice may also have increased substantially during this period.

Despite the heavy restraints on public expenditure due to the high debt service payments from 1980 onwards, real expenditure on health was estimated to be roughly 7% higher in 1985/1986 than 1980/1981, using a price index which might be misleading. Real expenditure on water, measured in the same way, fell by 27% and on housing by 49% over the same period. Devaluation had a damaging impact on the cost of drugs and other imported supplies. Though there were 2100 temporary staff, it had become increasingly difficult to dismiss them. Payments to staff rose to 60% of the Ministry budget. By 1983, some hospitals were falling severely behind in paying for supplies. There was an 11% cut back in real expenditure on health in the fiscal year 1984/1985. The late payment of bills and statutory deductions increased to become an overt crisis. Money was saved by converting five hospitals to primary health care centres and the temporary closure of some departments at the University Hospital. In addition, there were staff reductions, mainly in general service staff and community health aides (600 out of about 1200). The negligible fees charged for hospitals, which had remained unchanged despite inflation from 1968, were sharply increased (with exceptions for those entitled to green food stamps — about 460 000 persons in 1985) and some others. A further effect of the cuts was accumulated neglect of the maintenance of buildings and postponement of the repair and replacement of equipment.

2.2 The organization of the public health services

The Minister of Health is responsible to Parliament for the public health services. Reporting directly to him are the Family Planning Board and the semi-autonomous Board responsible for the University Teaching Hospital. Under the Minister, is a Permanent Secretary who takes direct responsibility for finance and audit, personnel, major capital projects, maintenance, planning, management services and environmental control. Under the Permanent Secretary, is the Chief Medical Officer who takes responsibility for the day-to-day running of the services (other than those in the University Teaching Hospital). There are separate divisions responsible for primary health care, secondary and tertiary care, psychiatric services, nursing services, pharmaceuticals and environmental health.

The hospitals are organized in ten regions, excluding the University Hospital and the Bellevue Psychiatric Hospital. Including the latter, there are now 24 hospitals in the public sector with 6042 beds. The ten regions bear no relation either to parish boundaries or the four health areas used for the organization of primary health care services. Each hospital region is directed by a regional hospital board selected every two years by the Minister of Health. At hospital level, management is vested in a triumvirate of administrator, matron and medical officer in charge.

Hospitals are graded into types A, B, and C. Type A (five hospitals) have 300-500 beds and the widest range of specialties staffed by specialists. Type B (four hospitals) have 150-300 beds and a narrow range of specialties staffed by specialists. Type C (16 hospitals) have 50-150 beds and are not staffed by specialists. There are 2.0 acute beds per 1000 population. The utilization of beds increased by 40% between 1972 and 1984. Average length of stay fell from 11 days to 7.2 days.

Type A and B hospitals have separate casualty and outpatient departments and deal with 70% of ambulatory visits to hospitals on the island (50% are handled by Type A hospitals). There are over a million visits a year to hospitals from the population of over two million, or five visits per ten persons. It has been estimated that half or more of these patients could be adequately treated in the primary health care units.

There were 367 primary health care units at the end of 1986. The administrative unit is the parish with the medical officer in charge. There are 14 parishes, each divided into health districts, where the focal point is the health centre. Health centres are graded by staffing and coverage. Type I centres are staffed by a midwife and community health aides. Type II centres are staffed by a resident staff nurse, a public health inspector and a public health nurse and have a doctor and nurse practitioner visiting regularly. Type III have, in addition to the staff in Type II, a doctor and nurse practitioner, plus other administrative and clerical staff. Type IV centres are close to hospitals and provide, in addition to Type III staffing, offices for the medical officer of health and his staff. Type V are comprehensive centres in large urban areas. The number of health centres and clinics of different types is shown in Table 1.

Table 1
PRIMARY HEALTH CARE UNITS BY TYPE — end 1986

	No.
Type I	88
Type II	89
Type III	76
Type IV	2
Type V	2
Family planning clinics	7
Dental clinics	3
	267

Until the year 1985/1986, two government departments administered the primary health care programme — the Ministry of Health and the Ministry of Local Government and Community Development. The medical officer of health, though employed by the Ministry of Health, was responsible to the parish council — the statutory local body set up by the Ministry of Local Government. Moreover, the latter paid for supplies and transport and other costs used by the parish health department. It was estimated in 1980, that this Ministry added 27% to the recurrent costs falling on the Ministry of Health. From the financial year

1986/1987, responsibility was wholly vested in the Ministry of Health. A breakdown of primary health care expenditure was made in the year 1980 and the distribution is shown in Table 1. In 1984, the health centres had 1.14 million curative visits, 0.8 million preventive visits and 0.1 million dental visits. Thus, total curative visits to hospitals and health centres combined amounted to about one per head of population. But the use of government outpatient departments declined by 23% between 1984 and 1986 suggesting a switch to the private sector. The breakdown on PHC expenditure by activity is shown in Table 2.

Table 2
BREAKDOWN OF EXPENDITURE ON PHC, 1980

	J$ (thousands)	*Percentage*
Maternal and child health	12 158	26.6
Clinic services to the community	9 622	21.1
Vector control services	2 847	6.23
Nutrition	2 325	5.1
Environmental control and sanitation	7 351	16.1
Health education	973	2.1
Capital costs	10 019	21.9
Training	214	0.5
Maintenance	126	0.3
	45 635	100.0

Source: R. A. Ramcharan, *Cost and Financing of Primary Health Care at the Community Level: Jamaica*, Ministry of Health and Social Security, Kingston, 1980

Several reasons are suggested to explain why so many people go direct to the hospitals (or private doctors) rather than, as intended, going to the health centres. First, the supply of drugs at health centres is unreliable. Secondly, patients want to see at least a nurse practitioner if not a doctor. Thus, Type I centres are bypassed and the chances of achieving this, even in a Type II centre, are low. Moreover, not all doctors attend for the full number of hours intended. The result is that some health centres are underutilized.

In addition to expenditure by the Ministry of Health, the Ministry of Local Government is responsible for sanitation and a statutory organization is responsible for the provision of water supplies.

2.3 The financing of the public sector

Virtually the only income available to the Ministry of Health consists of appropriations from the Ministry of Finance. However, from the financial year 1986/1987, the Ministry of Health is being allowed to retain revenue from charges rather than pay them direct to the consolidated fund. The aim is to give local incentives

for collection. While all the money collected has to be given to the Ministry of Health, half is automatically returned to the hospital which collected it, and even all of it if a special project for its use is approved. The current charges are shown as Table 3. The revenue from these charges has increased, largely as a result of this change, by an annual rate of about 1.2 million Jamaican dollars, but still yields only about 1.5% of the cost of the services. But no legal action or sanction is used against those who fail to pay except, in some cases, one threatening letter.

Table 3
HOSPITAL FEES APPLICABLE TO PUBLIC PATIENTS
IN MOST PUBLIC HOSPITALS, FROM NOVEMBER 1984

	J$
Outpatient treatment (including casualty)	5 per visit
Prescription charge	5 per prescription
Inpatient charge	30 per admission
Maternity charge (inpatient)	50 per delivery
Use of theatre	20-120 varying by operation class
Laboratory tests — single	10
— series	20
X-ray — single	10
— series	20
X-ray therapy (up to six treatments)	25
Blood transfusion — matching	20
ECG	20
EEG	20
BMR	20
Appliances	25% of cost
Ambulance	$15 up to 10 miles plus 50 cents per extra mile
Dental extractions	10
Prophylaxis or filling	20
Dentures	50

Exemptions and Exceptions: All visits for family planning or immunization. Food and recipients (except for delivery fees). Persons with high-risk pregnancies, dental treatment for children already on school dental. Persons with chronic conditions (diabetes, hypertension, arthritis, mental patients) pay a $5 registration fee for a whole treatment

Over 40% of the tax revenue in Jamaica comes from personal income tax; the remainder comes mainly from indirect taxes and stamp duties mainly levied on imports (see Table 4). The personal income tax system has recently been changed and simplified. Instead of a complex series of different allowances and graduated tax rates, rising from 30% to a maximum of 57.5%, there is now one flat rate of 33.5% and a lower threshold of $8580 per annum and fewer allowances. There are also plans to simplify the indirect tax structure with the aim of a value added tax at a rate of around 15%.

Table 4
TAX REVENUE COLLECTIONS BY SOURCE, 1985-1986

Source	*Percentage of total*
Customs duty	6.0
Excise duty	1.0
Consumption duty	22.6
Income tax	43.0
Land and property tax	0.9
Stamp duty	16.4
Motor-vehicle licences	1.1
Other licences	0.1
Entertainment tax	0.1
Travel tax	0.6
Betting, gaming, etc.	1.1
Hotel room tax	1.6
Retail sales tax	1.7
Education tax	1.7
Other	—
	100.0

Source: Planning Institute of Jamaica, *Economic and Social Survey, Jamaica*, 1985, p. 63

Ministry of Health expenditure on health services is shown, from the years 1980-1981 to 1985-1986, in Table 5, both in current prices and in constant prices using the implicit national accounts deflator for government services. This index is not specifically devised for use on health expenditure, particularly owing to the relatively high import content on drugs, medical equipment, etc. For these reasons, a special price index is needed to show Ministry of Health expenditure in constant prices.

Table 5
MINISTRY OF HEALTH AND MINISTRY OF LOCAL GOVERNMENTS CURRENT EXPENDITURE ON HEALTH SERVICES, 1981-1982 to 1985-1986

Year	*Current prices (J$ millions)*	*Constant 1985 prices using implicit national accounts deflator for government services*
1981-1982	162.5	268.5
1982-1983	212.8	303.6
1983-1984	232.9	299.9
1984-1985	236.6	264.2
1985-1986	263.7	263.7

2.4 The private sector of the health services

This consists essentially of private hospital services, private dental services, private medical and nursing services and private pharmaceutical expenditure. It is paid for by private persons, some of whom are insured by employers, and to a very small extent by government funds. The role of voluntary gifts and donations is small and cannot be estimated. Nor is it known how frequently Jamaicans go abroad for health care.

In 1986, there were six hospitals in the private sector with a total of 292 beds. This sector handles about 1% of total hospital discharges per year with the remaining 99% handled by the public hospitals (Wint, 1986, p. 42). It was reported in 1983, that all the private hospitals were in financial difficulties to a greater or lesser extent (Stevens, 1983, p. 31). This is despite the fact that, until recently, the Ministry of Health filled 11 of the beds at one hospital and 20 at another. In 1982, the occupancy of one of the hospitals was 38% and another 50%. Only one hospital achieved an occupancy in excess of 65% and that was at the satisfactory figure of 84% (Stevens, 1983, p. 32).

The number of doctors and dentists practising in Jamaica is not accurately known. The University of the West Indies estimated 1277 in August 1986, of whom 510 were in the public sector. This suggests a total of over 767 working in the private sector. In addition, doctors working for the Government engage in private practice on a considerable scale as consultants, and senior registrars are allowed 12 hours a week private practice on top of the 28 hours devoted to public patients. The gross and net income of private doctors and dentists are notoriously difficult to measure in Jamaica as elsewhere. Charges for private consultations are said to vary between J$40 and J$80 according to specialty. Finally, there are private drug sales outside hospitals which can be roughly estimated on the basis of imports, local production and retail margins after subtracting government purchases at the appropriate stage. It is estimated that about one-half of private expenditure on health services is devoted to drugs.

Employers finance health care by paying insurance premia in whole or part, by self-insured arrangements and/or by providing some clinic services themselves. Total expenditure by employers cannot be separately identified. The insurance industry estimated, in late 1984, that some 110 000 employed persons were enrolled in the companies' plans and 60% of such persons had chosen to cover their dependants, bringing the total number of persons covered by insurance to about 310 000 persons (Carriers Committee, 1984, para. 3). Most policies operate mainly on a reimbursement basis, and include copayments, and are subject to financial ceilings for claims under particular headings. In 1982, the four companies offering health insurance collected about J$30.6 million in gross premium income but this also included individual policies (Stevens, p. 51). About J$23 million was paid out to beneficiaries, so insurance was paying for between a quarter and a third of private health expenditure in 1986. The cost of a policy, with 20% copayment on some items, was roughly J$29 per month for the employer alone and J$70 for the employee plus dependants. The Government pays part of the cost for employees taking out health insurance with Blue Cross.

A survey in 1981, indicated that, while only 12.7% of the population had health insurance coverage, of those seeking medical attention 40% went to private

doctors, 31% to the health centre and 24% used hospitals. Another interesting finding is that, among those with insurance coverage, only 30% made a claim for their most recent use of health care (Ross/PEU Health Services Evaluation Project).

Consumer expenditure surveys were conducted in both 1975 and 1984. The percentage of consumer expenditure devoted to health care was 1.73% in 1975 and 1.59% in 1984. In both years, the percentage was higher in urban areas than rural. In 1984, the variation was between 1.78% in the Kingston Metropolitan Area and 1.43% in rural areas. The percentage also varied by size of household. The percentage rose in 1984 from 1.4% for one-member households to 2.04% for four-member households. The percentage was lower for larger households — declining to 1.12% for households of eight or more members. The percentage also varied by level of total household expenditure. Households spending under J$3000 a year devoted 1.12% of expenditure to health care, while those spending over J$30 000 a year devoted 2.25% of expenditure to health care. In total, personal consumption on health care was estimated as J$ 270.4 million for 1986/1987 to which J$112.3 million went on drugs and pharmaceuticals and the remaining J$158.1 million on hospital and medical fees.

A careful study by Cumper for the year 1980, estimated that about 60% of health care expenditure took place through central and local government and another 10% through the government-funded University Hospital. This left 30% for expenditure on the private sector (J$43 million on services and J$24 million on drugs) — a total of $67 million. This can be compared with a figure of $195.5 million for the public sector, but this includes not only capital but expenditure on depreciation (J$9.6 million) which was not in fact paid. Later estimates varying on the definitions used, suggest that private expenditure is 30-36% of total health care expenditure. The estimates for 1986 for current expenditure only indicate personal consumption expenditure as 37.6% and health insurances expenditure as 9.3% of the total, therefore leaving 53.1% as government current expenditure.

3. RATIO OF CAPITAL TO RECURRENT COSTS

Cumper made calculations for the value of physical capital employed in the public health sector at replacement cost. He then calculated the relevant recurrent costs excluding administrative and support services. He concluded that annual recurrent costs amounted to 2.5% of the capital value. This proportion was not significantly lower for primary care than for secondary/tertiary care (Cumper, EPC, 1986, pp. 35-37).

This issue of the ratio of recurrent costs to capital costs is not, however, a significant element in the present or prospective problems of financing the health sector, as no major capital schemes have been undertaken for several years and those contemplated in the immediate future are for replacement or upgrading without an addition to facilities. Rather, the thrust of policy is to rationalize existing services and make good repairs and maintenance on existing buildings.

The capital budget for health has been low in the period 1980 to 1984 (5-10% of total health expenditure). In view of the limited provision for the maintenance of buildings in the recurrent budget, hospitals have depended on the capital budget even for emergency maintenance work leaving very little for any planned routine maintenance (Wint, 1986, pp. 79-80).

4. THE DEFICIENCY IN RECURRENT COSTS

Evidence for a deficiency can be found from:

(*a*) delays in paying bills;

(*b*) the accumulated arrears in the maintenance of buildings;

(*c*) the extent to which equipment is awaiting repair or replacement. For example, X-ray services were only available at 25% of type C hospitals due to lack of repair and manpower shortages;

(*d*) insufficient supplies of drugs — particularly at health centres;

(*e*) unacceptable waiting time for inpatient care accompanied by low occupancy in other than type A hospitals. In 1985, patients waited for over 12 months to enter a medical, eye or gynaecology clinic;

(*f*) unfilled vacancies for nurses, doctors, anaesthetists and others. While these vacancies are caused by shortages of manpower willing to work in Jamaica at current levels of remuneration, the financial implications of filling vacancies would be substantial even without raising salary levels. Out of the establishment for doctors in 1987, 23% of posts were unfilled. Among posts for staff nurse/sister grades there were 26% unfilled vacancies, for enrolled nurses 25% and for pharmacists 46%;

(*g*) the abandonment of attempts to make comprehensive plans for the period ahead.

One approach to attempting to calculate the current deficiency, or underfinancing, of the health sector would be to try and estimate the cost of remedying each of the problems (*a*) to (*g*) above. Some of them would require a lump sum (to overcome repair or maintenance arrears) plus a higher budget level in future. The Government is applying for a loan of J$300 million from the IDB to remedy the main deficiencies in this respect. Others would just require an increase in the annual recurrent budget. But, inevitably, it is question of judgement to decide how much is enough. The elimination of the waiting list is hardly a practicable aim, as if the needs of those on the present list were met, further cases would be presented.

An alternative approach is to look at the problem historically. What would it cost to restore the health budget in real purchasing terms to the level of (say)

1980? It has been suggested that this decline in real resources may have been as high as 50%. This is not to suggest that the health services were adequately financed then as, already, the problem of inadequate maintenance of buildings had been identified. Moreover, since then the population has increased and medical technology has continued to advance. At least it would be possible to use 1980 as a starting point if a specially constructed price index for health care services were constructed.

Thus, as part of this study, the Institute of Economic and Social Research at the University of the West Indies was commissioned to calculate such an index. The work was done under the direction of Dr Leroy Taylor and proved to be more difficult than was anticipated. A key problem is that the main expenditure on health services is shown in the budget for the ten regions and the University. It is only at this level that they are separated into line items. No record is kept centrally of final (after supplementary estimates) expenditure by category of goods or services. The task of collecting all the expenditures of these units and classifying them on a standard basis would have been formidable. Thus the study was confined to the Kingston region which has the largest share of the Ministry's budget — around 20%. There is no reason to suppose that basing the weights for the index on Kingston region's expenditure would result in an index which would be misleading if applied to the Ministry of Health budget as a whole. At best we would expect it to give more reliable results than the GDP deflator. Thus, the index is used in Table 6 below.

Table 6
CURRENT AND REAL RECURRENT EXPENDITURE
BY THE MINISTRY OF HEALTH, 1979/1980 TO 1985/1986

	1979/ 1980	*1980/ 1981*	*1981/ 1982*	*1982/ 1983*	*1983/ 1984*	*1984/ 1985*	*1985/ 1986*
Ministry of Health recurrent expenditure in current prices (J$ m)	136.7	149.3	168.7	201.1	227.5	257.3	307.3
Kingston region price index	65.3	79.9	89.5	100.0	108.1	135.0	158.6
Ministry of Health recurrent expenditure in real terms	209.3	186.9	188.5	201.1	210.5	190.6	193.8
Ministry of Health recurrent expenditure per head in (5) current prices	64.4	69.7	77.3	90.6	100.5	112.0	132.1
Ministry of Health recurrent expenditure per head in constant prices	98.6	87.2	86.4	90.6	93.0	83.0	83.3

The calculation suggests that Ministry of Health recurrent expenditure declined by 7.4% and expenditure per head by 15.5% between 1979-1980 and 1985-1986.

It also suggests that use of the national accounts implicit GDP deflator for government services does not lead to serious error when applied to the health services for this period.

Future health plans have, of course, been influenced by the current shortage of finance. Partly for this reason, the five-year health sector plan for the period 1978-1983 has not been updated. This plan did, however, recognize that current budgeting provisions could not support the Plan. The following proposals were, therefore, put forward:

(*a*) a national health scheme through the cooperative efforts of government and health insurance organizations;

(*b*) revision of hospital/health charge rates;

(*c*) amendment of current regulations allowing for retention of appropriations — in-aid earned.

The last two of these proposals have been implemented as shown above.

A projection of health care expenditure was made by Cumper for the period 1980 to the year 2000, assuming the medium population projection, GDP growth of 1% a year 1980-1985, followed by 2% 1985-2000, and that the health budget would remain a fixed proportion of GDP or a gently increasing proportion (1.005 percentage increase for each 1% increase in GDP). On this basis, it was projected that the government health budget would increase by 85% by the year 2000 and total spending on health by 115%. The projection showed that "while there might be some pressure on financial resources in the period 1980-1990, in the period 1990-2000 the resources were likely to be adequate to cover the expenditures to which the Government was committed by current plans and policies" (Cumper, EPC, 1986, p. 58). The pressure on financial resources has come earlier and to a much greater extent than projected, mainly owing to the poor performance of economic growth.

5. CURRENT GOVERNMENT POLICIES

The current policies of the Government are aimed to increase the efficiency with which current resources are used. The Government is in the process of contracting out to the private sector:

(*a*) cleaning and portering services;

(*b*) catering;

(*c*) laundry.

From October 1987, cleaning and portering services were contracted out to the private sector for the three major Kingston hospitals. The Government is saving J$4 million, or half the budget, and the standard of services has been improved.

In February 1985, the Government received bids for the catering services at these hospitals, but the catering plant is being refurbished before handing it over. The privatization of laundry services is planned for late 1988. There are also plans for hospital equipment maintenance to be contracted out to private firms.

At a later stage the Government plans to privatize the public hospitals. Three separate experiments are envisaged:

(1) Management of a hospital in a single parish, with the entrepreneur assuming all the financial risks;

(2) Management of a hospital in one parish, with the Ministry of Health assuming the financial risk;

(3) Establishment of a parastatal hospital with private operation, management and control, but with the Government holding a majority share.

It is not yet clear whether suitable private firms will come forward to accept the above contracts.

6. REMEDIES SUGGESTED FOR UNDERFINANCING

In the section below, the main reports presented to the Government, from 1983 onwards, are summarized and reviewed.

6.1 The Cumper Report (1982)

This was one of the first reports (early 1982) to recognize that the health sector was likely to need more finance than could readily be found from the existing system of government health financing. He pointed out that user charges could be a blunt instrument, if they seriously restricted the access of the poor to health care in cases of serious need, and drew attention to the serious practical problems in administering a means test as a direct responsibility of the health services.

The second possibility was compulsory health insurance system based on NIS. Either contributors would be expected to pay only for their own services, or NIS might be used as an additional source of revenue to pay for services for all. The latter would be subject to objections on the grounds of equity and the earmarking of taxation and could lead to a lower allocation from the Ministry of Finance. If NIS contributors were to have separate services, or special advantages, they would need to be identified which the NIS machinery did not do at present. Moreover, there were objections to consolidating the advantages of the employees of government and large-scale industry over the rest of the population.

The third possibility was an expansion of voluntary health insurance which, in Cumper's view, was likely to happen with or without Government encouragement. The risks were higher prices and incomes in the private sector which would exert upward pressure on government salaries and make it still harder for the Government to recruit key personnel.

6.2 The Stevens Report (1983)

This substantial report of 146 pages, prepared by Prof. Carl M. Stevens, paid for by USAID under the Health Management Improvement Project, appears to have been important in setting the agenda for later action and investigation. As indicated by earlier references, the information assembled in this report has been invaluable for the present study.

The key problems identified in the Report were the following:

(*a*) the Ministry of Health is underfinanced;

(*b*) the Ministry is unable to pay salaries sufficient to recruit and commit the services of important categories of health manpower, including physicians and nurses;

(*c*) it is difficult to provide incentives for efficient performance within the Ministry of Health system;

(*d*) the Ministry of Health's commitment of resources for preventive/promotive services is too small;

(*e*) there is too much out-of pocket financing of the demand for services in the private sector.

Noting the ideas floated in the health plan, the main options put forward to deal with these problems are summarized as follows in a different form to that adopted by Professor Stevens:

Option A: Modest fees charged to public patients with the revenues reverting to (*a*) the consolidated fund, and (*b*) the Ministry.

The Report on the Revision of Hospital Fees, 1982, was reviewed. This had proposed a fee of J$15 per hospital discharge or hospital delivery, J$10 per other deliveries, a charge of J$10 or J$20 for everything except minor operations, J$2 per outpatient visit with extra charges for drugs and investigations. Registered paupers, pensioners, persons over 60 years of age, the physically handicapped and members of the government security forces would be exempt. No service was to be withheld because of inability to pay.

Professor Stevens calculated that, if everyone paid the charges, the yield would be J$4.4 million but emphasized the difficulty and cost of collecting the charges

and argued that the fees should be higher to increase the yield and justify the collection cost. He accepted that this could deny access to consumers with low incomes and judged that a system of income classes could probably not be administered in a satisfactory way but drew attention to the function of charges in rationing resources. In conclusion, he left open the question of whether the gains from modest fees justified the cost and the problems which could be anticipated.

Option B: More substantial fees reverting to the Ministry of Health.

Professor Stevens drew attention to the still greater problem of equity with this option and the difficulty of relating charges to income. The answer to this problem was to be found in social insurance in which contributions related to income would pay for the services. Thus, he proposed that the Ministry should market services on a prepaid capitation basis to groups in credit unions, cooperatives and in employment, with a lower capitation rate for low-income groups. He accepted that some persons would not voluntarily buy insurance and argued that the Ministry would have to attempt income-testing in such cases and exempt the poor. He accepted also that many consumers might simply refuse to pay which would discourage others from insuring. Fees should be retained by the Ministry to help with the underfinancing problem and the priority for prevention/promotive services.

Option C: Substantial fees retained by providers who would be statutory bodies with managers at risk for the success or failure of their enterprise with, again, the maximum marketing of insurance or prepayment schemes.

Statutory bodies were suggested as a means of avoiding the civil service pay scales for doctors, nurses, etc., and creating incentives for efficient performance.

Option D: An addition to the contributions payable for national insurance which would be paid over to the Ministry of Health.

This is simply a way of adding to the Ministry's revenue. Those who pay obtain no special rights.

Option E: An addition to the national insurance contributions which would give contributors defined rights.

The exact rights were not defined but, presumably, what was envisaged were free services for those who contribute. Professor Stevens, however, questioned whether in the present state of the Jamaican economy, substantial payroll taxes should be mandated for the purpose in view of the implications for labour costs and levels of employment. He, therefore, came down in favour of voluntary prepayment schemes. Professor Stevens concluded his report by making the case for supporting and extending private social financing or insurance, particularly by various types of health maintenance organization.

6.3 The Carriers Committee (1984)

In early October 1984, the Prime Minister called together representatives of insurers and invited them to consider the possibility of setting up a health insurance plan for users of the nation's public health facilities. The committee of insurance carriers worked out the premium for such a scheme, assuming that insured persons would pay the new charges for hospitals which had been introduced. The Committee reported, in December 1984, that such a scheme could be operated on a premium of J$2 a week for individuals and J$5 a week for families.

The Committee thought it practicable to aim at covering persons paying income tax on a pay-as-you earn basis — an additional half million persons. While major legislation would be needed to cover them all "even 50% penetration of this market should have a significant impact on our health delivery system" The Committee argued that employee premia like employers' premia should be tax exempt. It also envisaged a centralized and mechanized system to handle claims with on-line data processing services which the Government would help to finance.

6.4 The Committee on Alternative Methods of Financing the Health Services (1984)

This Committee (chaired by Mr Ogle) was set up by the Minister of Health in September 1984 to recommend alternative methods of financing the health services. The Committee was assisted by the Centre for Health Affairs (the Hope Project) which was engaged by the Committee to give executive services. The Centre completed a draft report in March 1985 and the Ogle Committee presented an Interim Report to the Minister in April 1985.

The Committee reported that the public medical care system was in a state of crisis as indicated by staff reductions, creditors faced with longer and longer delays in obtaining payment, and poorly maintained facilities. This was the situation for which relief was sought.

The central proposal of the Committee was that all hospitals, and other facilities offering comparable services, should charge for each service according to a scale of fees designed to cover the full cost. For the majority of the population, the hospital would be reimbursed for services by a health insurance corporation (HIC) which would have the status of an independent public non-profit corporation. This corporation would receive its income from two sources — insurance contributions of 3% of earnings payable by employees and 2% payable by employers, to cover the costs of services for employees and their dependants, and a grant through the Ministry of Health from general revenue to give the same rights to indigents and their dependants as were given to insured persons. Employed persons and their dependants (but not indigents) would make co-payments when services were used amounting to 25% of the cost. Persons neither employed nor indigent (mainly self-employed persons) would pay full-cost fees

as services were used or join, if they chose to do so, a private insurance scheme. Alternatively, the self-employed and others might make voluntary flat-rate contributions to HIC, possibly with reductions for low earners. Employers would have the option of contracting out into a private scheme offering enhanced benefits at higher costs. HIC would transfer appropriate premia to the private insurers based on the actuarial value of the minimum benefit.

Making all hospitals earn their income in fees for services would open the door to experiments in the private management of hospitals. Two such experiments were recommended -- one where an experienced private group would take responsibility for providing the services at its own financial risk and another at the Government's financial risk. If these experiments were successful, further privatization might be possible (in other words, hospitals might be sold off to private operators). In addition, the Committee recommended a lottery to help finance the health services and calculated that the net yield could be as large as $42 million.

The insurance scheme was provisionally costed by the Committee. The report concluded that the level of revenue paid for the services "could slightly exceed the Ministry of Health 1984-1985 likely level of expenditure of J$215 million on primary, secondary and tertiary care". The Committee presumably hoped that the exchequer would be willing to continue to pay this full J$215 million and calculated that an extra J$60 million would be available to help relieve the crisis, plus the J$42 million net yield on the lottery.

Although they did not spell it out, the Ogle Committee appear to have appreciated the advantages of the compulsory social insurance approach over the voluntary marketing approach favoured by Professor Stevens:

> (*a*) coverage can be extended to *all* employed persons by ensuring that contributions vary with income. This can only be secured in a voluntary scheme if either employers make this form of contribution a condition of employment, or a group (cooperative, credit union) agree to share the contribution liability in a way that has similar effects, e.g., by basing it on farm produce marketed;
>
> (*b*) the cost of dependants is averaged between those with none and those with varying numbers of them. An individual insurance approach involves higher premia for those with dependants and, thus, less ability to pay them;
>
> (*c*) coverage does not have to wait for the formation of new institutions, such as HMOs, which are complex to start.

There are, however, disadvantages and problems involved with the detailed scheme outlined by the Committee. First, it is unlikely that the scheme, as devised, would be popular either with employers or employees. Neither could expect any noticeable reduction in tax, though they would be required to pay an extra 3% (employee) and 2% (employer) of payroll. Moreover, employees and their dependants would be expected to pay *higher* copayments than at present. This is particularly important in terms of the self-employed, whom the Committee "expected" to pay as well as the employed. It would, however, seem unlikely that more than a few would see advantages in contributing to the scheme even on the basis of a flat-rate contribution.

Secondly, there are reasons for doubting whether the scheme would have been financially viable and would have saved or released general tax resources on the scale which the Committee envisaged.

6.5 The Danzon Report (1985)

This report was prepared by Dr Danzon of Duke University in June 1985. She stressed that the demand for insurance had been undermined by free, or nearly-free, public hospital care. (She clearly did not regard tax financing as, in itself, a form of insurance.) A second obstacle was that over a third of the labour force was self-employed or in firms with less than ten employees. Group policies were difficult to arrange for small employers and individual insurance coverage cost more than group coverage.

Dr Danzon suggested that the revenue potential of fees at current levels was "at most 20% of costs" and quoted a figure of J$26 million for the current hospital charges if fully enforced. She suggested that cards should be given, not only to those eligible for food aid, but to those below the tax threshold. She was presumably not aware that income tax in Jamaica does not operate by comprehensive submission of tax returns as in the United States of America. Under the Jamaican system of income tax, the Inland Revenue has no records of persons below the tax threshold. Moreover, in calculating the potential yield of charges, she failed to appreciate the significance of the treat first and charge later practice in Jamaica which is not the rule in the United States of America.

While Dr Danzon saw the advantages of compulsory health insurance as a fair way of making employed persons and employers contribute to the cost of health services, she was worried about the likely effect of discouraging the employment of low skilled labour. As regards the operation of the scheme, she suggested that, instead of creating HIC, the Government might give contributors and the indigent vouchers to purchase private health insurance. She did not mention the problem of high-risk persons, particularly among the indigent, being refused private insurance on the value of the voucher or being charged a large extra premium.

Finally, Dr Danzon discussed the possibility of a public catastrophic health insurance programme. This would involve keeping a running record of each household's health expenditure during the year and providing free care when a limit was reached which would vary by income group. The latter data would also have to be established for each household. She accepted that such a system might be costly to establish unless it was a byproduct of information collected for other purposes, but suggested that the cost should be calculated.

6.6 The Zukin and Winberg Report (1986)

To test the feasibility of establishing a local health maintenance organization, this study, by the authors named above of Health Management Group California,

was presented to the Ministry of Health in March 1986. The area selected for the study by the Ministry of Health was the poor rural parish of Trelawny with a population of about 70 000 persons. It was chosen because of grass-roots concern about deteriorating health services and the willingness to be in a pilot scheme which would unify private and governmental health services under a non-governmental community-related organization.

Trelawny had one 102-bed hospital, 21 health centres of varying types and some six or seven doctors. The government health services for the parish cost J$2.8 million. Private health expenditure was estimated as, at least, J$1.4 million, making a total of J$4.2 million.

The authors envisaged that the new nongovernmental organization would take over the hospital and health centres and upgrade them at a cost of J$3.85 million. With additional start-up and development costs, a total initial outlay of J$4.4 million would be required. To improve the quality of services, the authors decided that a total of ten doctors and one dentist were required and 13 additional posts were needed for the hospital, including a hospital administrator. The management group would need 13 extra staff, two of them part time. The annual cost of operating the improved service would be J$ 8 million compared with the J$4.2 million currently being spent.

The scheme would be financed in part by voluntary insurance premia (or membership contributions). These were put at an average of J$25 per person per month chosen at a rate to compete well with current health insurance charges. Members would get comprehensive care from the upgraded service but would be required to copay at unspecified rates for visits to doctors, whether initial or on referral, for drugs, and if choosing semi-private accommodation. Persons who were non-insured but non-indigent would be subject to full cost charging for services. The indigent would consist of the 7000 households (with 28000 to 30000 persons) eligible for food stamps, plus a further 20000 medically-indigent persons for whom payments would be made by the Ministry of Health. The payments were calculated at J$2.3 million compared to the then current Ministry budget for Trelawny of J$2.8 million.

Of the 20 000 persons not classed as indigent, the authors believed that around 10 000 could potentially afford to join the health plan. The remaining 10 000 who could not afford membership, would be required to make full cost payments for all services.

The authors concluded that the scheme was not financially viable because the income from membership contributions (J$3 million), fees and copayments (J$700 000) and the Ministry (J$2.3 million) would amount to J$6 million as against the annual cost of J$8 million, quite apart from the start-up cost of J$4.4 million. The authors did not draw attention to the fact that the Ministry was to pay only J$46 annually per head for indigents, who were likely to be the highest users, as against J$300 paid by members. Nor did it point out that the Ministry was currently spending over J$100 per head of population nationally on primary, secondary, and tertiary services. If this rate could have been spared for Trelawny indigents, the scheme would be viable. Thus, the key to the problem of improving Trelawny services was not just that it has such a high proportion of indigents but that so much of the Ministry of Health budget went on class A hospitals, seldom used by the Trelawny population.

But there were other problems with the scheme. Among the 10 000 who could not afford membership contributions, a proportion would be bound to have considerably above average health costs which they could not afford to pay for. Moreover the estimates themselves assume that both copayments and fees would amount to J$700 000. Thus the 10 000 non-insured and non-indigent would only be able to pay in full cost charges between a fifth and a quarter of the full membership premia. It is therefore *assumed* that they would avoid care because of the cost to a substantial extent.

The authors point out that it is uncertain whether there is a positive climate in the community for the scheme. The positive feature is the better service. The negative features are, first, that half of the non-indigent would be expected to pay an average per head of J$25 a month and make copayments for doctor visits and drugs at health centres which are at present free of charge. The second negative feature is that the other half of the non-indigent would have to pay the full cost of upgraded services. No free non-upgraded services would be locally available as an option. The indigent, on the other hand, would obtain upgraded free services but they would have to be certified as such, which involves stigmatization.

Some further points should be mentioned. Nowhere do the authors say how the extra 20 000 indigents were to be identified or who would do it. The composition of this group will vary over time and the identification process will certainly not be costless. Secondly, it can be questioned whether a trained hospital administrator could be recruited to work in Trelawny for a total salary of about J$35 000 and the key dynamic executive director for a salary of J$50 000.

7. GENERAL COMMENTS AND RECOMMENDATIONS MADE TO THE GOVERNMENT

The above review of the discussion of health service financing in the six reports considered above has centred round three main issues — the use of user charges, the possibility of compulsory health insurance and the extension of voluntary health insurance run on commercial lines either by reimbursement (e.g., Blue Cross) or by non-profit organizations which also acted as providers (HMOs).

7.1 User charges

It was generally recognized that, in terms of equity, the level to which user charges could be raised was intimately bound up with the question of exemptions for the poor and near poor or "medically indigent". Several stated the ideal of full-cost charging for those clearly in a position to pay, with charges scaled down for those with less capacity to pay, and reduced to zero for those clearly poor. While this may be the theoretical ideal, it could not be fully achieved in practice at acceptable cost and certainly not at the point-of-use of health services.

For practical purposes, it was recognized explicitly, or implicity, in nearly all the reports that there could only be two categories — those who paid charges and those who did not. Some authors of the reports treated the issue of identifying the poor as almost a non-existent problem and, by omission, assumed this was a process which could be undertaken at negligible cost. The indigent were described as those with food stamps plus some others — a category left hanging in the air without any clear definition.

It was recognized by others that means tests cannot be satisfactorily operated at the point where people present themselves for health services. Statements have to be accepted, or disbelieved, without the time and resources for any verification. Moreover, persons anxious about their own health, or that of their relatives, may see questions about resources as an unwarranted distraction and are inevitably under strong temptation to present their cases in such a way as to achieve the result they want. Moreover, who can blame the mother with a sick child for viewing available resources as those which she has at her disposal on that particular day. What her husband actually earns may be a secret closely guarded from her.

It is for this reason that it is preferable for the poor to be identified in advance on a regular basis and issued with cards certifying their low economic status. This is the system used in Costa Rica for 5% of the population. It is also used in the urban areas of South Korea. Most other countries have shied away from attempting such a complex and costly operation. How difficult it is to undertake varies between countries, according, for example, to the level of literacy, the extent of subsistence farming and the extent of regular employment. Jamaica already has a system of identifying poor persons for eligibility for food stamps worth J$20 per household every two months. They are issued to around 100 000 households, with a total of 457 000 persons. The criterion of eligibility is kept very simple to ease administration, though, inevitably, it involves considerable rough justice in terms of equity. The criterion is whether household income is below J$50 a month, *irrespective of the size of the household*. Application forms are distributed through a range of local agencies and the forms, filled in by applicants, go to the social service committee of the parish council which consists of seven persons appointed by the Minister of Social Security. The committee may accept applications or require the poor relief officers of the parish to make further inquires. Successful applicants are given identity cards and stamps are distributed through local centres every two months. Random checks are made on those with cards to verify their income position and recipients are expected to report changes in their circumstances.

Identifying the poor more precisely is an expensive operation which requires trained and skilled staff to undertake. Moreover, assessments will never be correct in all cases. This, of course, depends on what "correct" means. In terms of equity, regard needs to be taken of income in cash or kind and any savings (or debts) of the family or household. But this only raises two further questions. Should concern be with monthly or annual income? The farmer paid only at crop time may have negligible financial resources by the time the next crop is due. Secondly, should assessment be on the household, the immediate family, or those who are dependent, whether inside or outside the household? To what age should children be regarded as dependent or should it depend on continued attendance in full-time education? To be really "correct", allowance needs to be made for rent or housing costs, any property taxes, travel to work costs and to the place

where health care is provided and, possibly, also for hire purchase costs of essential durables. Operating means tests is particularly difficult when the applicant is among the 20% illiterate Jamaicans, when farming income is partly or wholly in kind, when no farm accounts are kept and when the precise status as regards cohabitation is neither clearly defined nor readily verifiable. Even the process of establishing which children are dependent can present difficulties. Nor do birth certificates solve this problem. If the question considered to be relevant is whether children are living with the household, allowance has to be made for children temporarily resident while, for example, a sister is in hospital or abroad. In view of all these complications, it may not be cost-effective to attempt to means test nearly half the population solely for the purpose of determining eligibility for free health care, as envisaged by the Interim report of the Ogle Committee. It is recommended that the Government have estimates prepared of the administrative cost of operating an effective system of issuing cards of exemption from charges.

It must also be borne in mind that a means test for exemption from charges is not the same as a means test leading to a cash gain (e.g., public assistance) or a food stamp. Room must be available above the minimum level for health service charges to be paid. Thus, for example, expecting people entitled to food stamps to be able to pay full-cost charges of (say) J$20-$30 for a visit to a doctor, let alone J$500-$1000 for a hospital stay, when their income is just a few dollars above the minimum is bound to create hardship. Such charges are high when related to the minimum wage of J$52 a month.

It is presumably for this reason that the current hospital fee schedule tries to contain the likely costs that can be incurred in a month by only requiring one lump sum for a hospital stay, rather than a payment per day. It should not, however, be forgotten that, by misfortune, several family members can need health care in the same month. One way of relieving part of this problem is exemption by category (e.g., to allow all children under three or five free health care or all persons 60 or 65 and over).

The question of what importance to attach to issues of equity is one to be decided by the Government of Jamaica. But, WHO sees the question of equity in access to health care as central to the strategy for health for all by the year 2000, endorsed by the World Health Assembly in 1981. Any charging system which would restrict access for low-income groups would conflict with this principle. It is because means tests can never be precise, because populations have in practice to be divided crudely into poor and non-poor and because, under this system, any charges, however reasonable and non-deterrent, for the average family, have also to be collected from the near-poor family, that user charges have in most countries been kept low. One further way to restrict the effect on access is to give free consulations but to concentrate charges on curative treatment, e.g., drugs. Thus, information can be given on the importance of the disease and of the treatment to enable patients, or their parents, to decide whether the prescription is essential and user charges should be paid to obtain the drugs prescribed. Moreover, this type of charge would seem particularly desirable for other reasons. A charge per item prescribed makes the prescriber reconsider whether further items are really needed. Secondly, drugs have a high import content.

To the general case for low charges, there are two exceptions — private beds and what can be called hospital "bypass charges". There is also a third possibility discussed below:

(*a*) Private beds

Where patients opt for private, or semi-private, hospital accommodation, full-cost charging, including depreciation, would seem appropriate. At first sight, there would seem to be a considerable potential market for such accommodation in Jamaica, in view of the limited facilities for treating serious conditions in private hospitals and the considerable coverage by private insurance. Some countries provide options of semi-private (two beds to a room), private (one bed to a room, plus shower and WC) and de-luxe (larger room with full bathroom, comfortable chairs for visitors, colour television, telephone, à la carte menu, etc.). They see these options as offering choice at different prices and, thus, maximizing hospital revenue. All of them should cover full costs, including depreciation, calculated on replacement cost. The two higher classes might be designed to make a profit.

There are, in fact, seven public hospitals with a separate ward facility for private patients, with a potential total of 69 beds, and another three hospitals, with a total of 11 designated beds, in public ward areas. The ward facilities in five of the hospitals are not, however, currently operational. Some would require minor refurbishing, and others major refurbishing before use, and the occupancy of the other private beds is very low. The failure to use private beds is partly due to earlier ideological objections to private beds in public hospitals, unwillingness of nurses to staff them, and the general nursing shortage, which makes provision for the more staff-intensive private wards the lowest priority for nursing administrators.

It is absurd for patients who are willing to pay and would prefer private beds, to occupy public ward beds. But the shortage of nurses willing to work at government salaries is a real problem. It could be overcome by the recently granted right of patients to engage their own private duty nurses to care for them. Alternatively, private ward facilities might be rented to private operators who could recruit their own ward staff and pay the main hospital for facilities used. This, however, may not be acceptable in view of the tensions it would create between different nurses working within what they see as the same hospital, at very different rates of pay. Moreover, the revival of private beds may have to wait until the main service departments of the hospital, such as operating theatres, X-ray, pathology, etc., are better staffed and better equipped with everything they need in running order, otherwise there would be feelings, justified or unjustified, that priority in the use of these facilities was being given to private patients to attract revenue, thus lengthening delays for public patients.

A clear policy decision is needed on the future of private beds in public hospitals. Either they are rehabilitated and used to raise revenue for the hospital, in competition with private hospitals, or the space is converted for the use of public patients and brought into use when population growth and the aging population lead to a need for more occupied beds in public hospitals. In view of the low potential revenue from private beds (a maximum of J$1 million), it may be decided to adopt the latter course and not risk the above tensions.

(*b*) Bypass charges

The second exception, is where patients go directly to hospitals for treatment without being either referred, or being genuine accidents, or emergencies, often bypassing government health centres on the way. People who abuse the planned

health service system in this way, should be required to pay the full cost of the hospital resources they use by a charge which is competitive with private practice (e.g., J$35 or J$40 for each visit). The practicability of operating this system depends on the availability of health centres within walking distance of each hospital to which patients arriving at the hospital without having referral letters or being genuine emergencies, could be sent. These particular health centres would need to be open in the evenings and at weekends if they were to be effective in shielding hospitals. Not all hospitals at present have health centres near them. Thus, the provision of such centres is a preliminary step to the operation of the system. The bypass charge would need to be vigorously enforced. No exemptions or exceptions would be allowed. It would be a case of pay first or go elsewhere!

If we assume that 70% of the cases now going to the hospitals could be treated by health centres, and that the proposed charges would prevent half the visits, the yield of a bypass charge of J$35 would be about J$13 million.

(*c*) Means testing for hospital inpatient charges after discharge

If it is accepted that to try and means test half the population is not an economic proposition, and that full-cost charging would limit accessibility and cause hardship for some of the near poor, it would be possible to try and recover full-cost charges, when justified, only in the case of inpatients. Thus, inpatients would be presented with a bill at the end of their stay, accompanied by an application form for reduced cost care. Persons who were insured would, of course, submit the bill to their insurer. Persons in households with food stamp identity cards would be exempt. Persons who could pay would, hopefully, do so. Persons who felt that they could not pay, would fill in the form stating their financial circumstances, family composition and relevant outgoings and the form would be submitted to the social service committee of the relevant parish council. The committee would endorse the statement on the form or amend it, in the light of further inquiries, and return it to the hospital. The hospital would then assess what charges were due and the period over which they were to be paid on a scale laid down centrally. The hospital would then seek to recover the assessed amount.

The main advantages of this system would be that payment would be extracted from insured persons and that there would be a stronger incentive to take out insurance. Moreover, means testing would be more target-effective: it would only be applied in the case of bills which were substantial. The disadvantage would be that the recovery of the assessed charges, a month or so after discharge, would be difficult and, in some extreme cases, expensive both in the direct cost of litigation and indirectly in using up limited and expensive court time. How far the Government would wish to clog up the court system with cases of this kind is a matter which would require careful consideration within government. It would be optimistic to expect that the proportion of hospital costs which would be recovered in this way, after allowing for the cost of the administrative machinery, would be as high as 20%. It is more likely to be around 10%.

7.2 The extension of voluntary insurance

The indemnity insurance policies sold by Blue Cross and other insurers have several disadvantages:

(1) some persons are refused insurance because they are in high-risk categories or are subject to waiting periods for pre-existing conditions;

(2) substantial copayments are required in the attempt to limit, indirectly, the incentive to overprovide generated by the fee-for-service payment system;

(3) major medical risks are not normally covered. The largest insurer limits hospital coverage to 120 days in a year.

(4) failure to secure agreed total fees with specialists, means that copayments for specialist care, particularly for inpatients, can be substantial. This has the result that some lower-paid persons, covered by insurance with the help of their employers, find that, while the room and board charges for private hospital care are covered, or largely covered, the copayments sought by the specialist are more than they can afford. They, thus, do not use their insurance policy and obtain care in public hospitals, almost entirely at the cost of the tax payer;

(5) they are costly for three reasons. First, despite copayments, there are still clear financial incentives for overprovision of repeat visits, diagnostic tests and drugs. Moreover, the latter are unnecessarily costly: equivalent generic drugs are seldom used when they are available. Secondly, there are possibilities of fraud. Insurers pay for diagnostic tests without evidence that the doctor ever ordered them. Moreover, doctors may have understandings with private laboratories that not all tests ordered need to be done and the payment made by the insurer may be secretly divided between the doctor and the laboratory. Moreover, it is possible that pharmacists are willing to give patients toilet articles or cosmetics in return for prescriptions which they do not want dispensed. Thirdly, the processing of complex fee scales (the Blue Cross scale has about 500 different items for which fees can be claimed) involves a costly burden of administrative work both for insurers and doctors. As a result 20-30% of the premium may go in administrative costs.

An alternative type of insurance has begun to be made available, based on the HMO model operated in the United States of America. But it does not go the whole way. Groups of three, or more, doctors are paid a capitation rate to cover office visits, prescriptions and laboratory tests. The insurer also shares any savings in hospital costs with the doctor group concerned and feeds them with information on their prescribing costs and information on the cost of generic preparations. As a result, some groups are beginning to stock and dispense themselves drugs which they commonly prescribe under a common tendering arrangement made by the insurer. There is also a trend towards generic prescribing. In addition, a second opinion is required for elective surgery. Some doctors are opening their surgeries in the evenings to become more responsive to times of visiting which are convenient to patients. Copayments are restricted to J$7 per visit, plus J$3 per prescription item. In addition, there is a J$25 copayment for out-of-hours calls.

The advantages of the system are the following:

(*a*) there are financial disincentives for overprovision;

(*b*) there are no incentives for doctor fraud;

(*c*) the administrative cost is lower than under indemnity insurance;

(*d*) copayment is reduced by about 15%, compared to a system with 20% copayment, for everything except inpatient care;

(*e*) the policy is about 15% cheaper.

The disadvantages are:

(*a*) the system can only be expanded slowly as doctors agree to work together in groups of at least three;

(*b*) some patients may still choose to go into public hospitals because of the copayments demanded by specialists.

Thus, a common proolem with both types of policy is that an unknown number of privately-insured persons end up in heavily-subsidized public hospitals. In view of the pressure on these hospitals and their chronic problem of underfinancing, it would seem wrong that patients who, with their employers, have demonstrated willingness to pay should be subsidized in this way. There was considerable agreement among insurance carriers that this should not be happening.

Before suggesting remedies, the first step should surely be to ascertain the extent of the problem. This could readily be done, with sufficient accuracy for the purpose, by taking a census of the public hospital patient population on one day and asking how many persons were insured and with which insurer. If the problem really is more than negligible there are several possible remedies:

(*a*) if all insurance carriers were prepared to form a combined front on this issue, they could try, once again, to secure an agreed binding fee schedule with specialists, or at least sufficient specialists, to operate the insurance policies as intended. Specialists who refused to accept the schedule would be struck off a list of specialists eligible for insurance practice. This policy would not, however, be likely to be successful in those cases where there is only one or two specialists of the particular specialty in Jamaica;

(*b*) insurers should be invited by the Ministry of Health to make voluntary payments to the hospitals, on the basis of the money due, as indicated by the above census, or any other procedure mutually agreed;

(*c*) a tax on insurance policies could be introduced to recover this cost;

(*d*) inquiries about insurance status could be made of all public hospital patients on admission and the hospital fee regulations amended to require full-cost billing for insured persons. (This is assuming initial full-cost billing was not introduced as discussed earlier.)

Although the above innovative HMO type model has managed to offer fuller insurance at lower cost, the price of current insurance policies still limits the market, particularly for individual policies for sale among the self-employed. Is it possible to devise a still cheaper policy which could extend the market to smaller and more vulnerable employers and the less affluent? One possibility would be to introduce in Jamaica an amended form of the type of sick fund or friendly

society contract which operated on an enormous scale in Europe in the nineteenth and early twentieth centuries before compulsory health insurance — the early generation of what are now called HMOs in the USA. This insurance would only cover general practitioner services, drugs and such simple pathological tests, and perhaps X-rays, which a general practitioner could readily undertake in his own office. Where more advanced diagnostic tests were required, the patient would be referred to the public hospital. Similarly, the patient would receive free specialist and inpatient care *on referral* to public hospitals. A crucial condition of the insurance would be that participating doctors would agree to limit themselves to the WHO essential drug list — with some small amendment to suit local conditions agreed with representatives of the doctors. This last condition addresses directly one of the most costly elements in reimbursement insurance — the costly branded drugs which are generally used. Payment would be on a capitation basis.

There are several possible variants of the system. General practitioners could supply the service at the health centres in which they worked out of normal working hours. An inclusive capitation payment would be made. This could be divided locally into a share agreed in advance for overheads, a share for drugs and a share for the remuneration of the doctor and any other staff needed to be on duty. It would be essential to ensure that the full range of drugs were kept in stock. Possibly drugs for insured patients would be kept separately and purchased from the central pharmacy. Alternatively, the capitation payment could be paid to groups of doctors who agreed to buy their own drugs under a centrally negotiated contract or to contract with one local designated pharmacy for the prescriptions they gave insured persons. Alternatively, the insurer could pay contracted pharmacies and deduct the monthly pharmaceutical bill from the capitation payments due to each individual doctor participating in the scheme.

The first model would bring an overhead income to the health centre and relieve it of some drug costs. The advantages would be that the full range of preventive services would be available on the same premises. Moreover, the doctor would be in attendance more often, as the same premises would be used for insured patients and public patients. This system could be considered less socially divisive than the other alternatives. Under the other models, there could be staff savings at health centres. Moreover, in all cases, capitation payments might be supplemented by fees paid for defined preventive services such as immunization and family planning. In some European countries, private insurance was given a government subsidy on condition that the dependants of insured persons were always covered by insurance. In Jamaica, this could be a later development when it could be afforded.

The advantages of this type of model are the following:

(*a*) it could be rapidly introduced. It does not require groups of doctors to work together. Nor does it require the complex administration and large start-up costs of the full American type HMO such as was modelled for Trelawny (as described above). Moreover, the full HMO model aims at what is the main target in the United States — reducing the use of hospital beds. It is calculated there that some HMOs can save the use of 30% of hospital beds. This can hardly be considered a problem in Jamaica, where the persons covered by Blue Cross only use 0.37 beds per 1000 persons covered;

(*b*) it is up to the doctors concerned to decide whether they wish to exclude or postpone entry to persons with pre-existing conditions;

(*c*) it preserves the virtues of competition. Patients are free to change their doctor if they are dissatisfied with the service they are receiving. They must, however, be registered with only one doctor at any point of time. Thus, it encourages continuity of care;

(*d*) while under indemnity insurance there is nothing to stop patients consulting several doctors in the course of the same illness and receiving a variety of different prescriptions without the knowledge of the other treating doctors, this is not possible when patients are registered with one general practitioner. Choice of this kind is costly and not without its risks if patients mix drugs inappropriately;

(*e*) the cost would probably be about one-third, or one-half, of that of existing indemnity policies while giving first dollar insurance. This lower cost is due to:

(i) much lower administrative cost because the processing of some 500 Acts is avoided;

(ii) less utilization of doctors' services because of the lack of incentives to generate repeat visits;

(iii) lower prescribing because there are fewer visits and for other reasons. About half the number of drug items are prescribed in Western European countries using this system compared to comparable fee-for-service systems for paying doctors;

(iv) the use of generics would substantially reduce the cost per item.

The disadvantage is that it throws a higher share of costs on the public health services. Under compulsory insurance systems, these costs could be recovered in whole or part.

7.3 Compulsory health insurance

Compared to voluntary health insurance, compulsory health insurance of regularly employed persons and self-employed persons covered by NIS has the following advantages:

(*a*) more persons can be covered without undue burdens on employers and employees because:

(i) the premium is a percentage of earnings;

(ii) it can be a requirement that dependants are included;

(iii) individual employers need not be experience-rated. Thus, those with a higher proportion of lower-paid persons with a high incidence of disease need not pay more on this account. There is no conclusive evidence that experience-rating in this field encourages employers to take action to keep their employees healthy in the Jamaican situation;

(iv) those with bad health records and pre-existing conditions can be covered without any waiting periods;

(*b*) administrative costs are lower because:

(i) the NIS system can be expanded to collect higher contributions at negligible cost, though there would be the extra costs of issuing insured persons with documents of entitlement — a cost which is already incurred with voluntary health insurance;

(ii) expenditure does not need to be incurred to attract employers to join. The law requires them to do so. Expenditure on securing compliance, if carried to reasonable limits, is likely to be less than expenditure on sales promotion;

(*c*) it is possible to require insured persons to contribute to the costs of the hospital and other public health services they use, thus releasing tax money to improve services for all users. The problem currently confronting voluntary insurance is solved by legislation;

(*d*) compulsory health insurance would help to strengthen compliance with the NIS system. At present, the employee, covered in theory by NIS, does not know if his or her employer has been paying over the contributions due unless there is a claim on the death of the insured, on reaching pension age, on becoming an invalid or eligible for maternity benefit. These are not frequent occurrences, while needing medical care is a contingency facing most families every year. Thus, employees not receiving their document of entitlement for health care will want to know why. This will put pressure on the employer to pay over the contributions due within 14 days of the end of the month as required by the law. At present only 83% of potential revenue is collected. There were, in 1985, about 100 firms who had not paid since 1980. In the case of the self-employed, only 0.2% of potential revenue is collected. The introduction of compulsory health insurance should also make more self-employed persons willing to pay the contribution due.

The Ogle Interim Report proposed that insured persons and their employers should pay contributions and still obtain the same benefits as indigent persons but pay a 25% copayment for receiving them. As pointed out earlier, this would not make compulsory health insurance popular with either employers or employees. For this reason, there could be resistance to participating in the scheme. To overcome this problem, it is suggested that the minimum benefit should take the form of the low-cost model suggested above for voluntary insurance with capitation paid general practitioners prescribing a list of essential drugs. Under this system, first dollar insurance would be provided for insured persons and their dependants (i.e., no copayment, though the bypass charge would still apply for patients not referred to hospitals except in emergencies). Thus, insured persons, unlike other persons not covered by the food stamp scheme, would have free

care and a personal doctor paid by the capitation system. This would be popular as indicated by the extent to which persons without insurance use doctors in private practice rather than the public health services.

It is not appropriate at this stage to work out precisely how the scheme would be administered and how it would be phased in. This would require detailed examination at a later stage, if the approach found favour. But, briefly, it is envisaged that an extra contribution for national health insurance (2% employer, 3% employee) would be collected by NIS, alongside other contributions. Complying employers would be issued with documents of entitlement in three parts for distribution to their employees. Each employee would retain one part of this document to show their entitlement to free care when using the health services. The two other parts would be handed over to the participating doctor they had chosen as their general practitioner, who would retain one part for record purposes and to turn the other part to the central administration so that he would be paid for the persons registered with him. There would be regulations governing the obligations of participating doctors which would, among other matters, specify the maximum number of patients a doctor could have registered with him, or her, and forbid the doctor from giving private treatment to a patient on his, or her, national health insurance list of registered patients.

A crucial and controversial question would be whether contracting out to private health insurance would be allowed as envisaged in the Ogle Committee's scheme. In other words, could national health insurance contributions be transferred in whole or part to a private insurer?

At present, persons who take out private health insurance are allowed neither a rebate on the taxes they pay that finance the public health services nor a personal tax allowance on income tax. Thus, in a sense, they pay twice for health services — once in taxes for services of which they make little use and a second time in private health insurance contributions. On the other hand, employers can deduct their share of the contribution as an expense against company taxation. The position is similar for education. Persons paying for private education help to finance the school system, which they do not use, not only by the taxes they pay but by the special education tax of 1% of earnings payable both by employers and employees.

The case for allowing no contracting out is to preserve this analogy with education. Moreover, the case for applying this principle to health is stronger than for education, in view of the high import content of private health insurance. Secondly, contracting out increases the level of contributions which need to be levied on employers and employees — particularly low-paid employees and vulnerable employers — to achieve any target income from contributors. Thirdly, contracting out introduces an unwelcome and costly administrative complication into the national health insurance system. If there were no contracting out, many private insurance policies might well be amended and reduced in cost to cover only diagnostic, specialist and private inpatient services, leaving the insured persons to use the national scheme's general practitioner service.

The case for contracting out is to maximize the role of private insurance and thus, lighten the load on the public health services. Whether, however, the Government gains in a lighter load more than it loses in insurance revenue handed over depends on the terms. If contracting out were allowed, it would not accord

with the principle of "solidarity" to excuse employers and employees contracting out all contributions to national health insurance. Rather, the amount returned to contracting out employers, should represent the average cost their employees and dependants would have incurred on the public health services if they had used that system. This would, in particular, take account of the fact that the privately insured are low users of hospital services and have fewer dependants. It is for this reason, that some such body as a health insurance commission, proposed by the Ogle Committee, would be needed to collect all contributions and hand over to private insurers the appropriate sums if contracting out were allowed.

The collection of contributions on an earnings-related basis and the issue of vouchers of equal value to all employed persons, as proposed by Professor Danzon, would have a very different effect. Those with high risks and an above average number of dependants (mainly the lower-income groups), would not be able to buy full private health insurance with their vouchers and might well be refused membership of any kind, while there would be a surplus for additional benefits available to the low-risk/few dependants group on the value of their vouchers. The alternative approach of a law requiring all employers to take out defined minimum health insurance for all their employees, would similarly impose higher costs and a still higher percentage of payroll on employers with relatively low-paid employees. Thus, compulsory health insurance with no contracting out minimizes the impact on labour costs.

How is it possible to maximize compulsory health insurance among the self-employed? As pointed out earlier, compliance with the existing NIS scheme is extremely low. This is partly because self-employed persons are expected to pay both the employee and employer rates of contribution. However justified this may be in actuarial terms, many countries reduce the contributions for those who have no employer to pay part of them. Moreover, some countries offer low flat-rate contributions, leading to the right to full health insurance benefits, to certain defined groups such as small farmers, fishermen or forestry workers, known to have low average incomes. Flexibility in *negotiating* contribution levels for particular groups can maximize the coverage of health insurance. Moreover, the sale of health insurance cards can be arranged through cooperatives, credit unions and friendly societies — even giving a commission to the agency distributing them. No country, however, manages to cover all the self-employed in the contributory system. Those not covered and not entitled to food stamps, will have to pay the fees laid down for the use of health services which need to be kept low for reasons set out above.

A scheme of this kind could bring in net extra revenue of around J$100 million at 1987 prices (see Table 7). It would not increase the fiscal deficit. Nor need it increase employers' costs if it were to be introduced at the same time as the coordination of the collection mechanisms for all payroll taxes that would lead to a higher yield and the opportunity to lower the rates of other payroll taxes when compulsory health insurance was introduced. A development of this kind has recently been recommended (James Alm, *Payroll Taxes and Contributions in Jamaica*, 1985). Table 7 makes it possible to calculate the yield of levels of contribution higher or lower than the combined rate of 5%. For example, a rate of 2% employee and 1% employer, would produce a net yield of around J$50 million at 1987 prices. Thus, the scheme could be introduced initially with a low contribution so that the impact on labour costs would be very low or negligible.

Table 7
PROVISIONAL COSTING OF COMPULSORY HEALTH INSURANCE AT 1984 PRICES

		J$ million	*J$ million*
Extra income or savings to government			
Contribution of employers (2%), employees (3%) and self-employed		100	110
Bypass charges			13
Net revenue from private hospital beds			0.5
Net saving in employed staff in hospitals and health centres			2
TOTAL		115.5	125.5
Extra expenditure of government			
Employer contribution for government employers			12[a]
Loss of income from hospital fees from insured persons			1.5
Capitation scheme – net extra costs		30	35
Administrative cost			5
TOTAL		48.5	53.5
Net gain (J$ million)	(1984 prices)	67	82
or (J$ million)	(1987 prices)	87	107

Underlying Assumptions
1. No opting out.
2. Hospital inpatient charges for non-insured as at present.
3. 2.0 dependants per insured person.

[a] Calculated from James Alm, *Payroll Taxes and Contributions in Jamaica*, Board of Revenue, Jamaica Tax Structure Project, Staff Paper No. 20, Table 6, p. 28

8. FURTHER DEVELOPMENTS

8.1 New government decisions

The above analysis of the options was presented to the Minister of Health in April 1988. A firm decision was then taken by the Government that compulsory health insurance was not an acceptable option because a further payroll tax could

not be contemplated. And, during the course of 1988, the Government took further initiatives to control the costs of health care and improve efficiency:

(*a*) a law was introduced requiring pharmacists to dispense generic drugs, whenever a generic equivalent existed, for any preparation written on a prescription;

(*b*) a study was initiated on the systems of procuring supplies for the Ministry of Health;

(*c*) a review was established of the structure of the fees charged for the public health services;

(*d*) administrative steps were taken to increase the efficiency of systems of fee collection and to follow up non-payers;

(*e*) a study was established of planned preventive maintenance of buildings;

(*f*) training was initiated of a new grade of staff to relieve nurses of certain tasks;

(*g*) as an incentive to attract staff to work in the public health services, it was decided to build accommodation for them on land owned by the Government.

8.2 Second Report of the Ogle Committee

In the light of the Government's rejection of the option of compulsory health insurance, and after receipt of the results of a sample survey of income and expenditure commissioned by the Ministry of Health, the Ogle Committee presented a further report to the Government in October 1988. The Committee set out in detail a method by which the health services could be privatized. The Committee recommended that the services to be privatized should include, not only hospitals, but primary care, including prevention services. These facilities would be handed over to a health facilities trust. The trust would then make arrangements of varying types for private sector management enterprises to operate, without owning them, as in para. 5 above. This would provide incentives for management to be efficient, to be in constant search for economies and to expand services and increase revenue. For example, foreign currency might be earned by selling services to United States residents. It was specifically intended that the managements would be freed from civil service parity constraints in determining the levels of remuneration for doctors, nurses and other key personnel, and that this would increase recruitment. To ease the transition, the trust would employ the present doctors and nurses, and certain medical technicians, whose services were to be retained, thus, honouring their rights of past service. The Committee recommends that the new arrangements should be tried out in three pilot catchment areas.

Under the new arrangements, people would be charged for health care but the Government would pay per capita annual fees for the provision of preventive

and curative health care to indigent and near-indigent persons. The Committee recommended that an indigent person should be defined as:

— anyone earning under J$50 per week;

— anyone receiving assistance under the Food Aid Programme;

— anyone registered under the Public Aid Assistance and Poor Relief Programmes;

— any pregnant or nursing mother, with a child under five years of age, receiving aid under one of the above Programmes.

The near poor were classed into two groups. Those with annual incomes of J$3000 to J$5499, would be entitled to have 70% of their costs of basic health care met by the Government, and those with incomes of J$5500 to J$7999 (or J$11359 where there was a child under 14), would have 35% of their costs met. The Committee calculated, on the basis of the survey, that 44% of the population was indigent and 35% near-indigent. The Ministry of Health would pay the Ministry of Social Security to identify the indigent and the near-indigent. It was envisaged that the latter would be able to identify the near poor from its national insurance scheme records. Persons once registered as indigent or near-indigent, would be issued with a card for the year even if their circumstances changed. They would also be listed by the health facility which received the capitation payment. The Committee calculated that, out of the Ministry of Health's 1988/1989 recurrent budget, just under J$300 million would be available to pay for the health care of the indigent.

The Committee reports that, in July 1988, the Ministry received a preliminary quotation of J$32-80 per month for the care of indigent persons, with little or no copayment. After deducting tax, profit and other adjustments, the Committee suggested that the cost might be brought down to J$28.4 per month, but this was still above the J$24 per month which would be available if the Ministry's sum of nearly J$300 million was distributed solely among the 1.04 million indigents, leaving no funds to subsidize care for the near-indigent. The Committee concluded that, "Unless, or until, even greater amounts of funds become available ... the Government will not be able to contribute towards the health care of near-indigent persons. It seems that due to financial constraints, assistance may have to be introduced in three phases".

9. COMMENTS AND RECOMMENDATIONS ON THE SECOND REPORT OF THE OGLE COMMITTEE

(*a*) Further consideration should be given to the definitions of indigency and near-indigency. It would seem more appropriate to base the definition on family income than on individual earnings. A family might be defined as husband and wife (or cohabitee) plus dependent children living with them (up to the age of

leaving school or finishing full-time education). The definition would need to be applied to disposible income, after deducting housing costs, and to vary according to family composition. Moreover, consideration would need to be given on whether it should be based on income last month or last year. In the case of the indigent, it would clearly need to be last month to allow for an earner who has recently become sick or unemployed but this suggests reconsideration of whether a change in circumstances would need to be reported during the year for which the card was valid.

(*b*) The estimates of numbers were based on the survey which (due to a failure of communication) was of individual incomes rather than family incomes. A further survey of family incomes may well be needed to give reliable estimates. But even if this were done, it could not establish how many persons would be issued with cards. There would be those who did not apply, despite wide publicity. There would also be those who fraudulently understated their incomes, when it was known for what purposes they were declaring them. From the point of view of the new managers of health facilities, this is crucial information which they will need before taking the risk of operating facilities.

(*c*) The Committee allowed the sum of J$4.7 million for processing data relating to indigent and near-indigent persons. This may well be a substantial underestimate in view of the complexity of the task. Moreover, there are bound to be families in the near-indigent category of whom the national insurance scheme has no knowledge — those with private pensions and investment income, as well as those evading contributions. To protect the interests of the health facility managements, any family should be allowed to apply for a near-indigent card and this would add to administrative costs. The decision of the Government to accept the recommendation, made during the course of this study, to invite a senior expert in means testing to advise the Government early in 1989 is welcomed. It is suggested that the terms of reference for this assignment should include not only costing and regulations but the questions raised in this paragraph and paragraphs (*a*) and (*b*) above.

(*d*) Better estimates are needed of the cost of providing basic services to indigent and near-indigent persons. These cannot be obtained from private insurers for two reasons. First, the new managers will want to devise more cost-effective ways of providing health care than are now covered by insurance. One possibility is a capitation paid general practitioner service, using essential drugs as outlined earlier. Secondly, indigent persons are unlikely to be able to afford insurance. The indigent are likely to include disproportionate users of services because of age or because their health has made them unable to work. There is also the high risk of accidents in certain low-paid jobs. One way of obtaining information about this, would be to undertake a sample census of public hospital patients using the same survey as that used to ascertain family income, as suggested above.

(*e*) While the Committee made provision for managements to be reimbursed for trauma/injury care of persons who die before paying, the Committee does not specify whether the new managements would have a duty to treat first and seek payment later or whether they would be free to refuse care to persons whom they suspect would be unable to pay (e.g., cannot provide a monetary deposit). The Government may find the latter politically unacceptable, while the former places management at uncalculable risks of costs of collection, bad debts and late payment, particularly from persons who may be eligible for cards but have not

applied for them, and those refused insurance because of some pre-existing condition. Existing insurance policies provide cover for 120 hospital days as the maximum for the year. Possibly the Government should "reinsure" managements to provide care in excess of 120 days where this is required.

(*f*) It would not seem practicable to make a start with the scheme with provision for indigents and none for near-indigents, because of the extent of bad debts which would fall on managements. It clearly would not be politically unacceptable to allow them to refuse care in such circumstances.

(*g*) Provision would be needed for payments to be made between managements:

(i) for indigent and near-indigent cases needing to be transferred for care in a specialty not locally available;

(ii) for indigent and near-indigent persons needing urgent health care when away from their normal place of residence, on holiday or for work reasons.

(*h*) The Committee does not explain how it will be possible to operate the new arrangements in three pilot areas, if those expected to pay full cost can obtain cheaper care in another area operating under the existing arrangements.

(*i*) The Committee does not discuss what safeguards would be needed to prevent unnecessary services (particularly surgery) being provided. This problem has not been resolved by competitive pressures in the United States.

(*j*) The Committee does not discuss whether steps should be taken to prevent insurers selling policies closer related to risk — policies related to the number of dependants covered and their age and sex.

CHAPTER 4
COSTA RICA

by
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Costa Rica has a population of 2.75 million, which is increasing by about 3% per year. The income per head is about US$1334 (1985). The country has a long and unbroken tradition of democratic government, in which two political parties predominate. The Constitution is modelled on that of the United States of America, with the separation of powers between the executive, headed by the President, and the one-chamber Parliament consisting of 57 members.

1. THE ECONOMIC BACKGROUND

As in the case of other countries in Latin America, Costa Rica suffered severely from the economic crisis. Economic growth was only 0.8% in 1980, but in the year 1981 the gross domestic product (GDP) fell by 2.3%, with a further fall of 7.3% in 1982. As a result of the stabilization programme, GDP grew by 2.9% in 1983, 8% in 1984, 1% in 1985 and an estimated 3% in 1986. Per capita GDP, which was 1% below the 1977 level in 1981, fell to 11% below this level in 1982 and 1983, but rose to 8% below the 1977 level in 1986. Inflation rose to 86% in the year 1982 but fell to 16% by the year 1986. Unemployment rose from 7.4% to 9.5% between 1981 and 1982, but had fallen back to 5.5% by 1987.

The most formidable problem facing Costa Rica is its external debt. In the late 1970s, Costa Rica borrowed heavily from foreign commercial banks to cover its balance of payments deficits. These debts amounted to nearly US$3500 million at the end of 1986. After the sharp rise in the cost of debt servicing in 1981, the net inflow of commercial credit could no longer be maintained. Moreover, declining export prices, a fall in exports to other Latin American countries and increased imports aggravated the balance of payments situation. In 1980, the trade deficit amounted to US$ 527 million. In mid-1981, the Government suspended external debt servicing. In December 1982, a first IMF one-year stand-by loan was obtained, debts were rescheduled and, as a result of decreased imports, the balance of payments deficit was cut to $28 million in 1982 and $121 million in 1983. The nonfinaancial public sector deficit, which reached a peak of 14.3% of gross domestic product in 1981, was reduced to 3.6% in 1983 and zero in 1987.

Since then, further loans have been obtained from the IMF, the World Bank and foreign commercial banks. Without the rescheduling of debts, debt service

payments would have amounted to 60% of exports in 1985. But the balance of payments deficit increased from $121 million in 1983 to around $177 million in 1985 (about 10% of GDP), but fell again in 1986 to 5.5% of GPD as a result mainly of an increase of 25% of nontraditional exports (traditional exports are coffee, bananas, sugar and beef).

In the negotiations with the IMF for the renewal of credit at the end of 1986, the IMF required a reduction of 3 percentage points in the public sector deficit. The Government decided to achieve this, to the extent of 1%, by cuts in public expenditure and the rest by surpluses in public sector institutions, and by increasing tax revenue by more efficient tax administration, by extending the sales tax to cover services and introducing new taxes on luxury residences, on the purchase of more expensive cars and an increase in the road tax and property taxes.

2. DESCRIPTION OF THE HEALTH SECTOR

2.1 The development of the health sector

Costa Rica has already achieved a high health status for its average income of US$1334 per head. Expectation of life at birth exceeds 75 years and the infant mortality rate is 17 per 1000.

Many factors have contributed to this high health status. Compulsory and free education dates from 1869 and the population is currently estimated to be 92% literate. Virtually 92% of the urban population and 88% of the rural population have piped water, and 77% of houses have WCs. The country has natural advantages for food production and special attention has been paid to the nutrition of vulnerable groups through nutrition centres for mothers and pre-school children at the rate of one per 5000 population, a school meal programme, food subsidies and food fortification programmes. Malnutrition, measured in terms of below 75% of weight for age, was down to 2.5% by 1987.

High priority has been given to the development of health services over the years. The Health Department became a full Ministry in 1927 and the National Health Social Security system, which started on a small scale in 1943, is now available to virtually the whole population.

The hospitals originated as charity hospitals associated with the Catholic Church. Under laws of 1950, a general directorate was established to distribute the profits from the hospital lottery set up in the nineteenth century. From 1961, a stamp tax on certain transactions was established and the revenue was allocated to the hospitals by the same general directorate — by this time, according to the number of consultations and bed-days provided. Meanwhile the Social Security Fund had developed its own ambulatory clinics, first in San José and later throughout the country, as the coverage of the scheme expanded from larger employers to smaller

employers and to the different regions. An important step taken from 1956, was to cover the dependants of insured persons for health care and a further step taken in 1961, was to add to the political constitution an arrangement to provide universal sickness and maternity services. A national plan for health was established between the Ministry of Health and the Social Security Fund in 1970 and both institutions initiated the total care of the population.

Originally the Fund contracted with the charity hospitals for the provision of hospital services. In practice, this meant that two standards of care developed within these hospitals as the Fund could afford to pay for higher standards of care for persons covered by insurance. Gradually the Fund acquired and developed its own hospitals. It had three such hospitals, one in the rural area and two in San José, by 1973. Under a law of that year, the charity hospitals could request the Fund to take over responsibility for them and finance them. By the end of 1977, all of the charity hospitals, except one, had been transferred to the Fund. The last hospital was transferred in 1984. Part of the revenue from the hospital lottery and hospital stamp continued to be allocated to the Fund. The hospitals are organized on three levels. There are 29 hospitals with 7100 beds.

Meanwhile, one of the important activities of the Ministry of Health had been the campaign to eradicate malaria with the help of external funds. From 1973, a further major function was assigned to the Ministry of Health — the provision of a nutrition programme through special centres established throughout the country for pre-school children. This was financed by a 2% tax on imports. By the mid-1960s, the malaria programme had achieved considerable success using auxiliary health workers and volunteers spread all over the country. After malaria had declined in importance as a public health problem, the decision was taken to retrain the malaria workers for the wider functions of a comprehensive rural health programme. As part of the first health plan, launched in 1971, the rural health programme was started beginning with the more dispersed communities. This programme provided virtually the same elements of primary health care as were later to be identified in the 1978 Alma-Ata Declaration. The programme built upon the associations of community development established from 1968 onwards. Village health committees were established and 85% of the health posts were built and equipped by the village health committees. This programme made extensive use of the retrained health auxiliaries working under the supervision of health professionals. By 1978, 400 health posts were established serving, on average, health areas of 3000 persons. The auxiliary workers visited each home four to six times each year. This programme now covers 96% of the dispersed rural population. Its specific achievements include a major improvement in environmental sanitation, a reduction in the birth rate and full rates of immunization of one-year olds of 82% for BCG, 54% for DPT, 87% for poliomyelitis and 52% for measles. The rural programme, coupled with economic development, led to a substantial narrowing in the difference between urban and rural mortality rates.

The rural programme was part of a wider movement to narrow the gap in quality of life between different social groups, with a special effort devoted to raising the standards of both the urban and rural sections of the population who had become marginalized. This thrust had political support at the highest level and a politicial consensus was established and maintained between the political parties which gave continuity to the programme and enabled the health manpower development programme to be planned accordingly.

The main financial support for the programme from 1974 onwards, came from the Family Fund, established by law in that year, by allocating to it 20% of the yield of the sales tax (now reduced to 15%), plus a tax of 5% on the payroll of employers with more than five employees. The original idea behind the law was to establish a Fund to provide cash support to the low-income groups. By the time the law was finalized, it was decided that the main programme should be in kind with a heavy emphasis on health and nutrition. The Fund finances the school meals programme, the school garden scheme, a programme to help small farmers, research on nutrition and food technology, cooperatives, services for children in need of care and for physically and mentally handicapped persons, rural water supply, as well as the general rural health and dental programme. One-fifth of the Fund goes to pay the cost of noncontributory pensions provided on a means tested basis by the Social Security Fund.

The importance given to the social sector in Costa Rica is indicated by the fact that spending on health services had risen to 7.8% of gross domestic product by 1985 — well above the global target of 5% of gross national product. Expenditure on education amounted to one-third of the national budget and 3.7% of gross domestic product. The political decision to devote such high spending to the social sector has been facilitated by the decision to abolish the armed forces in 1949.

From 1982 onwards, one of the main thrusts of policy has been to integrate, at the local level, the mainly curative services provided by the Social Security Fund with the preventive services provided by the Ministry of Health. By 1985, 65% of the population were served by integrated health clinics. The target is to achieve the integration of the services all over the country by the year 1990. This aim of a primary health care system, integrating both curative and preventive services, within reach of the whole population is a central plank of the Costa Rica programme of health for all. Parallel to the extension of the integrated primary health care programme, is the plan to extend the coverage of the rural population with piped water from 88% to 100%, and to build 80 000 dwellings for persons with low incomes.

During the 1970s and early 1980s, the Social Security Fund built new hospitals and substantially upgraded the existing hospitals which it took over. The number of beds in the existing system is sufficient to handle future needs, as far as can be seen ahead. But a considerable redeployment of beds is being made to adjust to the changing age structure and pattern of morbidity.

2.2 The present organization of the public health sector

Three different public institutions provide health services — the Ministry of Health, the Social Security Fund and the Nationalized Monopoly Insurance Company of Costa Rica (The Insurance Institute). The latter provides cash benefits, treatment and rehabilitation for those with occupational injuries and diseases. In addition, important health-related activities are financed by the

Family Fund. The original distribution of responsibilities between the Ministry and the Social Security Fund was based on the level of care — the former provided the primary care services and the latter the hospitals. Now the broad distinction is between the Fund, which mainly provides curative services, and the Ministry, which mainly provides preventive services. But there are areas of overlap which are not precisely defined. The Ministry retains principal responsibility for certain diseases such as malaria, tuberculosis, venereal diseases, zoonotic diseases and mental health. But, inevitably, most cases are treated at the services provided by the Fund. Similarly, the Fund engages in individual preventive action, including immunization and some collective effort such as health education. It estimates that it provides about a quarter of the preventive services in the country.

The Fund maintains 29 hospitals, divided into five classes by level of care. There are nine national hospitals — all in San José, which consume about 64% of expenditure on hospitals. Each of the six regions has a regional hospital which together consume 21% of expenditure on hospitals. There are 14 peripheral hospitals classed into three types by level of care, which consume the remaining 15% of hospital expenditure. The Fund also maintains 123 polyclinics, where ambulatory care is provided, of which 56 were integrated with Ministry of Health services at the end of 1985. The larger polyclinics provide specialist services on referral from the general practitioners working in them. In 1985, they provided 1.8 general practice consultations, 0.8 specialist consultations and 0.2 dental consultations per inhabitant.

The Ministry of Health administers four main programmes through three main budgets financed from a complex variety of sources described below. It is organized in six divisions — administration, finance, epidemiology, environmental health, health services and pharmacies, and primary health programmes. There is also a planning unit to support the Minister's Office.

The Ministry and the Fund operate through five regions, of which the central one covers the capital and is divided into two subregions. The Ministry maintains 87 health centres almost coinciding with the 87 cantons into which the country is divided. These are the health centres which are being integrated with the relevant clinics provided by the Social Security Fund, with the capital expenditure to rebuild or extend facilities provided by the Fund. About 70% were already integrated by the end of 1986. The Ministry is also responsible for about 500 nutrition centres, which monitor the nutritional status of children and provide food for malnourished families, and about the same number of health posts, each caring for around 3000 persons in their homes, with two paid staff. Most of the staff time is spent visiting families, though one of the two staff provides a session at the post during the afternoon. Their functions include nutritional and disease surveillance, environmental health, health education and some simple treatments (e.g., ORT). The intention is to make the nutrition centres and health posts satellites of the integrated health centres covering the same area. Thus, all the eight essential elements of primary health care, as defined at Alma-Ata, will be provided in an integrated local service, with the addition of birth and death registration and the surveillance of disease.

The Industrial Injuries Scheme, administered by the Insurance Institute, includes the provision of health services to injured employees. The Institute maintains a convalescent unit with 70 beds, 15 dispensaries — two of which also have rehabilitation units — and one separate large rehabilitation unit. The specialized

medical care of injured persons in San José is provided by 52 private doctors on an approved list who are paid fees. The fee covers three treatments — a fourth leads to a further fee. When surgery is required in San José, this is normally provided in a private clinic and the surgeons are paid per operating session with three grades of payment varying with the type of surgery. Outside the capital, the Institute contracts for health services to be provided by the Social Security Fund and also for very complicated surgery in San José itself. The Institute buys its own drugs and contracts with private contractors for X-ray and pathology in San José and with the Social Security Fund outside the capital. The Institute has 38 salaried doctors who provide the dispensary services, certify the extent of disability, refer cases to the private specialists and audit bills for medical services. By using the private sector in San José and its own dispensaries, the Institute provides prompt treatment for the cases for which it is responsible.

The Family Fund, administered by the Ministry of Labour, is the main source of finance for the rural nutritional and dental health services provided by the Ministry of Health. But it also finances the construction of school dining halls, the school lunches provided in them, school uniforms for poor children, special education for the mentally and physically handicapped, school vegetable gardens, cooperatives, help to low-income farmers, teaching and research on food and nutrition, rural water and sanitation programmes and, more recently, housing for the lower-income groups. It also finances the noncontributory means tested pensions. (The health-related expenditure of the Fund is shown in Table 1.)

Table 1
EXPENDITURE OF THE FAMILY FUND ON HEALTH-RELATED ACTIVITY 1986 AND 1987
(Million colones)

	1986	
	million colones	*percentage*
Rural health [a]	480	24.7
Capital construction (Ministry of Works)	58	3.0
Nutrition supplementation	631	32.5
Support for low-income farmers (Ministry of Agriculture)	21	1.1
Rural water and sewage	112	5.8
Research and teaching in nutrition	23	1.2
National Housing Institute	83	4.3
Welfare institutions	113	5.6
Research on food technology [a]	5	0.3
Supplies of school uniforms and food	17	0.9
Institute for Alcoholism and Drug Addiction	18	0.9
School meals and nutrition (Ministry of Education)	383	19.7
	1944	100.0

[a] Paid to Ministry of Health

2.3 The financing of the public health sector

The Health services provided by the *Social Security Fund* are financed to the extent of 85% (1987) by contributions made by employers, employees and the self-employed. In the case of employed persons, contributions are compulsory and are charged at the rate of 5.5% of payroll falling on the employee and 9.25% falling on the employer, without any income ceiling. They were paid by 481000 employees in 1986. In return for these contributions, employees and their dependants are entitled to receive free and comprehensive health services. The self-employed can voluntarily insure for free services for themselves and their dependants. The contribution is 12.25% of income, where monthly income exceeds about US$125, with reduced rates of contribution of 9.5% and 8.5% for lower-income groups. Persons with incomes below US$100 per month, are not eligible to join. In addition, there are special arrangements with special groups of lower-paid self-employed persons, whereby membership is obtained for a lower level of contribution. A total of 123 000 self-employed persons contributed in 1986.

Also entitled to benefits are pensioners who have paid contributions in the past and noncontributory pensioners who have not. The Government contributes from taxes 4.7% of the income of the Fund, partly in the form of its contribution of 0.75% of payroll, partly as a subsidy to pay for the cost of indigents (though the amount paid is less than the cost of services provided), and part of the yield of the earmarked stamp tax is paid to the Fund. In addition, a small sum is paid by the Ministry of Justice for services rendered to pensioners.

Indigents become entitled to use the services by obtaining a certificate valid for six months from the Ministry of Health. A total of about 125 000 certificates were valid during 1986. The policy of the Fund is to treat first and seek payment afterwards. A person who claims to be indigent, but has no certificate, is sent to obtain one after treatment. Inevitably, this policy leads to the accumulation of bad debts. In practice, both pensioners and the indigent are considerably cross-subsidized by the contribution income mainly collected from employed persons and their employers. Indeed, it is calculated that, while only about 5% of the income of the Fund comes from the Government to pay for the services used by indigents, the cost of providing for indigents is about one-third of the cost of all the health services provided by the Fund. This is because indigents are high users of services — particularly hospital services where they have long periods of stay compared with the rest of the population.

Persons who are not indigent pay charges according to three income groups of 25%, 50%, or 100% of the full average cost, including depreciation, of the services they use. For out-of-hospital care, an inclusive charge is made which covers consultation and any drugs, X-rays or pathology provided. The money collected is only 1.4% of the Fund's total income for health and maternity care. A further source of income for the Fund (4.4% of the total) is the part of the profit from the hospital lottery channelled from the Ministry of Health. Finally, 4.7% of the income comes from rent and the income on investments (see Table 2).

Table 2
SOURCES OF INCOME OF THE SOCIAL SECURITY FUND, 1987

	Million colones	*Percentage*
Contributions	12 321	83.8
Taxes	689	4.7
Payments of patients	199	1.4
National Insurance Institute	168	1.1
Hospital lottery	635	4.3
Rent, interest and other	685	4.7
TOTAL	14 697	100.0

The major part of the income of the *Ministry of Health* can be traced back to taxes, but only a minor part comes out of general taxation. The major part comes from earmarked taxes. The Ministry receives a share of the payroll tax and sales tax collected by the Ministry of Labour for the Family Fund, a 2% tax on imports, a share of the revenue of the cigarette tax, and the yield of two stamp taxes. It receives voluntary contributions from at home and abroad, payments for goods and services, some paid by the Social Security Fund and income from rent and investments.

The financing of the different services provided through the Ministry of Health is extremely complex. Only a summary of the main points is given here. In total, the Ministry has 26 different sources of income. The first point to make is, however, simple: the Ministry recovers the cost from manufacturers of registering drugs and certain foods. The money flows for these functions are, of course, small. The different sources of income of the Ministry in 1985 are classified into categories as shown in Table 3.

Table 3
SOURCES OF INCOME OF THE MINISTRY OF HEALTH, 1986

	Million colones	*Percentage*
Taxes	2 384	88.9
Sales, licences	118	4.4
Rent	—	—
Interest	44	1.6
Hospital lottery	124	4.6
External aid	13	0.5
TOTAL	2 683	100.0

The first major budget in the Ministry is that of the Technical Council for Medical and Social Care. The composition of the Council is laid down in the law. It has four sources of income. The first is that of the lottery, subsidized by those who

take part. In 1986, contributions were received on behalf of 425 000 insured persons. Records of payment are kept classified only by the employer. There are, at present, no separate records for employees such as are kept by the Social Security Fund. Cases of noncompliance are reported to the Ministry of Labour which initiates legal action as appropriate. The expenditure of the Institute on health services for industrially injured persons in 1986, is shown in Table 4.

Table 4
EXPENDITURE OF THE INSURANCE INSTITUTE ON HEALTH SERVICES, 1986

	Million colones	*Percentage*
Fees of doctors	33.9	11.1
Purchases from private pharmacies	3.5	1.1
Purchases of Social Security Fund services	65.8	21.5
Drug supplies	34.7	11.4
Clinics	143.0	46.8
Reimbursement of travel expenses	15.4	5.0
Reimbursement of hotel bills	9.4	3.1
Rent	—	—
TOTAL	305.7	100.0

In Table 5, the expenditure of the public sector on health services and health-related activity in 1986 is brought together, eliminating double counting and is shown by source of funds.

Table 5
CONSOLIDATED EXPENDITURE OF PUBLIC SECTOR ON HEALTH SERVICES, 1986
(Including revenue from lottery but excluding patients' sales and licences)

	Million colones	*Percentage*
Health services		
Social Security Fund	10 936.3	75.1
Ministry of Health	2 504.6	17.2
Insurance Institute	305.7	2.1
Health related activity		
Family Fund	809.0	5.5
TOTAL	14 555.6	100.0

The cuts and redirection of public expenditure for the year 1987 have not only affected the Family Fund. The Social Security Fund has had its funds for

construction, for medical equipment and furniture, halved by the Ministry of Finance so that the Fund will make a surplus to help finance the fiscal deficit. As the health side of the Fund cannot legally have a surplus, it has invested most of the money in short-term loans:

(1) to enable the San José Water Project to be completed (46 million colones);

(2) to finance half the local contribution to the water scheme funded by the Inter-American Development Bank covering 72 towns (500 million colones);

(3) to enable the municipality of San José to maintain its garbage disposal service (6 million colones).

In addition, the Fund has agreed to finance the cost of vaccines and medicines needed for the Ministry of Health's programme of work (30 million colones) for vaccines and 20 million colones for drugs.

Most severely hit are the Ministry of Health (and, incidentally, the University). Hence the need for the new taxes.

2.4 The private sector

There are three private hospitals or clinics, all in the capital, which together provide 140 beds of which only 45% are on average occupied. Of the three hospitals, one is solely for maternity cases. The other two provide emergency services, medical and surgical patient care. By interpolation from earlier trends, it can be estimated that their combined income was around $5 million in 1987. Some of the Social Security Fund hospitals also provide clinic space for the private practice of doctors, both in general practice and in specialties. About 200 doctors have consulting rooms at these hospitals, of whom a considerable number also work full-time for the Social Security Fund. It is estimated that 500-600 doctors working for the Fund are also engaged in private practice.

The expenditure of private urban households on health care was estimated as part of the 1974 family expenditure survey. It came to 6.8% of household expenditure. An estimate of family expenditure on curative services is also available from a national sample survey conducted by the Central Statistical Office in 1986 for a different purpose. The survey was based on responses from 7409 households whose average expenditure on health care was US$44. A new national family expenditure survey is being conducted by the Central Statistical Office covering 6300 households spread over a year.

Families not only pay for private hospitals, private medical and dental services and drugs from private pharmacists, but, if insured by the Social Security Fund, may use one of the roughly 300 doctors actively providing what is called "mixed medicine". Under this system the patient pays the doctor on a fee-for-service basis but the patient is given free drugs from a limited list and access to X-rays and laboratory tests all paid for by the Fund. Payments to doctors in this system are estimated at 90 million colones for 1986: the price for a visit is half normal charges.

In addition to expenditure by private households, 500 private employers have about 630 salaried doctors working for them — most of them on a part-time basis. The employers provide them with clinics and pay their salaries. The Social Security Fund provides drugs and equipment: the price for a visit is a quarter of normal charges.

In addition, some employers pay contributions, in whole or part (the other part being paid by the employee), for the private health insurance of employees offered by the Insurance Institute in its capacity as the nationalized monopoly insurance company. The Institute received an income of 20 million colones from these groups schemes in 1985. Individuals also take out similar health insurance and contributed 26 million colones to buy it in 1985. Both types of policy work on a reimbursement basis with a deductable per claim and a proportion of the cost of each claim paid by the insured person (coinsurance).

A further sector of financing is that of voluntary contributions made to non-government organizations and local fund-raising efforts including local fêtes and lotteries. There are only six important national fund-raisers. They are the Red Cross, the Family Planning Organization (which is also substantially subsidized by the IPPF), Teleton (which raised funds for rehabilitation) and three hospitals in San José.

Statistics are kept each year of drug imports. These figures can be used by adding the value added by local production, deducting public sector purchases and exports and adding mark ups as appropriate.

As part of this study, a survey was commissioned from the Institute for Economic Studies at the University of Costa Rica of all possible sources of data to produce estimates of private expenditure for 1986. The survey was undertaken by Brenda Klupsen. Private expenditure was defined to exclude transport costs in going to health facilities and lost earnings. It also excluded health expenditure made outside Costa Rica. The estimates made from the survey are shown in Table 6. In Table 7 public and private expenditure are brought together. In total, health expenditure amounted to 7.6% of gross domestic product in 1986.

Table 6
PRIVATE EXPENDITURE ON HEALTH SERVICES, 1986

Category	*Expenditure (million colones)*	*Percentage*
A. By households		
Doctors	673.8	17.6
Drugs	1 633.0	42.6
Diagnostic tests	211.8	5.5
Dental care	773.3	20.2
Hospital care	112.6	2.9
Health insurance	46.5	1.2
B. By nongovernmental organizations	186.0	4.9
C. By employers	193.9	5.1
TOTAL	3 830.9	100.0

Table 7
CONSOLIDATED PUBLIC AND PRIVATE EXPENDITURE ON HEALTH SERVICES AND HEALTH-RELATED ACTIVITY, 1986

	Million colónes	*Percentage of GDP*
Public expenditure		
Health services	13 747	5.7
Health-related activity	809	0.3
Private expenditure	3 830	1.6
TOTAL	18 386	7.6

The survey also indicates quantitatively the role of the private sector within the health services of Costa Rica. In the case of visits to doctors, 84% are to the public sector and 16% to the private sector. But, in view of the higher price of the drugs used in the private sector, private expenditure on drugs is 89% of public expenditure. In the case of hospital care, only 1.8% of hospitals drugs are in private hospitals. The largest role of the private sector is in dentistry, where 54.5% of visits are to the private sector. While the role of the private dental sector has fallen since 1971 as the Social Security Services have expanded, the role of the private sector of doctor visits has increased since 1983 from 12.5% of total visits to 15.8% in 1986. This indicates dissatisfaction with the services provided by Social Security.

2.5 Trends in public health expenditure

In Table 8, trends in public health expenditure are shown for the period 1981 to 1986. The table shows that public expenditure rose from 5.4% to 5.7% of GDP between 1982 and 1986. It is not possible to break down the expenditures of the Ministry of Health, the Family Fund or the Insurance Institute by geographical region. But in Table 9 expenditure per head of the Social Security Institute is shown for each geographical region for the period 1981 to 1986. In making this calculation, the value of services used by persons resident outside each region are attributed to the region of residence. With the one exception of the Far North Region, the position of the least provided regions shows marked improvement between 1981 and 1985.

Table 8
TRENDS IN CONSOLIDATED PUBLIC HEALTH SERVICES EXPENDITURE 1982-1986

	(million colones)				
	1982	*1983*	*1984*	*1985*	*1986*
Ministry of Health	828	1 108	1 288	1 601	2 505
Social Security Fund	4 390	5 978	7 119	8 459	10 936
Insurance Institute	68	107	141	237	306
TOTAL	5 286	7 193	8 548	10 297	13 747
Percentage of GDP	5.4	5.6	5.4	5.4	5.7

Table 9
EXPENDITURE PER HEAD OF SOCIAL SECURITY INSTITUTE BY REGION, 1981-1986 AS A PERCENTAGE OF EXPENDITURE IN THE CENTRAL SOUTH REGION

Regions	*1981*	*1982*	*1983*	*1984*	*1986*
Central south	100.0	100.0	100.0	100.0	100.0
Central north	60.0	61.0	60.5	61.2	65.3
Huetar north	54.8	42.8	40.0	41.2	44.6
Chorotega	51.8	54.9	53.8	52.9	57.5
Huetar Atlantic	35.2	37.0	39.3	39.0	45.2
Brunca	59.8	61.3	64.0	64.3	73.4

3. A FINANCIAL MASTER PLAN FOR FUTURE EXPENDITURE

As part of this study, a financial master plan has been prepared showing the planned expenditure of the Ministry and of the Social Security Fund for the period 1986 to 1990. The plan costs the targets, objectives and programmes of the two agencies. As mentioned earlier, one of the main objectives is to complete the process of integrating the remaining separate health centres maintained by the Ministry of Health with the corresponding clinics maintained by the Social Security Fund.

The number of hospital beds in the existing system is sufficient to handle future needs, as far as can be seen ahead, but several hospitals will be rebuilt and others upgraded and a considerable redeployment of beds will be needed to adjust to

the changing age structure and pattern of morbidity. In addition, a major investment in new equipment is planned to allow for the changing pattern of morbidity and particularly to make new technologies available to the rural population who are at present underserved.

Health expenditure per head is already up to 37% higher for the regions with the worst mortality rates than in the regions with the best. It is planned to raise this differential to 50% by 1990. At the same time, further action is to be taken to improve the health of mothers and children, not only in poor rural areas but in deprived urban communities and shanty towns.

It is planned to eradicate measles, tetanus and rheumatic fever by 1990 and maintain the eradication of poliomyelitis (achieved in 1973) and of diphtheria (achieved in 1975). It is also planned to eliminate malnutrition, defined as below 75% of weight for age, and to reduce the proportion of infants below 2.5 kg in weight from 8% to 7%. The campaign to combat malaria and some other communicable diseases is hampered by the problem of the inflow of infected refugees.

As the pattern of morbidity and mortality has shifted from that typical of a developing country to that typical of a developed country, health priorities are being adjusted accordingly. As the problems caused by unsafe water supplies and inadequate sanitation are being overcome, the focus of environmental work is shifting towards environmental pollution, particularly of rivers, the problems caused by chemicals and pesticides and excessive noise. Campaigns against alcohol, tobacco and accidents (at work, on the roads and in the home) are now high priorities. In the personal preventive field, screening for cervical cancer, rehabilitative medicine provision for the elderly and chronic sick, treatment for cancers, diabetes, hypertension and mental illness are now major areas for development.

Administratively, the key objectives of the Social Security Fund for the next four years are to decentralize services down to district level serving populations averaging 6000 persons, to increase the extent of local participation, to strengthen intersectoral collaboration and to humanize the provision of services.

The financial plan to support the programme has been prepared on the basis of a series of financial, demographic and economic hypotheses. The latter have been chosen after discussion with the Central Bank and the Ministry of Finance. On this basis, the available financial resources have been projected and the expenditure calculated on the basis of projections of demand, trends in unit costs, the opening of new or improved facilities and the priorities indicated above.

The financial plan is summarized in Table 10 in percentage terms using constant (1978) prices. The major part of capital expenditure on health services is devoted to medical equipment rather than new buildings. The plan can be achieved by a growth in health expenditure slower than the planned growth of the gross domestic product.

Table 10
FINANCIAL PLAN FOR THE PUBLIC HEALTH SECTOR, 1987-1990
IN CONSTANT (1978) PRICES

	1987	*1988*	*1989*	*1990*
Capital				
Ministry of Health	2.49	3.02	3.40	4.12
Social Security Institute	8.99	8.21	8.76	6.07
Water and sanitation	10.96	9.51	9.95	5.30
Subtotal	22.44	20.74	22.11	15.49
Current				
Ministry of Health	11.60	12.13	12.50	13.76
Social Security Institute	65.96	67.13	65.39	70.75
Subtotal	77.56	79.26	77.89	84.51
TOTAL	100.00	100.00	100.00	100.00
Percentage of GDP	7.28	7.06	7.02	6.68

Table 11 separates expenditure on social security inpatient services from expenditure on hospital outpatient services and community health services. While expenditure on inpatient services is planned to grow by 40.7% in constant prices, expenditure on other services is expected to grow by 43.9%. Thus, it is planned that the strengthening of community services will help to contain the growth of hospital costs.

Table 11
SOCIAL SECURITY MEDICAL SERVICES[a] BROKEN DOWN
INTO INPATIENT AND OTHER HEALTH CARE
(Million colónes)

	1987	*1988*	*1989*	*1990*	*1990 1987=100*
Inpatient care	6 752	7 652	8 551	9 500	140.7
Other health care	4 041	4 616	5 178	5 815	143.9
TOTAL	10 793	12 268	13 729	15 315	

[a] This covers only current expenditure and excludes items which cannot be allocated — administration, central supplies, building maintenance, loans and scholarships

4. THE PROBLEM OF RECURRENT COSTS

There was, until 1987, no problem of a shortage of finance for operating costs in any of the four sectors of public health expenditure. The extra recurrent costs falling on the Social Security Fund, as a result of capital developments, were absorbed by the steadily increasing contribution income: unemployment was falling despite the continuing growth of population. Difficulties were experienced at the height of the sudden economic crisis in 1981 but urgent steps were taken both to contain expenditure and to increase contribution income by identifying employers who were not complying with the law requiring them to pay. As mentioned earlier, the problem in 1987 was largely resolved by extra taxes.

The plan for the next four years, as mentioned earlier, does not involve an addition to hospital beds but the replacement of nine old hospital buildings and the upgrading of other hospitals. This will lead to higher operating costs. The main thrust of the plan is to complete the integration of the main preventive and curative services and this will involve substantial additional expenditure as three new, and many other extended, health centres are to be opened. Moreover, the priority of the Ministry of Health to bring services closer to the dispersed rural population will require additional staff. As a whole, it is planned that expenditure on the recurrent costs of hospitals will grow by 38.6% and on other health services by 41.8%. Nearly all the capital expenditure will fall on the Social Security Fund. None of it will be financed by external aid.

Both the Ministry and the Social Security Fund make careful calculations of recurrent costs before any capital project is undertaken. The Fund, moreover, puts aside the money both for construction costs and equipment before any project is started. The Fund was able to show the capital and running costs for 15 of its clinics. The ratio of recurrent costs to capital costs varied from 34% to 61%. The ratio was also calculated for three hospitals which are being, or are rescheduled to be, renewed. The increase in recurrent costs after rebuilding is small, giving ratios of recurrent to capital costs of only 2.11, 2.83 and 2.86.

On present economic forecasts, the contribution income of the Social Security Fund is expected to grow nearly in line with extra expenditure. And the recent payment to the Fund of the money owed by the Government in the form of government securities will add to income from interest payments. The main uncertainty is whether the Ministry of Finance will in the future be in a position to pay the State contribution to the Fund and the subsidy to pay for the cost of the care of indigents. This has caused major problems in the past. The main problems of financing extra recurrent costs falls not on the Fund but on the Ministry of Health. The problem became acute in 1987 when the original budget of the Ministry was cut by 25.2% until extra tax income became available. The largest cut, of nearly 52%, was in the income received from the Family Fund. This was caused by two factors. First, the percentage of the sales tax allotted to the Fund was reduced from 20% to 15%. Secondly, the proportion of the Fund devoted to housing was increased from 3% in 1986 to 18.5% in 1987, in line with the new government priorities. In addition, a decline in central government funding reduced the original budget of the Office for International Cooperation in Health by nearly 27%. This was relieved later by the extra taxes.

The problems facing the Government are twofold. First, public expenditure has to be kept within the limits agreed with the IMF. Secondly, room has had to be found within it for financing the Government's priority for housing development.

The Ministry of Health was faced with such extreme problems in early 1987 that it only had money for the year sufficient to pay its staff and nothing else. The Ministry therefore approached the Social Security Fund to see if it could help to finance the Ministry's services, which it agreed to do. Requests for external assistance, consistent with the Ministry's plan, were also made as part of the Central American Plan for Health. While some help can be expected from this initiative, donors tend to discriminate against countries like Costa Rica which already have successful social programmes. The possibilities for improving the financial situation of the health sector consist either of increasing revenue or of making savings by greater efficiency. These two options are considered below.

5. OPTIONS FOR INCREASING REVENUE

5.1 User charges

There would seem to be three possibilities under this heading. First, the Social Security Fund could make more strenuous efforts to recover the charges due from those who are not insured. The potential for this is, however, limited in view of the policy of treating first and seeking to recover costs only after the treatment has been provided. This inevitably leads to the accumulation of bad debts.

Secondly, several of the Fund's hospitals provide private beds in two classes — double rooms and single rooms. Full cost is charged for these rooms to the noninsured and half this cost to the insured. Full cost is calculated to include the depreciation of capital on the basis of historical cost with only a modest upward adjustment for inflation. Revenue could be increased by basing the charges on the replacement cost of capital with the addition of charges for interest.

A third possibility, is to introduce user charges for those covered by insurance. The possibilities include a daily charge for hospital care to cover the cost of food with more substantial charges for maternity cases because this type of need for hospital admission is known in advance. Charges could be made per curative consultation and per drug item supplied. The case for the latter is strong in view of the high rate of prescribing and the high import content of pharmaceutical supplies.

User charges would not, however, be acceptable to either of the two main political parties. The possibility of introducing charges was discussed in 1974. The reaction of the trade unions at that time was to demand a reduction in the rate of contributions paid by employees if charges were introduced, thus negating one of the objects of charging.

5.2 Increasing the yield of contributions and payroll taxes

Contributions, or taxes, based on the payroll are collected through employers by the Social Security Fund, the Insurance Institute (for industrial injuries), and the Ministry of Labour (for the Family Fund). The number of inspectors employed by the Insurance Institute to collect contributions is 13 and these also work to enforce the payroll tax for the Ministry of Labour. The Social Security Fund employs 132 inspectors. There is some exchange of information between the Social Security Fund and the Insurance Institute but the computer systems are not compatible. Moreover, while the Fund maintains individual records as this is necessary for pension purposes, the Insurance Institute does not. Enforcement of the payroll tax by the Ministry of Labour is poor. The Ministry accumulated, from 1974 onwards, outstanding debts owed by employers of around 100 million colones.

The 1984 population census enumerated 575 625 employed persons (plus 155 823 self-employed and 19 517 employers). Of the employed persons, only 425 000 (74%) are insured by the Insurance Institute and 481 000 (84%) by the Social Security Fund. The lower rate of compliance with the Institute's scheme is partly due to employers understating the number of their employees (particularly those which are high risk) compared to information given to the Social Security Fund.

The following steps could be taken to increase the income from contributions and payroll taxes:

(*a*) to make record systems fully compatible and exchanged between the agencies. Economies could, moreover, be found by having one common record system on computer;

(*b*) combining the inspectors;

(*c*) paying inspectors on a commission basis rather than on salary. This was done by the Social Security Fund in 1982 and resulted in 550 million colones extra income during the year. The system had to be abandoned when it was judged to be incompatible with the government salary structure. The inspectors employed by the Insurance Institute are not, however, subject to the government salary structure. The introduction of a commission basis of payment for inspectors, as for the Institute's insurance agents, is being considered by the Institute;

(*d*) using the Social Insurance Fund records of individuals to follow up persons below retirement age who were employees but whose contributions have lapsed to see if they are self-employed, unemployed or working for a new employer who is evading the payment of contributions.

6. OPTIONS FOR FINDING SAVINGS BY MORE EFFECTIVE USE OF EXISTING RESOURCES

6.1 Extending the system of unit costing

The Social Security Fund already has plans to develop its hospital costing system by costing the main specialties separately. The costing of health centres and clinics could be similarly extended, to separate the different elements of primary health care and cost units other than curative units such as immunizations, family planning units, antenatals, etc. Moreover, more of the costs incurred centrally, such as the purchase of drugs and equipment, could be attributed to the hospitals and clinics which actually use the supplies. The aim of the costing exercise would be to identify high-cost units and adjust, for example, staffing levels or utilization accordingly. In short, it would be to secure a more efficient use of resources.

A study was commissioned to calculate the operating costs of two primary care units from the Institute of Economic Studies at the University of Costa Rica. The study had two purposes. The first, was to test the feasibility of developing a costing system. The second, was to demonstrate the uses which could be made of data of this kind. The primary health care units chosen for the study were both integrated in the sense that they contained both Ministry of Health and Social Security services. One was large with a total of 200 staff and the other was small with 33 staff. The main difference in the range of services offered was that only the larger one had specialists (a total of 13) and a wide range of diagnostic support services. Only simple diagnostic equipment was available at the smaller centre: it had no radiological technicians or auxiliaries and only one micro-biologist, while the larger centre had three radiological staff and one micro-biologist.

The study divided each subhead of expenditure by subservice as shown in Table 12. The table excludes expenditure on sickness and maternity benefits. Also calculated was the unit cost per visit for medical and dental care. A visit for medical care cost 518 colones at the larger centre and 329 colones at the smaller. There was an even greater difference in the cost per dental visit (274 colones at the larger centre and 136 colones at the smaller). The difference in the cost per medical visit was partly due to the fact that at the larger centre patients were seen by doctors (including specialists), while at the small centre patients could be seen by nurses and there were no specialists. It was also due to higher administrative costs in the larger centre. Thirdly, and most important, it was because of higher costs for maternity and sickness benefits. On the other hand, the study found that laboratory costs per visit were higher at the smaller centre even though the larger centre did nine tests per 10 consultations and the small centre only two. The reasons for the higher cost of dental visits at the larger centre was that more specialized treatments were provided and more expensive materials used per visit.

Table 12
THE DIVISION OF COSTS IN TWO PRIMARY HEALTH CARE CENTRES BY TYPE OF OF SERVICE

Service	*Larger centre*	*Smaller centre*
Medical care	85.5	60.0
Joint medical	0.9	0.0
Co-employed practitioner	1.2	0.0
Dental care — Preventive	0.0	2.0
Dental care — Curative	3.5	3.9
Community/rural health [a]	6.4	15.2
Social work	0.7	2.7
Environmental health	0.7	2.3
Nutrition [b]	1.1	13.9
TOTAL	100.0	100.0

[a] In larger centre, community health only
[b] Excluding food products

The study suggested that economies might be made in the following ways:

(*a*) by concentrating pathological tests in large laboratories;

(*b*) by reducing the administrative staff at the larger centre;

(*c*) by tighter control of certificates for sickness at the larger centre;

(*d*) by increasing the dental work load, or reducing the dental staff, at the larger centre.

The study succeeded both in establishing the feasibility of a costing system for primary health care and demonstrating that such a system could lead to valuable policy recommendations.

6.2 Decentralization of budgets

The first step would be to decentralize budgets down to regional level. Each region would be responsible for paying its own staff and would be charged for the supplies it ordered subject to limits on expensive equipment. In the case of items centrally purchased, such as drugs, each region would purchase items from central stores.

If any requirements could be more economically met by local purchase, regions would be free to make such purchases. The object of budget decentralization is to give regional managers the opportunity to make the best use of the money

available. At a later stage, budgets could be further decentralized — for example, to those districts which have hospitals. The unit costing system as developed above would be one way of evaluating and comparing the performance of different managers.

6.3 The reorganization of the primary care system

Curative services are, at present, provided by salaried doctors. In the larger clinics, appointments are made with doctors according to their availability. Thus, it is rare for a patient to see the same doctor on further visits even during the course of the same episode of illness. Moreover, under an agreement between the Fund and the medical trade union, appointments with general practitioners are scheduled at 15-minute intervals even for a repeat prescription. Clinics are normally open only during normal working hours on weekdays. Any need for medical care at weekends or outside working hours normally has to be taken to the hospital. Curative doctors do not make home visits. In the larger clinics in San José, salaried specialists are also employed. In practice, there is a high rate of referral within the building from general practitioners to specialists.

The system is neither satisfying for patients nor doctors. The former have continuously to make relationships with new doctors. The doctors do not have their own patients and, thus, cannot follow their progress. The low morale of doctors is indicated by the practice of arriving late and leaving early. This inconveniences patients waiting to see doctors and causes a further wait at the pharmacy when it is asked to perform what was planned to be a day's work within a few hours. There are also complaints of lack of courtesy among doctors. Moreover, the high rate of prescribing may also be a further indication of low medical morale.

The solution proposed in 1986, as part of this study, was the introduction of a system of persons covered by insurance registering with a doctor of their choice and that doctor being mainly on a capitation basis — a payment per month for each patient registered with him or her. It was argued that this would create continuity of care for patients and doctors and a 24-hour, seven-day-a-week service. Home visits would also be encouraged. It would also introduce competition between doctors for the registration of patients. Those whose clinic hours were convenient for patients and achieved a reputation for courtesy, as well as competence, would attract more than the average number of patients. In short, these attributes would be rewarded. Finally, the same doctor would be expected to undertake the main preventive services needed by his or her list of patients, thus integrating the work of prevention and cure.

While somewhat higher remuneration was expected to be needed to make the system acceptable to the doctors, economies were expected due to less referral to specialists, less use of diagnostic tests and lower rates of prescribing. Experiments with the new system have started and the first evaluation showed that the vast majority of patients preferred it. Depending on the lessons of this experience, there are plans to introduce the system nationally.

A later development might be to build the cost of drugs and diagnostic tests into the capitation payment and even the cost of referral to specialists. Thus, a doctor who economized on drugs, tests and referrals would be very substantially rewarded. If this is thought too radical and likely to place quality of care at risk, general practitioners could be paid as a bonus a percentage of any savings made in these ways. In short, the capitation system can be seen as a step towards a health maintenance organization. In the United States of America, the main economy achieved by HMOs is in the use of hospital beds. As decisions on admission to hospital are made by separate hospital doctors in Costa Rica, this element of HMO practice is not appropriate to the Costa Rican situation.

6.4 Rationalization of the services provided by the Social Security Fund and the Insurance Institute

As described earlier, the Institute maintains dispensaries and convalescent centres for the care of industrial accident cases. The Social Security Fund is responsible for the care of persons who have suffered accidents on the roads or at home. There are, thus, duplicated services running in parallel and economies could be achieved by combining the services. The advantage of the separate arrangements provided by the Institute, is the rapid treatment which is secured which compares favourably with the waiting lists in Social Security Fund hospitals. A further advantage, which makes the service popular with patients, is the choice of private specialist and the attitudes of specialists resulting from payment on the modified fee basis described earlier. It would not seem impossible to retain some of these positive features if the services were combined. There are potential economies of scale both in operating joint rehabilitation centres and clinics or dispensaries.

6.5 Rationalization between the Ministry of Health and the Social Security Fund

Over the years, the scope of the services provided by the Social Security Fund has been continually extending so that there is now considerable overlap in the provision of preventive services. Both the Fund and the Ministry maintain regional organizations to supervise and support their services. The Fund's regional organization has much larger responsibility when judged either in terms of the number or seniority of staff supervised or the money spent. Indeed, the Ministry's northern region has a regional organization which is responsible for only 140 staff with an average salary of 15 000 colones a month. This compares with the Fund's northern region which has 688 staff at an average salary of 22 000 colones.

The physical integration of the Ministry and Fund's services is steadily being achieved as both sets of staff become sited in the same building. Joint management

is introduced by making the doctor, nominally responsible for the whole centre, he who has had the longest service, whether that doctor is a Fund or Ministry employee. But all this does not ensure that the two staffs work together as intended, as an integrated team exchanging information, sharing resources and planning policy together. There is a strong tendency in many centres to find that the most peaceful way to cohabit is not to inquire into each other's affairs. Much more effective integration and a more flexible use of staff would be secured if both sets of staff had the same employer and were supervised by the same regional organization. The local combination of the two services would also lead to economies.

6.6 The purchasing, storage and distribution of supplies

The Ministry, the Fund and the Institute all buy stores and distribute them. This means that each organization seeks tenders for drugs and other supplies, chooses among the offers, receives the supplies into store and then distributes them to their various operating units as needed. Each organization buys similar, or the same, items in smaller quantities than the three combined and, thus, obtains less favourable prices. The quantity needed to be kept in store for three organizations is larger than would be needed for one. Distribution by separate vehicles is also wasteful. Moreover, both the Ministry and the Fund manufacture reagents. Combining the purchasing, storage and distribution systems could clearly bring economies.

6.7 The road to rationalization

The present complex system of organizing and financing health services in Costa Rica can only be understood by examining its history. The separate provision for industrial injuries financed by risk-related levies on employees dates from 1924. Its source of revenue has determined its functions. At one time, there was a clear division of responsibility between the Ministry and the Social Security Fund. The latter provided curative services for a minority of the population and the Ministry looked after the problem of communicable diseases which ravaged the whole country. A whole series of fiscal devices were piled one on top of another by successive Parliaments, first to help finance the hospitals (the lottery and the hospital stamp) and then, to help disadvantaged families with nutrition, water, sanitation and rural health. Meanwhile, the Social Security Fund, with its buoyant revenue, expanded until it provided curative services for all and now overlaps heavily with the Ministry in the provision of preventive services.

The system cries out for rationalization. And the present economic situation creates the impetus for undertaking it. Considerable economies could be found

by a more rational distribution of responsibilities planned to serve functions rather than based on the different sources of finance and the accompanying well intentioned legislation. The latter has led to a labyrinth of complex and wasteful accounting systems within the Ministry of Health. Logically, all health services should be in one organization and, possibly, all, or nearly all, cash benefits in another. New consolidating legislation could redefine functions and allow different sources of finance to be pooled and thus, used more flexibly.

If, however, such radical legislative change would cause delay and open up a hornets' nest of controversy, given goodwill and strong direction from the centre considerable progress towards rationalization could probably be made on an agency basis. The wording of legislation would need to be examined to see how far this is possible. For example, only one organization could collect money from employers acting as agent for the two others. One agency could buy and distribute supplies for all three. The Social Security Fund could provide a still wider range of services acting on policies laid down by the Minister of Health.

The choice between these courses of action must, of course, depend not just on what is legally possible but on political considerations as well.

7. CONCLUSIONS

This study has therefore led to two main conclusions:

(*a*) both the satisfaction of users and doctors could potentially be considerably improved by changing over to a system of paying doctors in primary care largely on a capitation basis. This should also lead to improvements in quality due to continuity of care for patients by the same doctor. It should also save costs;

(*b*) there is considerable scope for economies by the rationalization of services. It would require a further, more detailed, study to calculate the extent of the economies which could be made. It might even be possible to lower the level of the combined payroll taxes by one combined, more effective agency to enforce them as well as by the rationalization of service delivery.

CHAPTER 5
LESSONS FROM THE EXPERIENCES OF THE THREE COUNTRIES

At first, it may seem that little can be gained from grouping together and comparing the recurrent cost problems of three countries with such diverse experience and such different ways of financing health care. The contrast is greatest between Mali and the other two countries, simply because Mali is among the poorest countries in the world. Both Costa Rica and Jamaica have levels of living, in terms of GDP per head in US dollars, five or more times greater, though turning local currency into dollars overstates the difference in terms of the goods and services that the dollars can buy. The size of population in Jamaica and Costa Rica is similar, while the population of Mali is about two-and-one-half times greater. Both Costa Rica and Jamaica have good roads, good bus services and a considerable number of private cars and the land area is relatively compact. None of this is true of Mali.

Total expenditure on health services in Mali, including traditional services, as a proportion of gross national product, is about 4.3%. In Jamaica, including the private sector, it is around 3.5% of gross domestic product, while in Costa Rica it is 7.6% — probably the highest figure to be found in a developing country. While the main finance for the health sector in Mali comes from direct payments for services made by private households (around two-thirds if the modern and traditional sectors are included), the role of payments by households is about one-third in Jamaica and only one-fifth in Costa Rica.

The main source of finance for the public sector of health services in Mali is general taxation: the social security scheme plays only a small role. The whole of the public sector is financed from taxes in Jamaica and 43% of total revenue comes from income tax. By contrast, by far the largest sources of finance for health services in Costa Rica are contributions by employers and employees and payroll taxes. Even the Ministry of Health, which only pays for about one-fifth of the public health services, is mainly dependent for its revenue on earmarked taxes and payroll taxes. Jamaica is the only one of the three countries where private health insurance plays a substantial role in financing health services, while Mali is the only one where nongovernmental organizations and external aid play an important role.

I. THE ORIGINS OF RECURRENT COST PROBLEMS

On the one hand, it seems that the recurrent cost problems of all three countries have their origin more in the economic difficulties which the countries have been facing than in recent excessive development of capital plant without regard for

the resultant recurrent costs. But, this is only making the obvious point that almost any level of growing recurrent costs could be painlessly absorbed if the rate of economic growth was sufficient and the tax and contribution systems were capable of capturing at least a proportionate share of this growth. On the other hand, both Mali and Jamaica have built a costly infrastructure of services, particularly hospital services in the case of Jamaica, which they later found they were unable to support with adequate operating expenses.

Both Jamaica and Mali have been suffering considerable periods of declining living standards. The data for Mali is poorly developed, but the World Bank estimates that after an increase in gross domestic product per head in US dollars of about one-third between 1977 and 1980, there was a fall by 1984 to a slightly lower level than 1977 by the years 1984 and 1985. Decline in Jamaica started much earlier (in 1974) and was particularly associated with the worldwide decline in the demand for bauxite and in communal violence which damaged the tourist industry. By 1985, living standards measured in US dollars were about one-quarter lower than in 1974. Despite these adverse economic trends, public expenditure was allowed to grow from 18% of gross domestic product to over 25% in 1985. Nevertheless, unemployment grew to 25% of the working population and then fell slightly. On top of all this, interest and amortization due on foreign debt rose to 81% of the value of goods and services exported. Governments in Jamaica have been slow in responding to these economic problems facing the country.

Costa Rica also faces a formidable debt problem. If there had not been rescheduling, debt service payments would have amounted to 60% of exports in 1985. But, unlike Jamaica, it has been experiencing some periods of relatively rapid economic growth over the past decade, before 1980 and, again, after 1984. This is because it has a growing sector of nontraditional exports. Jamaica's declining living standards and high level of unemployment would have been worse if there had not been a large revival and expansion of earnings from tourists. The critical recurrent cost problem for the health sector faced Costa Rica in the period 1980 to 1982 when economic growth fell by 10%. The Social Security Fund was faced with acute crises which led to borrowing for the health services from the pension fund. The finances were put back in balance by generating greater compliance by employers with contribution liabilities, instituting tighter control on costs and postponing capital expenditure. Since then, the debt to the pension fund has been repaid and the Fund has been able to continue to expand its services and continue the programme of hospital extension and replacement. The recurrent cost crisis, which threatened the Ministry of Health in 1987, was due to the political decision to divert considerable revenue from earmarked taxes away from the Ministry to housing. The crisis was resolved by introducing further taxes, against strong opposition in Parliament, and help from the Social Security Fund. Thus, it can be said that in 1988 Costa Rica did not have a problem of recurrent costs and could continue to plan improvements in services.

It should be added that the possibility of increasing taxes depends on the extent of development of the tax administration. This is particularly well developed in Costa Rica. It also depends on economic priorities. A country which has in the past achieved a satisfactory rate of growth, despite high taxation, will be less hesitant to increase it. Jamaica, on the other hand, is struggling to restore economic growth and, thus, is hesitant, particularly during a period of structural adjustment, to improve further payroll taxes which might damage economic

recovery. Finally, there is the importance of political tradition. Costa Rica has long prided itself on the priority it has given for many years to the social sector and is now struggling to improve housing while still maintaining and improving its well-developed health services which have contributed to its success in achieving such good health indicators. Jamaica, also, has good health indicators, if not so good as those of Costa Rica, despite a considerably lower average level of living and a relatively low proportion of gross domestic product devoted to the health services. Health, as such, is not so high a political priority but the search for more acceptable and efficient public health services is given considerable political importance.

1.1 Methodology

The attempt to collect a common set of data for these countries proved to be a success. It involved a massive exercise to assemble it, almost anew in Mali, while in the other countries most of the information was available but had to be put in a common form. The substudies undertaken by researchers within the countries produced results which were considered useful by those responsible for the health services. There are plans to update regularly the index of health service prices in Jamaica, and Costa Rica is developing an extensive system of unit costing.

The study showed that the question of recurrent costs could not be isolated from a wide range of issues connected to it. It was necessary to probe in depth questions of procurement, of the efficiency with which current resources were used and questions concerned with management.

For these particular countries the R coefficient (the ratio of recurrent costs to capital costs) has not been particularly helpful in analysing their situation, as there has been no new construction in either Jamaica or Mali for several years: the problem in both countries is to restore, into good working order, what had been constructed in earlier periods. In Costa Rica, hospitals are being built to replace old buildings not to add to the number of available beds. The R coefficient has not been calculated for Mali but it was estimated as 25% for Jamaica in a careful study undertaken in 1980. In the case of Costa Rica, recurrent costs are always calculated before it is decided to construct or extend any health unit. And both capital and recurrent costs are built into the rolling five-year plans. The coefficient for 15 clinics varied from 34% to 61%. And the additional recurrent costs when three hospitals were rebuilt were only between 2% and 3% of the capital expenditures.

2. SYMPTOMS OF RECURRENT COST PROBLEMS

It is clear from the symptoms, that Mali's problem of recurrent costs is much deeper than that of Jamaica, formidable though that is in a number of ways. The rank order of priorities generally adopted by governments unable to finance all

necessary recurrent costs, were set out in Chapter 1 from a review of the literature. It appears from Chapters 2 and 3, that both Jamaica and Mali are following well-trodden paths. First to be neglected, or rather postponed indefinitely, is the maintenance of buildings. The postponement has now gone on so long in Jamaica that a major international loan is being negotiated to undertake restoration. The draft application has been overtaken by the further damaging effects of Hurricane Gilbert in October 1988, which destroyed three hospitals and did major damage to the others. In the case of Mali, upgrading the buildings was listed as a major requirement for improving the quantity and quality of services. Next to be cut out of the budget is the repair and replacement of equipment: in a developing country this normally requires foreign currency. Only a quarter of Jamaican C type hospitals had X-rays in working order. Equipment is in a very poor state in Mali.

Next comes the practice of late payment of bills. This was adopted in Jamaica in 1983 and 1984 and has been such a chronic problem in Mali, in the case of pharmaceuticals, that expected late payment is built into the prices charged for new purchases by suppliers. Then comes the problem of undersupply of drugs. The 23% decline in visits to outpatient departments between 1984 and 1985 in Jamaica, may be partly due to uncertainty of drug supply. In Mali, the striking differences in visit rates between provinces strongly suggest, as pointed out in Chapter 2, that drug availability, as well as prices, has a substantial effect on the use made of services. Finally, comes the question of staff. In both countries, staff are generally retained even when there is little work for them to do, as in Mali. They are, however, not always replaced when they leave. The large number of unfilled vacancies in Jamaica, is partly due to this and partly due to problems of recruitment. On the other hand, Jamaica did, finally, make staff reductions of 600 in 1984-1985, but only in the lower grades. Associated with this, is the practice of allowing salaries to fall behind inflation. The problem has become so serious in Mali that an increase of 50% is recommended, plus bonuses. In Jamaica, this is one of the reasons for privatization. Mali has the further problem of lack of transport, either for referral of patients or for supervisory staff. This is critical in a country with poor roads and little public transport.

3. REMEDIES BY CHANGING THE FINANCING OF HEALTH CARE

Do the studies of these three countries contain any lessons of wider application to the international debate on the financing of health care? As is shown in the chapters on Mali and Jamaica, the most common solution recommended for a country with underfinancing problems is to introduce, or greatly increase, user charges up to the full cost of services and, at the same time, enable people to take out insurance so as to prepay for health care regularly while they are well, rather than have to risk suddenly finding large sums when they are ill. It is generally accepted that the poor should be exempt from charges and the near-poor should pay charges, but at a reduced rate.

In many ways the Costa Rica pattern of financing conforms to these principles, but goes somewhat further in the scope of health insurance than some would recommend. The Costa Rica pattern of financing is an important model to

examine closely, not only because it has averted endemic problems of financing recurrent costs, but also because its preventive services are particularly well developed, widely spread and broad (in terms of extensive provision for both pre-school and school nutrition). Moreover, Costa Rica has achieved an infant mortality rate and an expectation of life at birth which are remarkable for the level of living.

Taxes finance most preventive services and the costs of curative services are fully recovered in three ways. First, employed persons and their employers pay contributions. Compulsory health insurance has also been extended to a considerable proportion of the self-employed (123 000 such persons) by allowing them to pay contributions for the same benefits at rates below the combined employer/employee contributions. Indeed, the lower earning self-employed are allowed to pay rates below that of the standard employee contribution. Pensions are also covered, whether they have contributed in the past or not. Costa Rica goes further than the World Bank would recommend by providing all curative services free of charge to insured persons and their dependants, rather than simply reimbursing major medical expenses. The fear that services free at time of use are bound to be abused is not borne out by Costa Rica's experience. The consultation rate in the clinics is less than three per person covered per year, including dental consultations. The rate of specialist visits within this total (0.8 per person per year) might be considered excessive but all specialist visits are on referral. Thus, it is abuse by generalist doctors rather than by patients. It is hoped that this rate will come down under the proposed capitation system of payment for these doctors because of the continuity of general practitioner care.

The second system of financing, is user charges paid by the remaining population (other than the poor). They pay, according to their income group, charges of 25%, 50% or 100% of full average costs, including depreciation. Finally, the poor are required to apply for certificates which entitle them to free care. In theory, the Ministry of Health pays for the poor but the payments it makes to the fund are far below the costs of the services they actually use. Moreover, the Ministry is often late in paying. Hidden behind this system of financing is a considerable amount of cross-subsidization. Those in regular employment cross-subsidize the lower earning self-employed, the pensioners and indigent.

Even in such a well-ordered society as Costa Rica, the system of offering certificates to the poor works imperfectly. Only 125 000 certificates were valid in 1986. It is unlikely that this includes all the poor, with a measured rate of unemployment of 5.5%, the needs of the disabled and of one-parent families. The process of applying for certificates is stigmatizing and some of the poor would rather pay or postpone care and turn up as an emergency at one of the hospitals.

Is this approach practicable in Mali? The conclusion of the study is that it is not. What about the proposals for health insurance in Mali? The study points out that only the higher-income groups could constitute a market for private for profit health insurance. In the case of voluntary mutual insurance, the prospective market would consist only of certain professional groups and senior civil servants or executives. In the case of compulsory health insurance for the regularly employed, the study points out that the potential coverage with full enforcement, including dependants, is only half a million out of a total population of over seven million. The problem is that, in a poor country such as Mali, the regularly employed constitute such a low proportion of the working population.

The study also draws attention to the fact that a poorly managed social security scheme, with a low membership, can end up having high administrative costs — about half the contribution income is absorbed in this way. Moreover, such a scheme requires good administration and good cooperation from employers to work well and work fairly. One underlying weakness of the Social Security scheme in Mali is that employers are not required to give a list of employees which is regularly updated, so that members can be given cards rather than have to go through the daunting bureaucratic process of applying which is also expensive for the administration. The study does not make clear whether this was because it was thought impossible to secure employer cooperation. A second managerial weakness, is the failure to control entry to covered persons at such health clinics as were provided. The actual working of the social security scheme in Mali brings major discredit to this whole approach to financing. The question which is raised is whether managerial and administrative skills are so rare and poorly developed in a country as underdeveloped as Mali, that it is simply not possible to establish such a complex organization as an efficient health insurance scheme.

And what about the possibility of high user charges? In this very poor country, the use of services has been shown to be sensitive to price at least in the short run. In Mali, income per head per year is about 60 000 francs CFA, or about 5000 francs CFA per head per month. The existing charge is already 1500 francs CFA per day at a national hospital, or 15 000 francs CFA for a 10-day stay — three times the average monthly income per head and this excludes drugs, which have to be paid for in addition. It would create great hardship to double the charges and even if this were done, and the rate of free care reduced from about 40% to 15%, the revenue collected would only be about 1.2 million francs CFA compared to the recurrent cost of organized services of 7 billion francs CFA. In the model shown in Table 21 of Chapter 2, users of the health services would only be paying charges of about 250 billion francs CFA towards the total costs of effective organized services of 3 billion francs CFA. This is only partly because the rate of free care has been kept at 40% of the population. The message from Mali is that very poor countries would have a very low use of services if charges were raised substantially. Moreover, it is by no means clear that preventive services would be widely used if they were available free of charge at health centres which were visited very infrequently.

Is this model of financing practicable for Jamaica, with its much higher average level of living and its better developed administrative and managerial skills? How far could Jamaica go towards the model described above for Costa Rica? The existing voluntary health insurance has the disadvantages of limited coverage (310 000 persons), cash-limited benefits, the exclusion of persons at high risk and waiting periods for pre-existing conditions. On top of this, the scheme is costly because of the widespread use of nongeneric drugs, the failure to agree fee levels with specialists and the fee-for-service payment system. There is no doubt that a compulsory scheme could be devised to cover all those in regular employment and their dependants, and to do so at substantially lower cost. Moreover, the premium could be a percentage of earnings and, thus, not too heavy a burden on the low paid. If the fee for service payment system were avoided, it would be possible to offer full cover without charges at time of use as in Costa Rica. Access to a private doctor, without any copayment, would be a great attraction for insured persons. However, at present the Government has decided that a further payroll tax would not be acceptable.

While such a scheme might be able to cover half of the population (compulsory for employers, voluntary for the self-employed), the remaining half would consist of three groups. First, there would be the self-employed who had not insured themselves and their dependants. Probably a considerable majority of these 300 000 persons would not do so. Then, there are the unemployed (about 200 000) persons and their dependants. Finally, there are the retired, the disabled and one-parent families with the head unable to work because of responsibilities for young children. The proposal by the government committee appointed to consider the possibilities (the Ogle Committee,) was that these groups should be charged full costs for health services and exemptions given to the poor and subsidies to the near-poor. It was accepted that the poor amounted to nearly half the population and the near-poor to a further 30% of the population.

In Chapter 4, the viability of this solution is questioned. The situation in Jamaica is very different from that of Costa Rica. The unemployed are over 22% of the population in Jamaica and only 5.5% in Costa Rica and poverty is a much larger problem in Jamaica than in Costa Rica. The latter country issues 125 000 certificates of indigency. It is calculated that Jamaica would have to issue them for over three-quarters of the population to cover the near-poor. The cost of this has not yet been calculated but it would be substantial. But two other key facts from the experience of Costa Rica are important for Jamaica. First, while the certified poor are 5% of the population, they consume about one-third of all the health services provided by the Social Security Fund. Secondly, only 1.25% of the income of the Fund comes from collecting charges of 25%, 50% or 100% of the costs from the noninsured who are not poor. Costa Rica adopts a policy of treating first and seeking payment afterwards. The accumulation of bad debts is considerable. If the poor in Jamaica are disproportionately high users of health services and the amount of money which can actually be collected from the noninsured by full-cost charging is low, this would seriously affect the viability of the approach. Moreover, the risks for the private managements which the Government wants to find to take over the public hospitals would be daunting.

The alternative suggested for consideration in the study, is to retain health centres for the noninsured with a charge per prescription item. A substantial charge would be levied on the noninsured going to the hospital without being either referred or a genuine emergency: those who could not pay would be referred to a health centre nearby. In the case of inpatients, the policy would be to treat first and seek to recover costs on a means tested basis later. But, again, it would be very hard for private management or government to estimate in advance how much money could actually be recovered from charges.

4. REMEDIES FROM GREATER EFFICIENCY OF RESOURCE USE

Three themes emerge from the studies. The first is decentralization. The second is local retention of the revenue from charges. The third is more efficient purchasing.

4.1 Decentralization

The Mali study laid great emphasis on the decentralization of control of local services to the management board of the health centre. The purpose was to secure local involvement in the running of the health services and to be able to monitor the quantity and quality of performance and reward staff whose productivity was high by bonuses. Decentralization was also proposed for the Social Security Fund in Costa Rica down to regional level, so that each region would be responsible for paying its staff and would be charged for the supplies it ordered, subject to limits on expensive equipment. Moreover, if at some stage the Fund's services and those of the Ministry of Health were brought together, there would be considerable savings in supervisory staff at regional level. Moreover, the integration of curative and preventive services should be more effective.

In Jamaica, the Government aims to secure decentralization in a different way by making each public hospital independent and under separate private management. Each management would have to cover its costs with the revenue from full-cost charging and the payments made by the Ministry of Health for the poor. It remains to be seen whether suitable managements can be found which are prepared to assume the risks indicated above. Three different models of management are envisaged.

4.2 Retention of revenue from user charges

The local collection and retention of income from charges is a key element in arrangements for decentralization. It would be interesting to see if there were fewer bad debts if this system were used in Costa Rica. In the case of Jamaica, local managements get returned to them half of their revenue from charges, after some delay, and this has already led to an increase in the amount collected. If the Government goes ahead with the attempt at full-cost charging, local managements will be under strong pressure to maximize what they collect. In the Mali study, the local collection and retention of charges was again heavily stressed. If the proposals were implemented, it would be interesting to see how much more was collected and the extent to which the provision of free care declined. This study stressed the importance of keeping in separate hands the tasks of prescribing drugs, on the one hand, and dispensing them and collecting the charges, on the other.

4.3 More efficient purchasing

The Mali study found that purchasing essential drugs by international tender was the way of finding the money needed to put the services back into working order.

Prices at which drugs were bought by the purchasing monopoly could be reduced to between one-half and one-quarter of existing prices, depending on whether only generic drugs were bought. These potential savings were sufficient to increase staff salaries by 50%, with bonuses in addition, to restore the working capital of the drug purchasing monopoly, to retrain staff and to secure that other supplies were sufficient. Costa Rica already uses generics, whenever possible, in the Social Security Fund, and Jamaica has a new law which will impose this on private phamacies.

In the case of Costa Rica, it was suggested that economies could be made by one purchaser of supplies for the Ministry of Health, the Social Security Fund and the Insurance Institute. In the case of Jamaica, economies and improved services had already been achieved by contracting out cleaning and portering services and it was proposed to extend this to catering and laundry services. Independent hospitals would, in the long run, be in a position to buy in whatever way they found would give them the best value for money.

5. CONCLUSIONS

Although the countries selected for the study were diverse, one very poor and two much better off, and although there were major differences in the financing of health services, common themes were identified and there was definite value in comparing experience. In some ways, but not others, Jamaica is contemplating moving to a pattern of financing which Costa Rica has already established. The problems of doing so in Jamaica would be much more difficult, given its high level of unemployment and high proportion of poor persons. Compulsory health insurance for the regularly employed, plus high cost recovery from the uninsured who are not poor, has been shown not to be viable for Mali. This may be the case in other countries with a similar low standard of living.

Compulsory health insurance can only make a substantial contribution to the financing of health care when there is a sizeable proportion of the population in regular employment, particularly with larger employers, as it is these persons who can be most readily covered by such a scheme. Moreover, the collection of contributions is most economic when they need also to be collected for some other purpose, such as a provident fund or scheme for industrial injuries. The smaller the coverage of a scheme and the narrower the range of benefits, the higher the proportion of income devoted to administrative costs is likely to be. It is generally the case that poorer countries have the lowest proportion of the population in regular employment. This proportion should be the first data to be assembled in a country considering the possibility of compulsory health insurance.

In the case of user charges, it should be remembered that pharmaceutical costs are a considerable proportion of health service costs, even when they are generic and bought by international tender. And the prices of them do not vary according to the level of living of the country concerned. Thus, it is inevitable, in this respect, that full-cost recovery will prove more difficult the poorer the country.

In addition, it should be recalled that subsistence farmers are likely to have a low proportion of their income in cash and the lower the incomes are, the higher the proportion needed for daily basic living expenses.

The countries themselves found it useful to have outsiders examine with them possible options for improving efficiency and additional financing. At the concluding meeting, held in Geneva in December 1988, all the senior decision-makers who attended concluded that they had found the study helpful. This was particularly the case with Mali. The representatives of Jamaica and Costa Rica said that they had found the comparisons helpful. In the case of further work, it was particularly stressed that this type of study should be extended to further countries in sub-Saharan Africa that had comparable problems to those faced by Mali.

Thus, the study achieved its two objectives. In each case, the nature, extent and consequences of prospective recurrent budget shortages were identified. In each case, the feasibility and maintainability of alternative financing and resource allocation strategies were assessed.

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