HEALTH SECTOR FINANCIAL ANALYSIS: A SURVEY

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Abstract

'Health for All' will not be achieved by the year 2000 unless additional resources are recruited for health sectors of developing countries. The unmet needs for basic health care cannot be satisfied through better use of the existing health resources alone. The most promising domestic sources of additional health resources are the user fees, and uncommitted community resources. Uncommitted community resources are incomes of communities which are not committed to the provision of basic needs, or to investments that are necessary to sustain existing standards of living.

Foreign exchange is a vital input in the provision of health services in developing countries. Mobilization of domestic resources for health sectors without increasing their   foreign exchange inputs could lead to a fall in the quality of health services due for example to shortages in drugs. Ways of increasing supply of foreign exchange to health sectors of developing countries should be explored.

Since Ministries of Health must make decisions regarding how much of various quantities of health services to provide before they actually receive their budgets, it is important for them to have a method of forecasting their budgets to avoid planning health activities that are not feasible. The paper contains a revenue prediction model that should be useful in planning and allocating budgets of the Ministries of Health.

Two types of costs should be considered in 'designing health care delivery systems - costs of providing health services, and patients' costs of using the services. The appropriate or cost-effective health care system is the system that minimizes the sum of these costs. It is argued in the paper that compared to alternative systems, a community based health care system in which the Government and the community share recurrent costs of health services is the most cost-effective system. Cost-sharing arrangements in such a system would include service fees, labour time contributions, prepayments for health services and community managed drug funds.

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1.0   INTRODUCTION

The goal of good 'health for all' by the year
2000, or at some other urgent date will not be achieved
without a substantial increase of resources to the health
sectors of the Less Developed Countries (LDCs) . Additional
resources are required in these sectors to increase the
supply of preventive and curative health services, especially
in the rural areas, where in many LDCs, less than 30 per
cent of the population is covered with modern health services.
Since the Alma Ata Conference of 1978, in which the concept
of Primary Health Care was given international recognition,
there has been much activity in the planning of rural
health services. However, this planning has largely been
one-sided. It has focused mainly on the administrative and
technological aspects of health services delivery, e.g.
on optimal sizes of Rural Health Units through which govern-
ment health services are provided to rural communities; and
on substitution of medical professionals with community
health workers in the provision of preventive and basic
curative services.

Financial planning - the planning of sources of
funds, and how they might best be utilized, has not received
much attention from Ministries of Health in attempts to
provide Primary Health Care. In order to ensure continuity
of health services, and to achieve optimal utilization of
the available facilities, health services managers need to
have adequate sources of funds, and to know the health
activity areas in which additional funds can be used most
productively.

This paper explores alternative ways of raising
funds for health sectors in the developing countries with
reference to specific country experiences; identifies areas
in the health sector which require priority in the allocation
of financial budget; sketches a framework for financial planning in
the health sector; and discusses costs of alternative systems
of health care delivery in selected LDCs. A summary of
findings concludes the paper.

2.0   SOURCES OF FUNDS FOR FINANCING HEALTH SERVICES

There are four basic sources of funds for health
sectors in LDCs, namely, general taxation; foreign aid
and grants; user fees and uncommitted community resources.
In the majority of LDCs, government health services are
financed with revenue from general taxation, with foreign
exchange component of these services being financed mainly
by foreign aid and grants. This mode of health services
financing enables most LDC Governments to provide modern
health care coverage to about 25-30% of the population.
To expand this coverage, additional resources must be
recruited for the government health care sector[*]. One
way to obtain additional resources is by raising the level
of general taxation and/or by negotiating for additional
foreign-aid, loans or grants. This alternative is unlikely
to work for two reasons. Firstly, many LDCs have very small
taxable capacities, from which additional tax revenue cannotbe
generated without adversely affecting work incentives. For
example, in Kenya, the wage earners from whom additional
revenue can be raised, number approximately 1 million or
about 5% of the total population. The taxable capacity
can of course be increased by including non-wage earners
(mainly self-employed operators) into the tax net, but the

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[*] The basic assumption here is that an expansion in health
care services will lead to an improvement in health status.

cost of tax collection would likely be prohibitive.
Secondly, due to heavy international indebtedness of vir-
tually all LDCs, and because of their weak export performance,
the LDCs are ᵁⁿlikely to negotiate successfully for additional
foreign exchange from international financial institutions.
The LDCs' ability to raise substantial foreign exchange
resources for their health sectors, on the basis of strengths
of their economies, is extremely limited (see e.g., Lancaster
and Williamson, 1986).

        In light of the above, it appears that the hope
for additional resources for the public health sectors in
LDCs lies in user charges, and in the uncommitted resources
of communities. These two potential methods of recruiting
funds for health sectors in LDCs are explored in the en-
suing sections.

2.1: User Charges

        User fees or charges, as a means of raising
additional revenue for public health sectors, are accepted in
principle in many LDCs, but their implementation has, in
general, proved to be very difficult. For example, Kenya's
Ministry of Health Development Plan, 1984-1988; and the
overall Kenya's Development Plan, 1984-1988, state that
".... A fee will be charged to patients in amenity wards,
commensurate with the services rendered. --- Selective
charges for hospital out-patient and in-patient medical services
--- will be introduced during the plan period." (Stevens 1984
pp. - 50-51). Inspite of the above statements, selective
user fees are far from being implemented in Kenya. The major
problem in their implementation appears to be a strong
political commitment by Government to provide free medical
services.

However, careful economic analysis suggests that
a political commitment for free medical care for all,
may not be conducive to health services efficiency, and
contrary to intuitive observations, it may also not be
equitable. Carl Stevens (1984, pp. 4-5) in his report on
"Alternatives for Financing Health Services in Kenya",
points out that introduction of user charges in government
health facilities would help raise the quality of the ser-
vices provided by those facilities. This is because the
fees would both enable the health facility managers to
procure the necessary inputs for the provision of quality
health care, and also act as an incentive for the facility
managers to provide quality health care that consumers
(patients) would be willing to pay for.

Philip Musgrove (1986, p. 333) argues that user
fees would be useful in reducing unnecessary or frivolous
demand for medical services, thus making it possible to
save more lives without an increase in the supply of the
available medical services. The user charges might also
promote equity because, if they are charged selectively,
say, to the urban population that is close to quality
hospital care, they would raise cost of hospital care, making
it approach the cost for the rural residents who must pay
significant transport and time costs to obtain free treat-
ment in urban based hospitals. Thus, to borrow Philip
Musgrove's phrase, user fees would tend to create a situation
of "equal probability of receiving care when it is needed"
for   rural and urban populations. It has also been
demonstrated (Mwabu, et.al., 1986)   that imposition of
user fees in rural public clinics can be redistributive in
favour of low income households. This possibility however
depends critically on two assumptions. The first assump-
tion is that the revenue from user fees be used to improve

quality of the services provided by the public clinics -
largely by supplying them with enough drugs. The second
assumption is that the imposed user fee be affordable by
the majority of the rural population. Under these assumptions,
low income households would benefit more than the high
income households from the improved services of say, rural
dispensaries, because they would use these services pro-
portionately more than high income households. The reason
for this is that before services of rural dispensaries are
improved, the rich households are able to get medical care
from alternative sources e.g. district hospitals. Thus,
the high income households would not need the improved
dispensary services as much as the low income households,
and hence, their demand for these services would be lower than
that for low income households.

Even though LDC Governments are reluctant to
impose user fees in public clinics, there is a good number
of examples in LDCs where user charges on publicly provided
medical services have worked quite well.

Bekele and Lewis (1986, pp. 116-119) point out
that user charges for government medical services in the
Sudan have not only managed to provide more revenue with
which additional services can be supplied, but have also
improved the quality of, and demand for publicly provided
medical services. The major innovation in the fee for-
service scheme in the Sudan are the evening government
clinics which charge for their services. The evening
clinics are simply the regular government clinics in the
urban areas which are converted into paying clinics
during the evening hours. Between 8.30A.M. and 2.00 P.M.,

these clinics provide free medical care, but between 6.00
p.m. and 9.00 p.m., they charge for their services.

The general principle that appears to emerge
from the evening clinic experiment in the Sudan is that if
user fees in public clinics are imposed according to
scales which differ by time of the day, it might be
possible to simultaneously promote objectives of equity
and efficiency in the provision of medical services. It
should be noted that Bekele and Lewis also found that
selective imposition of user charges for hospital services
in the Sudan was conducive to better quality care; it
discouraged frivolous demand for medical services; and in
addition it raised substantial amounts of revenue without
significantly reducing demand for health services. This
result, however, rests on a further finding that hospital
care in the Sudan is price inelastic, i.e., patients'
utilization of hospital services is not very sensitive to
costs that they pay to obtain those services. (Bekele
and Lewis estimate that the money price elasticity of demand
for hospital care in the Sudan is approximately -0.13)

Studies in other countries lend support to the
hypothesis that the user charges on public hospital
services would raise additional revenue for the Government
(the Ministry of Health) without appreciably lowering
utilization levels for those services. A survey of ten
health institutions in Honduras found that a price of US
$ 4-5 per visit to a hospital, did not discourage patients
from using hospital services. However, higher visit
prices led to fewer people using hospital services
(Callen and Rinehart, 1986 pp. 832-833). A similar
pattern was found in Brazil. However, revenues from user

charges did not cover more than 11 per cent of cost of
hospital care. Callen and Rinehart further report that in
Zaire, even when the average cost per visit is the same,
the rate of clinic utilization is different depending on
whether patients are charged a fixed fee for each visit
they make for a given illness, or are charged a single
fee for a given illness irrespective of the number of times
they visit a clinic to cure that illness. Clinics that
offered initially higher fee, but offered free follow-up-care
were utilized more than those that charged lower fees for
each visit.

The general principle that appears to be supported
by this specific Zairean case is that user fees should
be imposed by type of illness, and not by stage of an
illness. That is, patients should be charged only for
first visits, the amount charged generally differing by
type of illness.

A recent study in Kenya (Ikiara and Kimani, 1986)
has shown that the majority of Kenyans are willing to pay
for publicly supplied health services, provided that they
are of sufficient quality. This is evidenced by the fact
that many Kenyans are already paying substantial amounts
of money for medical services in non-government health
sector.

Table 1 below shows percentages of out patients
paying for consultation and drugs in non-government health
facilities in various provinces in Kenya.

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* A recent study in Zaire has shown that in some Zairean health zones, user
fees cover as much as 80 per cent of operating costs (Marty Makinen of
REACH, personal communication).

Table 1:   Percentage of patients interviewed in government
           health facilities, who at one time, had visited
           non-government facilities where they paid con-
           sultation and drug fees.

PROVINCE	Percentage of patients who reported having paid the following fees*			
	Less than KShs. 5	KShs. 5- 100	KShs 101 500	KShs 501 +
Central	0.00	39.87	8.78	4.73
Nyanza	1.22	47.56	3.66	1.22
Western	0.00	57.00	5.00	0.00
Rift Valley	1.39	29.17	11.11	0.00
Eastern	0.00	51.22	4.88	2.44
Nairobi	0.00	20.69	10.35	0.00
Coast	0.00	15.00	15.00	0.00
Average Percentage (Sample size = 291)	0.36	35.76	8.40	1.20

*   1 US Dollar is approximately KShs. 16.00

Source: Derived from Ikiara and Kimani, Table 11, p.99

As can be seen from table 1 the fee paid by the majority of
patients (35%) who sought medical treatment outside the government health
sector, ranged from about US $ 0.30 to $ 6.00. Only a small proportion of
patients paid treatment fees exceeding Kshs.100 (approximately $6.00). This
result suggests that unless fee setting takes into account patients' willingness
to pay for medical services, fees would discourage health facility utilization.
Thus, once a political decision to charge for medical services is made, the
next critical question to answer is: what is the best structure of fees to
charge? This question has recently been examined theoretically by Philip
Musgrove (1986), but research is needed to answer it in a practical manner.

The preceding discussion points to the fact that when properly
instituted, user fees can generate substantial funds to finance expansion of
government health services. However, since it is common knowledge that people
are generally unwilling to pay for preventive health services, funds to finance
these services cannot be generated through user fees.

2.2: Uncommitted Community Resources

Apart from user fees, uncommitted community resources are another
potential source of additional funds for health sectors in LDCs.[1] By
uncommitted community resources we mean the resources available to the house-
holds for discretionary use. That is, resources that are not committed to
meeting basic survival needs of households. The uncommitted community
resources are not merely community's saving, because part of that saving
might be committed to investments that are required to sustain the prevailing
standards of living. The uncommitted resources might consist of money, time, and
and assets such as land, livestock, and farm equipment.

The concept of community financing, as is currently used in the
health services financing literature, is not very helpful in practical
financial health planning because it is not used in relation to uncommitted
community resources. The question that naturally arises to mind now is how
may the size of uncommitted resources in a community be estimated, and what
methods can be used to induce the community to voluntarily release some of
it to the health sector?

One practical way to estimate the amount of a community's
uncommitted resource is to estimate its expenditures on luxury items.
Obviously, what is a luxury item will vary from one community to another,
and observers from outside the community are likely to have great difficul-
ties in identifying it. Nonetheless, in consultation which key informants in
communities, it should be relatively easy to identify luxury items for
specific communities. For example, in a community in Western Kenya, luxury
items/include wrist watches; motor-vehicles; processed foods, certain types
      might
of social festivals; tourism trips outside the community; and so on. Once
these items are identified, a random sample of households from the community
can be selected, and their expenditures on items designated as luxuries can
be determined. The expenditure on these items would then be an approximation
to the size of uncommitted resource in the community. Notice that time
expedniture is a component of expenditure on luxuries, and will have to be
converted into money expenditure. There are problems in doing this (of
placing monetary value on households' time), but encouraging progress has
been made in resolving the methodological and theoretical issues involved (
(see e.g. Wang'ombe (1984)).

Objects of luxurious or discretionary expenditure in a community
can also be detected using formal methods of economic analysis, such as the
regression technique. Demand equations for major goods and services purchased
in the community can be estimated. Goods and services that turn out to .have
demands that are highly elastic with respect to income can then be considered
as luxurious items. In other words, these are items for which purchases
increase proportionately more than proportionate increases in households'
income. In less precise terms, they are items that households would buy only
if their income levels are such that they are already buying goods and
services that are necessary to satisfy basic needs. Once demand equations have
been estimated and luxury items identified, total discretionary expenditure
in a community can be determined for any given level of income. This formal
      determining
method of /   the amount of uncommitted resources in community has the
advantage over the method described earlier because, after estimating
demand equations, one only need to know the community's income to compute
discretionary expenditure. The required data can be obtained from
national household data sets available in planning ministries of many LDCs.
In many instances, there would likely be no need to conduct the usually
very expensive household surveys.

After the amount of uncommitted community resource has been estimated, the next critical step in financial health planning is how this resource can be mobilized for the health sector. More specifically, the issue is how the uncommitted resource can be harnessed in a voluntary manner, to finance certain health care services.

Russell and Reynolds (1986,pp.17-22), discuss the following methods of inducing the community to finance specific health services.

a)   Personal Service Fees. These are fees for the services rendered by health workers. They differ from user charges (or fees) in that they are meant primarily to meet the opportunity cost of time of the person providing the service; however, as in the case of user fees, they can also be used to cover costs of drugs and medicines. The community resources that are mobilized through personal service fees are commonly used to support community health workers. However, this method of resource mobilization has the disadvantage that it generates funds mainly to support community - based curative services, because as was pointed out earlier, people are generally unwilling to pay for preventive health services. It should be stressed that in order for personal fees to succeed in mobilizing the uncommitted community resource for the health sector, they must be levied according to peoples willingness to pay for the health services that the fees are intended to support. But how is willingness to pay to be determined? Briefly, this can be done through . household surveys; details of determination of willingness to pay for medical care is outside the scope of this paper.

b) Drug Sales. This method of extracting uncommitted community resource involves the selling of basic drugs in specific communities. The drugs are stored in community pharmacies, or in general retail shops. The initial stock of drugs can be established through a grant to the community, with arrangements to establish the grant as a revolving drug fund. That is, the proceeds from the sale of drugs would always be used to purchase new stocks of drugs. The revolving drug fund should particularly be attractive to the community if . prices of the basic drugs that are made available by the fund are set below those of similar drugs in private pharmacies by subsidizing prices of drugs in community pharmacies using public funds.[2] The public subsidy to community drug stores would be a device for inducing the community to spend part of its uncommitted resource to finance the cost of drugs that are needed for Primary Health Care. In other words, the subsidy is an institutional arrangement between the community and the Government for sharing the cost of

drugs in primary health care. Black marketing of drugs is a potential
problem in a revolving drug fund scheme. The major advantage of this scheme
is that profits from drug sales can be used to support both curative and
preventive health activities.

c) Personal and Production - Based Prepayments. These health-care
financing arrangements involve paying for health services before an illness
occurs. Health services prepayments are forms of insurance schemes.
Personal prepayment and production-based prepayment differ from one another
in the following way: In personal prepayment schemes, households or
individuals contribute directly (in cash or in kind) to an insurance scheme.
In production-based prepayment programs, households or individuals contribute
to the insurance scheme through levies on the output they sell.

The prepaid health services are equally available to all members
of the scheme irrespective of differences in their illnesses, health status
or ability to pay. Thus, in health insurance schemes, the healthy individuals
subsidize the sick, because the health services they pay for are used by
those who are sick. Prepaid health services schemes are reported to have
functioned successfully in Indonesia and China. In Kenya, there appears to
be great potential of financing health services through production-based
prepayment schemes because the majority of small scale farmers are members
of cooperatives. But, unless some nominal fees are imposed at the time of
use, prepaid health services are likely to face problems of over-utilization.

d) Community and Individual Labor. This is labor that the community or
individuals volunteer for health activities. Community or communal labor
might be volunteered to construct dispensaries; to build latrines; to improve
environmental sanitation; and so on. Individual labor might for example be
volunteered for immunization camapigns, health education, and distribution
of family planning materials. Although voluntary labor can be used to lower
both the recurrent and development expenditures of primary health care, it
is known to be difficult to sustain for a long time. However, an experiment
on Community-based health care scheme at Kibwezi in Kenya (operated by African
Medical and Research Foundation, Nairobi), has shown that when properly
recruited and trained, unpaid community health workers can be retained on
health activities for a long time (see SIDA/MOH/AMREF (Kenya), 1985).

e) Community Contributions. These may take a variety of forms e.g. cash, materials, land, and livestock. In some communities, a substantial amount of resources can be mobilized through fund raising. In Kenya for instance, many dispensaries have been built with self-help ("Harambee") contributions (see e.g., Mbithi and Rasmusson, 1977). Community contributions are commonly used to finance one-time expenditures such as the construction of health facilities.

The extent to which the above methods will succeed in mobilizing community resources to finance health services depends on four key factors, namely;

1)   Community's understanding of reasons why it should contribute
      to finance health services which were previously provided free
      of charge;

2)   type of health services to be financed;

3)   level of training of those involved in the management of
      mobilized resources - in skills such as book-keeping, budgeting,
      inventory planning etc.; and

4)   type of supervision and support that is provided to community
      health care financing schemes by the Ministry of Health.

The fourth point above is extremely important because, a community will often need outside assistance for its health care financing system in such matters as budgeting, financial control, and planning. This sort of assistance can be provided by officials of the Ministry of Health through short-term training courses for those involved in the management of community health care financing schemes such as the revolving drug fund.

2.3: Summary

This section summarizes and comments on basic issues related to user fees and uncommitted community resources as sources of additional funds for health sectors in LDCs.

Selective user charges on health services, i.e. charges that are imposed only in some health facilities; or in certain period of the day; in specific geographic regions or for certain health disorders, are a potential source of additional funds for the health sectors. However, people's willingness to pay user fees depends critically on whether they consider the services on which fees are imposed to be of sufficient quality. Health service quality has three major dimensions. The first is the patients' subjective perceptions, or attitudes, of what quality health care is. The second dimension of health service quality is made up of the quality of the medical inputs (as judged by health professionals), that are used to provide a particular health service. It should be noted here that consumers (patients), may not agree with the health professionals' rating of the quality of a particular health service. The third major dimension of quality of service consists of the behaviour and attitudes of health workers toward patients.

All the aspects of health service quality, mentioned above affect people's willingness to pay for health services, and hence the amount of revenue that can be raised through user fees. Thus, the issue of health service quality (objective and subjective), should be given careful attention in the design and implementation of user fee schemes.

User charges would succeed in raising revenue mainly for curative services. Funds to finance preventive and promotive health care would have to be raised through compulsory methods such as taxation.

Uncommitted community resource is a useful concept in evaluating a community's potential to participate in the financing of health services. Uncommitted community resource can be approximated by expenditures on luxuries. Ways of harnessing some of this resource for the health sector include, service fees; drug sales; prepayments for medical care; community labor; and community contributions.

In concluding this section a point of fundamental importance regarding the relationship between mobilization of domestic resources for the health sector, and the quality of health services should be mentioned. If foreign exchange is a binding constraint in the provision of health services, then mobilization of additional domestic resources for the health sector could lead to a fall in the quality of the health services provided.

This is because as more health facilities are built, e.g., through communal labor, the complementary inputs, such as drugs (that must be procured with foreign exchange), may not be available in sufficient quantities (see David Dunlop and Mead Over Jr.,1985). This suggests a need to compute a desired ratio of domestic health care inputs to foreign inputs. This ratio would be useful in indicating when a given country is mobilizing too many domestic health care resources relative to the available foreign exchange inputs. The ratio would also be helpful to foreign donors interested in assisting LDCs that are most severely constrained by foreign exchange shortages in their primary health care programmes. Thus, if additional domestic resources for the health sector are to have their intended impact of improving health status, they should not be mobilized or planned in isolation from the complementary foreign inputs that are also required in the provision of primary health care.
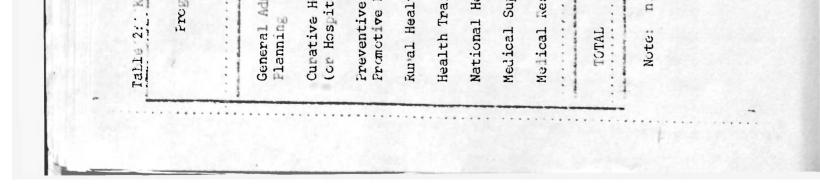
3.0: ALLOCATION OF HEALTH BUDGET

Kenyan data (on pattern of allocation of health budget) shows that hospital based curative services receive the lion's share of the Ministry of Health Budget. Promotive and preventive health activities receive approximately 5-6 per cent of health budget, while curative services get about 68 per cent. Carl Stevens (1984,p.29), points out that Kenya's pattern of allocation of health budget is typical of many other Less Developed Countries.

Table 2 below shows the Kenya Ministry of Health (MOH) Recurrent Budget by major health activities for the period 1978/79-1982/83.

Table 2: Kenya MOH Recurrent Budget by Major Programs 1978/79 - 1982/83

Programs	Per cent of Total Gross Recurrent Expenditure				
	Actual 1978/79	Actual 1979/80	Actual 1980/81	Actual 1981/82	Approved est. 1982/83
General Administration and Planning	5.2	5.6	5.5	6.0	6.6
Curative Health (or Hospital Services)	68.7	66.7	68.4	72.3	69.0
Preventive Health and Promotive Health	4.8	6.0	6.6	4.6	5.2
Rural Health Services	7.8	9.2	9.2	3.2	11.1
Health Training	8.5	6.1	6.0	6.0	6.9
National Health Insurance	0.4	0.5	0.3	0.2	0.5
Medical Supplies	3.5	4.6	2.4	2.7	0.7
Medical Research	1.2	1.4	1.8	n.a.	n.a.
TOTAL	100.0	100.0	100.2	100.0	100.5

Note: n.a. (= Not Available

According to available estimates, the pattern of Kenya MOH
budget spending as displayed in table 2 is essentially unchanged for the
period 1983/4 - 1987/88. There are two basic observations from Table 2
regarding Primary Health Care as a strategy for achieving good health
for all Kenyans by the year 2000. The first point is that since ,
hospital services are urban based, the pattern of budget spending
displayed is biased in favour of urban residents, who comprise only
about 15 per cent of the Kenyan population. Since the referral system
between hospitals and rural health facilities does not function as
desired (due to communication and transport problems), the spending
pattern depicted in Table 2 is extremely inequitable; further, it is
unlikely to improve health status of the rural populations by a
significant margin. The second observation from Table 2 is that
preventive and promotive health services are given very low priority in
budget allocations (relative to curative services), even though they are an
important component of the Primary Health Care strategy.

The above observations tempt me to hazard the conclusion that
good health for all Kenyans will not be achieved by the year 2000 (or
even by the year 2050!), unless the pattern of MOH spending reflected
in Table 2 is changed. This is because the majority of the population
(rural and urban alike), will continue to suffer from preventable
diseases because of under-provision of preventive and promotive
health services, and also due to the fact that, basic health services will
continue to be inaccessible to majority of the population. To a large extent,
the foregoing pessimistic conclusion can be generalized to many other LDCs
because as was stated earlier, their health budget allocations are similar
to Kenya's.

The critical question is whether or not the pattern of health
budget allocations shown in table 2 can in fact be altered in any
significant way; and if so how? It is possible to significantly change
health budget allocations shown in table 2 through two routes. The
first avenue of change is the medical preofessionals who should
encourage (or innovate) curative health care technologies that are
suitable for use in rural health centres and dispensaries; or even in

people's homes. The oral rehydration technologies are a significant
step in this direction. The second way of changing the current pattern
of budget allocations (between curative and preventive health services)
is to demonstrate to policy-makers (by research findings), the
benefits of preventive health services. It is now widely accepted that
this manner of informing policy-making would be most fruitful if it is a
result of a collaborative research effort between researchers and policy-
makers.

In concluding this section, the following points should be
noted. First, additional resources to the health sector in Kenya (and in
other LDCs) should be allocated to preventive and rural health
activities. Expenditures on these activities are more likely to
achieve significant improvements in health for all by the year 2000 than
expenditures on urban based curative health services. This is a
familiar point, but which cannot be over-emphasized. The second point is
that budget allocation in health sectors should be rationalized, i.e.
~~That is~~ economic techniques of cost-benefit analysis and cost-effective-
ness analysis should be used as much as possible in deciding the pattern
of health budget allocation that is most beneficial. In the context of
of Primary Health Care Strategy, a budget allocation that is most
beneficial if it maximizes the chances of achieving good health for all
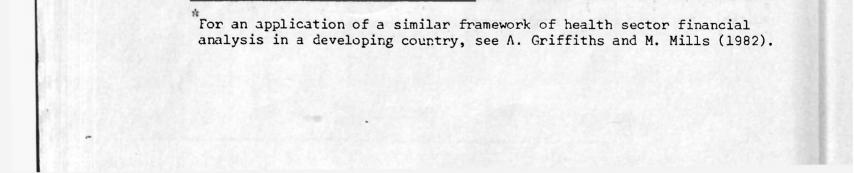by the year 2000.

4.0: A FRAMEWORK FOR PLANNING AND ALLOCATING HEALTH BUDGET*

Having discussed the sources and uses of funds in health
sectors a model that can be used for planning and allocating financial
health resources will now be presented. The model has three components,
namely:-

1)   determination of expected health budget.
2)   allocation of the budget among program activities; and
3)   sensitivity analysis on the pattern of resource allocation.

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* For an application of a similar framework of health sector financial
analysis in a developing country, see A. Griffiths and M. Mills (1982).

4.1:   Expected Budget

Health services, like other economic goods and services, take time to provide. Thus, in order for MOH to provide these goods on time, their production must begin before the MOH actually gets its own funds to pay for these services. (Initially production of these services can be financed by debt incurred by MOH). In order for the MOH to know whether or not it will be able to pay for the services whose production it starts before the receipt of its funds, it must have a way of predicting its revenue. The MOH can predict its budget using the following simple model.

$$R_t = \beta_1(\text{AID}) + \beta_2(\text{FEE}) + \beta_3(\text{UCR}) + \beta_4(\text{TAX}) + \beta_5(\text{OTH})$$

where

R_t = Expected Revenue or Budget in year t

AID = Foreign aid and grants pledged by foreign donors to MOH.

β_1 = Proportion of AID that is paid. This number is obtained by dividing AID paid up during some past period, by AID pledged over the same period. The assumption here is that donors pay only a fraction of the AID they promise; and that their past behaviour will persist into the future.

FEE = Maximum amount of revenue obtainable from user fees based on facility utilization rates and the prevailing user charges.

β_2 = Proportion of fee that is expected to be collected.

UCR = An estimate of uncommitted community resources

β_3 = Proportion of UCR expected to be collected

TAX = Total tax revenue

β_4 = Proportion of TAX expected to be allocated to MOH by the Central Government Planners and by legislators.

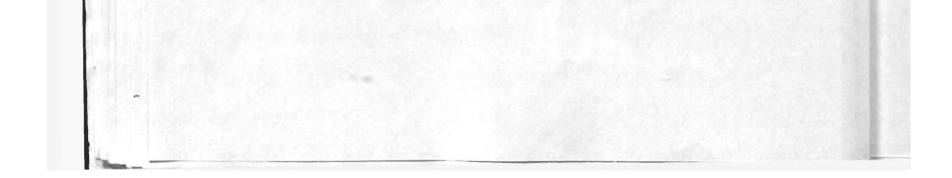OTH = Other types of revenue for MOH, e.g., domestic loans, savings, etc.

β_5 Proportion of OTH that is expected to be available for use by MOH.

The values of parameters, β_2 - β_5, are obtained using past data in a manner similar to that described for β_1. The value of the above model in the planning of financial resources for MOH should be evident. Given values for AID, FEE, etc., and those of the associated parameters, i.e. β_1, β_2, and so on, the health planner can forecast the MOH budget for any year. He can thus, tell the amount of health services the MOH can afford to produce in that year. It is quite easy to use this model since its parameters can be computed with little difficulty, and its variables (e.g., AID, TAX), can be determined with the help of Central Government Planners. Also notice that the revenue model specified above can be generalized by viewing R_t as a function of AID, FEE etc., without specifying the functional form of R_t. The parameters of the function, R_t can then be estimated with formal methods of regression analysis.

4.2:   Budget Allocation

Once the planner has determined the expected health budget for year t, the next task is to allocate the budget among health activities planned for that year. The expenditure required to carry out health activities for year t, cannot exceed the expected budget for that year. In symbols, the health planner allocates his budget according to the following rule.

$$\alpha_1 CA_t + \alpha_2 PA_t + \alpha_3 OA_t \leq R_t,$$

where

CA_t = Curative activities planned for year t

PA_t = Preventive activities for year t

OA_t = Other health related activities in year t.

α_1 = Average expenditure per curative activity

α_2 and α_3 are defined similarly. The values of α_1, α_2 and α_3 are derived from past expenditure data and policy emphases. The activities in the above expression, e.g. CA_t are assumed to be chosen using cost-effectiveness criteria. That is, only cost-effective activities are undertaken. An activity is cost-effective if it represents / the cheapest possible way of achieving a given health objective e.g., reducing infant mortality rate by 30% by year t (see e.g. Shepard and Thompson, 1979). The budget allocation rule specified above ensures sustenability of planned health activities.

4.3: Sensitivity Analysis

Sensitivity analysis involves changing values of parameters that are not known with certainty e.g., α_2 in the budget allocation expression, and then studying the consequence of that change on decision rule. With reference to the budget allocation expression, sensitivity analysis would help answer the following question: Suppose α_2 were to rise by 15%, would the bundle of activities denoted by PA_t still be undertaken?

The model of financial health planning presented in this section is useful in predicting MOH budget; in the allocation of that budget among programme activities; and in determining the sensitivity of composition of chosen health activities to changes in their average costs (especially the recurrent costs).

5.0   COSTS OF ALTERNATIVE HEALTH CARE SYSTEMS

5.1   Alternative Health Care Systems

This section briefly discusses costs of three types of
Government managed health care systems, namely:-

1)   Facility-based health care system. In this system, public
      health services are provided predominantly by health professionals
      through fixed health facilities (hospitals, health centres
      and dispensaries). The health services are provided free of
      charge.

2)   Community-based health care system without cost-sharing
      between the community and the Government. In this system, the
community is involved in the provision of health services, especially
      preventive and promotive health services, through village
      health committees; community health workers; and traditional
      birth attendants. The community works closely with Government
      health professionals in the planning and delivery of health
      services, but does not share with Government the recurrent cost
      of health services.

3)   Community-based health care system with cost-sharing.

5.2:   Costs of Health Care Systems

The basic problem here is to determine the cost-effective health
care system. Cost-effectiveness must of course be defined with reference
to some objective or purpose. If the objective of MOH is to maximize the
proportion of the population that is covered with basic health services,
a health care system is cost-effective if it achieves this objective at
least cost. The claim in this section is that "Community-based health
care system with cost-sharing" is the cost-effective method of
organizing health services delivery in most LDCs. Conceptually, this
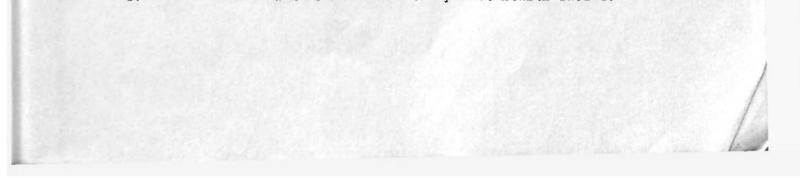can be illustrated by considering two categories of health care costs,

namely, provider and consumer costs. Provider costs are the Government's
costs (development and recurrent) of making health services available
to communities. Consumer costs are the patients' costs of using the
services, such as transport and time costs. The sum of these two
costs, constitutes the total cost of a health care system.

For many LDCs, facility-based health care system is not even a
feasible system, if their aim is to achieve universal coverage of the
population with basic health services. This is because the cost of this
system would exceed the MOH budget. In the case of Kenya, it has been
estimated that universal coverage of the population with health centre
services "would almost double the (MOH) budget for 1984 from K£76.5
million to about K£144 million" (Mwangi and Mwabu, 1986, p.778).
Using, Malaysian and Kenyan data, Peter Heller (1975, 1971) has
demonstrated that the facility-based health care system implies recurrent cost
burdens which are unlikely to be borne by revenue from general taxation
alone. Thus, even for an LDC government which might afford establishing
facility-based care system for the whole population, it is unlikely to
sustain the system because of recurrent cost problems. Heller (1975,
p.69), notes that for Malaysia and Kenya, the recurrent cost burdens are
greater for smaller health center institutions – precisely the facilities
that would be used to achieve universal health services coverage.
Heller's work shows that for every dollar (or shilling) required to
construct and equip a health centre or a dispensary, approximately 23-27
cents are required to operate and maintain it. For hospitals, the
recurrent cost burden is 11-18 cents for each dollar or shilling of
capital expenditure.

"Community-based health care system without cost sharing" is a
feasible system of achieving the goal of 'health for all' as urgently as
possible. This is because universal health services are possible under this
system. Each community, irrespective of its geographic location, is
responsible in some way, for the provision of its health services.
However, this system is likely to be more costly than the system in which
the community and the government share direct recurrent costs of health
services. There are two main reasons for this. Firstly, with cost-
sharing, more revenue would be available to operate health facilities

Thus, additional facilities can be constructed. Additional facilites
will of course require an increase in provider costs (in this case, an
increase in recurrent costs). However, the consumer costs, in terms
of travel costs for example, would also fall. Thus, to the extent that
savings in consumer costs are larger than the increase in provider
costs, the cost-sharing system is more cost-effective than the alternative
/ *system* in which the recurrent costs are not being shared. Secondly,
the additional revenue generated through cost-sharing scheme can be used
to improve the quality of existing services. The improved quality of
service can be converted into money terms, by determining people's
willingness to pay for improved services/can then be compared with the *The benefit attached to improved services*
revenue raised from the community (through user fees, sale of drugs etc).
If this revenue is smaller than benefit of improved services, then cost-
sharing system is the cost-effective system. As argued earlier, cost-
sharing is likely to reduce frivolous demand for medical care, and hence
promote efficiency in the utilization of health facilities.
Thus, considerations of consumer costs, health services quality and
efficiency,   make community-based health care system (with cost-
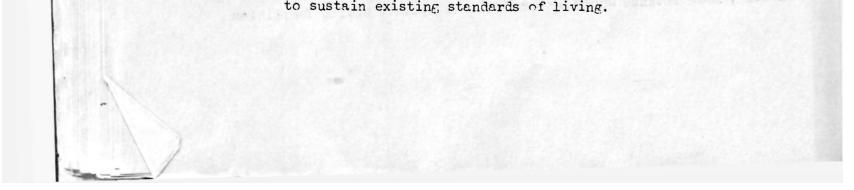sharing), more attractive than the alternative system.

6.0   CONCLUSIONS

This section summarizes the main conclusions of the paper.

a)   To achieve the objective of 'health for all' by the 2000 (or
at some other acceptable time), LDC Governments will require
additional resources in the health sector. The additional
resources will be needed to increase population health
services coverage from the current level of 25-30 per cent in
many LDCs to 100 Per cent. The coverage gap that exists now
is too large to be filled by better utilization of the
available health resources alone. The two most promising
sources of revenue for the health sectors are the user fees and
the uncommitted community resources. Uncommitted community
resource is the income of the community that is not committed to
provision of basic needs, or to investments that are necessary
to sustain existing standards of living.

b)   User fees, if imposed selectively, and at appropriate levels,
appear to be conducive to health services quality and efficiency.
Selective user fees could also promote equity in provision of
health services for two reasons. Firstly, they can be used
to make everyone face the same probability of obtaining
medical care when it is needed. This is because some sections
of the population which are within the proximity of quality
hospital services can be charged for those services, while
leaving them free (at the time of use) to referral patients
from distant or poorly equipped clinics.
Secondly, user fees can be waived for those who cannot afford
them. Recent experiments with user fees in the Sudan suggest that
user fees are an important potential source of revenue for the
health sector. However, the cost of administering the fees
in Sudan was not studied; in some countries this cost can
be quite substantial.

c)   In addition to requiring additional domestic resources, the
health sector also needs some irreducible quantities of foreign
resources in order to provide certain amounts of health services.
Unless foreign resources are available in sufficient quantities,
mobilization of domestic resources for the health sector may not
lead to improvements in health services.
In other words, for each domestic resource mobilized for the
health sector, a certain amount of foreign exchange is required
to make it fully productive. This fact should be taken into
account in the planning of financial resources for Ministries
of Health.

d)   Ministries of Health can use past values of foreign aid and
grants; user fees; tax revenues; and uncommitted community resources to
predict their budgets. The predicted or expected budgets can
then be used as the basis for planning health services. Rational
health services planning is not possible without a sound
planning of financial resources. This is because production of
health services must often begin before the Ministries of Health

actually receive their budgets.   In order for the Ministries
to determine the various quantities of service they should
begin to produce, they must be able to predict their budgets.

Financial health planning thus helps Ministries of Health to
plan provision. of health services that is consistent with
their budgets. Financial   planning avoids situations
where facilities are built but are not operated due to
recurrent cost problems; or cases where construction of health
facilities is started but is not completed because of lack of
funds.

e)   Community-based health care system in which communities
share recurrent cost of health services with the Government, is
the most cost-effective way of achieving good health for all
within the shortest time possible.

<u>NOTES</u>

1.   It is important to distinguish the concept of uncommitted community
resource from the related notion of untapped community resource frequently
encountered in the literature. In economic terms, untapped community resource
is uncommitted resource that is not employed or fully employed, but that
which can be tapped or used for the production of additional goods and
services (including health care), without sacrificing much, or any of the
existing goods and services. In technical terms, the opportunity cost of
re-allocating, or of putting into productive use, the untapped community
resource is virtually zero. In contrast, the uncommitted community resource
is assumed to be fully employed in the production of certain commodities
(goods or services), or to be earmarked for the provision of those commodities.
The commodities at issue here are those that cannot be categorized as basic
needs. They are largely luxurious items, or goods for conspicuous consump-
tion. The uncommitted community resources can be re-allocated, the oppor-
tunity cost of re-allocating them being the luxurious or "non-basic"
commodities that are foregone in the re-allocation. This cost is strictly
positive and non-negligible.   But, the concept of untapped community re-
source does not entail a sacrifice of commodities. It must be stressed that
resources that are already committed to the provision of basic survival
needs should not be re-allocated. For example, the resources of a given
community that are committed to the provision of basic housing cannot be
re-allocated or mobilized to the Primary Health Care sector, without
worsening the welfare of that community. But the portion of the community
resource that is used to purchase say, non-essential housing, could be
mobilized or re-allocated advantageously. For a community that is just
managing to meet the minimum basic survival needs, its uncommitted or un-
tapped productive resource is zero.

        It is also useful to distinguish between uncommitted community
resource and untapped community labour. Untapped community labour is
simply an element, i.e. a subset of the untapped community resource, which,
as has been described above, is a special case of uncommitted resource. As
is explained in the text, the community resource consists of a bundle of
all possible productive resources, including labour, land, machines, natural
endowments etc. Self-help, self-reliance, "Harambee" etc., are other
notions which require clarification in relation to the concept of uncommitted
community resource. The self-help effort of a community that is beyond the
effort of that community to provide for its basic survival needs is not
feasible unless the community is endowed with uncommitted resource. Again,

to use the example of housing, a community that is at the edge of subsistence, would not willingly, and on its own initiative, trade-off some of its basic housing for basic health care services, because, it would suffer a loss in welfare. Such a community cannot mobilize resources from one sector to another without reducing production of essential commodities in the other sector and hence its level of welfare. The analytical concept of "uncommitted community resource" as used in this paper is analogous to the notion of "un-committed resource at the hands of Government" in Cost-Benefit Analysis literature. See e.g., I.M.D. Little and J.A. Mirrlees, <u>Project Appraisal and Planning for Development Countries</u>, (London, Heinemann, 1974) and L. Squire and H.G. Van der Tak, <u>Economic Analysis of Projects</u> (Baltimore, Johns Hopkins Press, 1975).
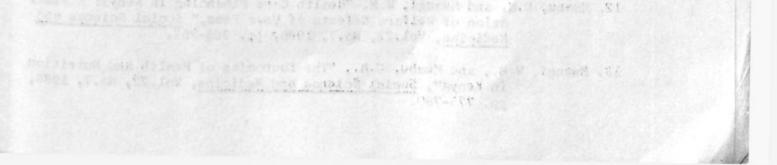
2.   As pointed out in the text, subsidization of drugs in community pharmacies would likely create a black market for drugs, in which the sub-sidized drugs would be bought, and then subsequently resold to private pharmacies at market prices. The effect of the existence of black market for publicly subsidized drugs, would therefore be to reduce availability of drugs in public health facilities (including community drug pharmacies). In fact the black market for subsidized drugs could wipe out the benefits of community pharmacies if it succeeds in making the pharmacies act as channels of cheap drugs to private medical practitioners.

Nonetheless, since a public subsidy to community pharmacies would make simple curative services available to virtually everyone in the community it should seriously be considered on equity grounds. Moreover, the policy of public subsidization of drugs for community based health care is likely to be cheaper, or more convenient than an alternative policy of supplying essential drugs at market prices in community pharmacies, but which also requires an establishment of a system of providing the same drugs free-of-charge to those who cannot afford them.

It is worth emphasizing that the major threat to the subsidized community pharmacies is the emergence of a black market for the drugs sold in those pharmacies. The emergence of this market can be prevented by care-ful selection of pharmacy managers; by making these managers accountable to village health committees; by establishing a simple system of accounting for essential drugs; by linking community pharmacies to the nearest government health facilities and ensuring that the pharmacies are regularly supervised by managers of these facilities; by educating community members about the

dangers of a black market for community drugs, and urging them therefore,
to report those engaged in it to the village health committees; and by
using moral and political persuasions to restrain private pharmacies from
buying subsidized drugs from community pharmacies or from those who handle
such drugs. The main issue here is not whether subsidized community
pharmacies have worked well in the past, but whether, given their potential
benefits, they can be made to function as desired.

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Appendix <u>A</u>;   INDEBTED DEVELOPING COUNTRIES: LONG-TERM AND
SHORT-TERM EXTERNAL DEBT RELATIVE TO EXPORTS
AND TO GDP, 1978 AND 1985.

Table A.1   Indebted Developing Countries

INDEBTED DEVELOPING COUNTRIES (BY REGION)	Ratio of External Debt to Exports of Goods and Services Percentage	
	1978	1985
Africa	124.2	166.0
Asia	81.0	92.1
Europe	126.8	131.1
Nonoil Middle East	161.5	225.3
Western Hemisphere	217.2	289.4

<u>Source:</u>   Lancaster and Williamson (1936),

Table 2.1, p.30.

Appendix 2: RANKING OF SUB-SAHARAN COUNTRIES ACCORDING
TO DEBT OUTSTANDING, END 1985.

Table A.2: Outstanding Debt in Sub-Saharan Africa

Country	TOTAL DEBT (BILLION DOLLARS)	DEBT EXPORT RATIO (Percentage)	DEBT GDP RATIO (Percentage)
Nigeria	16.6	134.6	21.5
Sudan	8.3	1232.4	100.1
Ivory Coast	8.0	238.1	116.9
Zaire	5.3	258.3	203.5
Zambia	4.2	464.0	455.3
Kenya	3.5	224.8	57.3
Tanzania	3.4	734.3	62.5
Mozambique	2.6	1518.6	129.2
Zimbabwe	2.4	164.3	20.0
Madagascar	2.3	634.1	101.8
Senegal	2.3	285.1	93.4
Ghana	2.2	324.9	21.2
Ethiopia	1.9	339.4	36.5
Cameroon	1.8	74.0	21.7
Somalia	1.5	909.1	205.1
Mauritania	1.4	378.5	215.0
Guinea	1.3	254.7	74.4
Congo	1.3	105.2	60.9
Mali	1.2	563.8	138.4
Uganda	1.2	279.2	33.1
Liberia	1.0	215.6	103.8
Nigeria	1.0	322.3	64.0
Malawi	0.9	343.0	78.7
Benin	0.8	326.0	78.9
Togo	0.8	315.7	114.7
Gabon	0.7	34.3	21.5
Burkina Faso	0.6	366.6	73.4
Mautitius	0.6	103.5	63.1
Sierra Leone	0.4	314.9	57.2
Burundi	0.4	312.3	40.2
Botswana	0.3	38.8	40.8
Rwanda	0.3	175.5	19.6
Central African Republic	0.3	169.1	58.0
Guinea-Bissau	0.3	1042.0	129.4
Swaziland	0.2	75.6	57.8
Gambia	0.2	271.3	109.6
Chad	0.2	197.7	256.0
Lesotho	0.1	45.3	59.1
Comoros	0.1	625.9	123.1
Equatorial Guinea	0.1	473.9	125.7
Djibouti	0.1	53.0	23.8
Sao Tome and Principe	0.1	579.0	295.1
Cape Verde	0.1	212.8	96.7
Seychelles	0.1	90.0	51.7

Source: Lancaster and Williamson (1986); pp.38-39, Table 2.8.
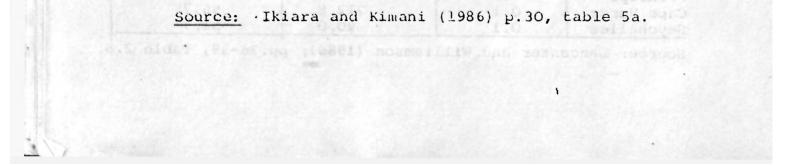
Appendix 3:   TRENDS IN RECURRENT AND DEVELOPMENT EXPENDITURE
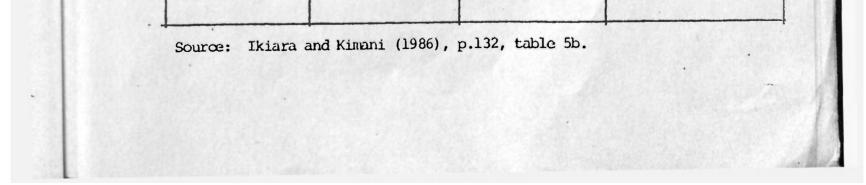OF MINISTRY OF HEALTH, 1960-1984, KENYA.

Table A.3: Kenya's Recurrent and Development Expenditure for
MOH; and Gross Government Expenditure (in K£ millic

Year	Recurrent Exp.	Development Exp.	Total MOH	Total Gross Govt. Exp.
1960	2.763	0.269	3.032	46.359
1961	3.159	0.267	3.426	50.942
1962	3.258	0.165	3.422	52.721
1963	3.241	0.171	3.412	56.477
1964	2.895	0.159	3.054	68.130
1965	3.128	0.142	3.170	70.540
1966	3.554	0.170	3.724	77.520
1967	3.845	0.225	4.070	84.880
1968	4.327	1.107	5.434	96.050
1969	4.471	1.172	5.913	104.979
1970	6.091	1.850	7.941	121.461
1971	6.818	3.000	9.819	155.850
1972	9.340	2.183	12.773	201.407
1973	10.590	2.183	12.773	201.407
1974	12.110	2.321	14.431	230.167
1975	16.903	3.827	20.730	301.582
1976	19.522	4.772	24.295	373.109
1977	21.26	8.300	29.56	409.76
1978	29.210	7.690	36.900	590.390
1979	35.380	7.750	43.130	697.610
1980	43.720	10.750	54.470	781.320
1981	52.600	12.680	65.280	972.060
1982	59.830	11.300	71.130	1122.320
1983	62.370	7.700	70.070	1197.380
1984	60.79	14.720	75.510	1296.460

NB: K£0.8 is approximarely equal to 1 U.S. Dollar

Source: ·Ikiara and Kimani (1986) p.30, table 5a.

Appendix 4:   RECURRENT AND DEVELOPMENT EXPENDITURE AS A
              PROPORTION OF TOTAL GROSS EXPENDITURE OF THE
              MINISTRY OF HEALTH, 1960-1984, KENYA.

Table A.4:   Ministry of Health Expenditures (percentages)

Year	Reccurent Expenditure (%)	Development Expenditure (%)	Gross Exp. on Health as a Percent of Gross Govt. Expenditure (%)
1960	91.1	8.9	6.5
1961	92.2	7.3	6.7
1962	95.2	4.8	6.5
1963	95.0	5.0	6.0
1964	94.8	5.2	4.5
1965	95.5	4.5	4.5
1966	95.4	4.6	4.8
1967	94.4	5.6	4.8
1968	79.6	20.4	5.7
1969	80.2	19.8	5.6
1970	76.7	23.3	6.5
1971	69.4	30.6	6.8
1972	76.4	23.6	6.6
1973	82.9	17.1	6.3
1974	83.9	16.1	6.3
1975	81.5	18.5	6.9
1976	80.4	19.6	6.5
1977	71.9	28.1	7.2
1978	79.2	20.8	6.3
1979	82.0	18.0	6.2
1980	80.3	19.7	7.0
1981	80.6	19.4	6.7
1982	84.1	15.9	6.3
1983	89.0	11.0	5.9
1984	80.5	19.5	5.8

Source: Ikiara and Kimani (1986), p.132, table 5b.

Appendix 5: RECURRENT COST OF CONTINUING EDUCATION PROGRAM FOR
            HEALTH WORKERS IN TANZNAIA, 1984

Table A.5: Recurrent Cost of Continuing Education for Health Workers,
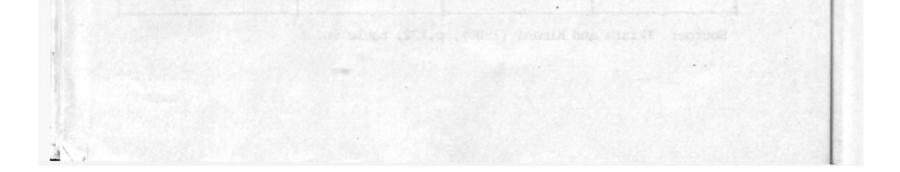   Tanzania, 1984

Cost Item	Foreign Exchange Expenditure (in T.shs)	Local Currency Expenditure (T.shs)	Total Expenditure (T.shs)
1. Orientation Visist⁻ (Course)	1584.5	5233.8	6818.3
2. Extension Course			
a) Baseline Surveys	1473.8	5659.6	7133.4
b) Training of Trainees	8282.9	28799.1	37084.0
3. Refresher Courses - Per course/average attendance			
a) Regional Medical Assistants course	4702.2	44862.7	49564.9
b) Medical Assistants Course	5914.9	44757.1	50672.0
c) Other courses	4872.5	42553.8	47426.3
4. Distance Teaching	76995.0	55660.0	132665.0
5. District Library·Development	2354.4	2138.4	4492.8

NB: T.shs.25 are approximately equal to 1 U.S. Dollar

SOURCE: Dunlop, W.D., A Background paper on Cost, Management, and
         Economic Considerations of the Tanzanian Continuing Education
         for Health Workers Project, AMREF, January 1985, p.39.

Appendix 6: FOREIGN EXCHANGE SHARE OF TOTAL OPERATING COSTS
            OF GOVERNMENT HEALTH FACILITIES IN SELECTED POOR
            COUNTRIES

Table A.6. Foreign Exchnage Share of Operating Costs fof Public
            Health Facilities, 1969-1981.

Facility Type	Country	Year of Estimate			
		1969	1978/79	1981	1983
Hospital	Tanzania	–	0.41	–	–
	Uganda	0.22	–	–	–
Health Centre	Tanzania	–	0.53	–	–
	Uganda	0.39	–	–	–
	Indonesia			0.37-0.46	–
Other Rural Units	Tanzania	–	0.38	–	
	Sudan	–	–	–	0.47
	Indonesia	–	–	0.22-0.51	–

Source: Dunlop, D. W. and Over, A. M. (1986), p.9, table 1.

Appendix 8:   PERCENTAGE OF CENTRAL EXPENDITURE ALLOCATED

TO HEALTH IN SELECTED DEVELOPING COUNTRIES.

Table A.8:   Health Expenditures as percent of Central

Government Expenditure in LDCs, 1978-1982.

Country	Health Expenditure (per cent of Total Expenditure)*
Malawi	5.3
Botswana	5.4
Mauritius	7.6
Swaziland	6.1
Cameroon	4.1
India	1.9
Burkina Faso	5.8
Sudan	1.5
Liberia	6.8
Ghana	6.5
Tanzania	6.2
Zambia	7.0
Uganda	6.1
Kenya	7.5
Zimbabwe	6.1
Brazil	7.3
TOTAL NON-OIL DEVELOPING COUNTRIES	4.1

*These percentages are based on approximations of actual
expenditure figures.

Source: Ikiara and Kimani, p.11, table 1.

Table A.9.3:   Sources of Health Sector Finance for Botswana: Percentage Breakdowns, 1980.

SUMMARY TABLE 1(b) Health sector current expenditures Percentage breakdown of financing	Ministry of Health	Other ministries	Local government	Other state bodies	Missions	Industry	Local voluntary bodies	Direct private payments by individuals	Insurance	Self help/ other private sources	Foreign aid – official	Foreign aid – private	Total
Teaching/national referral hospital	74.13	4.45						12.23	7.41		1.78		100%
General hospitals	50.47	1.30			12.28	3.64		12.70		8.18	1.43		100%
Long-stay hospital	87.04	2.32						10.64		-			100%
Mental hospital	86.39	1.73						11.88					100%
Other institutions (specify)													
Services abroad						8.85	2.65	88.50					100%
Health centres with medical staff			78.67					3.56			6.67	11.11	100%
Health centres with paramedical/nursing staff			87.67				2.03	7.24		1.02		2.03	100%
Health posts with community health workers only			81.08					18.92					100%
Private practitioners								85.71	14.29				100%
Traditional health practitioners								100.00					100%
Private dental services								71.43	28.57				100%
Retail outlets (drugs and dressings)								100.00					100%
Other private services (specify)								100.00					100%
Communicable disease control	30.77	69.23											100%
Domestic water supplies		57.69						42.31					100%
Sanitation programmes	26.58	33.22	21.10			16.61					2.49		100%
Nutrition programmes	4.24	8.47					0.85				84.75	1.69	100%
Health education programmes	100.00												100%
Occup. health programmes	37.50					62.50							100%
Other programmes (specify)	37.50										62.50		100%
Central laboratory service	100.00												100%
Travelling and transport	10.07	53.96	25.18		2.16	6.47		0.72		1.44			100%
Headquarters administration	72.30	0.44	16.13		5.58				5.56				100%
Training – doctors, dentists		15.79									84.21		100%
Trainig – other health staff	77.38	4.76									17.86		100%
Medical research													
Other services (specify)													
Transfers													
Total	28.00	12.65	8.50		3.13	4.27	0.16	33.66	0.86	1.99	6.24	0.53	100%

Table A.9.4:   Geographic Distribution of Current Health Expenditures for Botswana by Spending Agency, 1980.

TABLE 11.5 Geographic breakdowns of expenditures (current)	Ministry of Health	Other ministries	Local government	Other State bodies	Missions	Industry	Local voluntary bodies	Direct private payments by individuals	Insurance	Self-help other private sources	Foreign aid – official	Foreign aid – private	Total
Headquarters and training	1,300,000	74,000	145,000	–	50,000	–	–	–	50,000	–	310,000		1,929,000
Health services	5,850,000	3,156,000	2,025,000	–	750,000	1,090,000	41,000	8,594,000	170,000	508,000	1,283,000	136,000	23,603,000
Total	7,150,000	3,230,000	2,170,000	–	800,000	1,090,000	41,000	8,594,000	220,000	508,000	1,593,000	138,000	25,532,000
Health services – Urban	5,140,000	156,000	–	–	–	900,000	15,000	3,110,000	150,000	480,000	108,000	–	10,059,000
Health services – Rural	710,000	3,000,000	2,025,000	–	750,000	190,000	26,000	5,484,000	20,000	28,000	1,175,000	136,000	13,544,000
Urban health serv. – Capital city	1,330,000	60,000	–	–	–	50,000	–	1,755,000	100,000	–	24,000	–	3,319,000
– Other towns	3,810,000	96,000	–	–	–	850,000	15,000	1,355,000	50,000	480,000	84,000	–	8,740,000
Rural health serv. – Maj. villages	300,000	2,350,000	1,485,000	–	750,000	190,000	26,000	1,842,000	20,000	20,000	575,000	100,000	7,632,000
– Other areas	410,000	650,000	540,000	–	–	–	–	3,642,000	–	8,000	600,000	36,000	5,912,000
Headquarters and training	18.2%	2.3%	6.7%	–	6.3%	–	–	–	22.7%	–	19.5%	–	7.6%
Health services	81.8%	97.7%	93.3%	–	93.8%	100%	100%	100%	77.3%	100%	80.5%	100%	92.4%
Total	100%	100%	100%	–	100%	100%	100%	100%	100%	100%	100%	100%	100%
Health services – Urban	87.9%	4.9%	–	–	–	82.6%	36.6%	36.2%	88.2%	94.5%	8.4%	–	42.6%
Health services – Rural	12.1%	95.1%	100%	–	100%	17.4%	63.4%	63.8%	11.8%	5.5%	91.6%	100%	57.4%
Urban health serv. – Capital city	25.9%	38.5%	–	–	–	5.6%	–	43.6%	66.7%	–	22.2%	–	33.0%
– Other towns	74.1%	61.5%	–	–	–	94.4%	100%	56.4%	33.3%	100%	77.8%	–	67.0%
Rural health serv. – Maj. villages	42.3%	78.3%	73.3%	–	100%	100%	–	33.6%	100%	71.4%	48.9%	73.5%	56.3%
– Other areas	57.7%	21.7%	26.7%	–	–	–	100%	56.4%	–	23.6%	51.1%	26.5%	43.7%

Source: A. Griffiths and M. Mills (1982), p.185.

NOTES TO TABLES A.9.1 - A.9.4

Table A.9.1 attempts to answer the following question: How much
    is spent on different categories of health services by
    various organizations, Ministries or individuals?

Table A.9.1 shows that the largest expenditure for the Ministry
    of Health ((₱ 2,960,000) in 1980 was spent on General
    Hospital Services. In contrast, other ministries spent
    their largest amount (₱ 1,500,000) on Domestic water
    supplies. The spending patterns of other agencies on health
    or health-related activities is evident from table A.9.1.

Table A.9.2 attempts to answer the following question: What
    percentages of their total budgets, did various organizations,
    agencies, Ministries etc. spend on different categories of
    health services? As can be seen from Table A.9.2, The Ministry
    of Health spent 13.99% of its budget on the Teaching/national
    referral hospital; 41.4% on General Hospitals; 1.4% on
    Health Education Programmes etc. The percentages spent by
    other Ministries, organizations and agencies are self-
    evident from Table A.9.2. Note in particular that about
    49.5% of the money spent by private households went to pay
    for services of traditional healers.

Table A.9.3: is intended to answer the following question: How are
    different categories of health services or activities financed?
    Table A.9.3 (last row) shows that about 28% of the funds spent
    on the health sector came from the Ministry of Health;
    33.66% of these funds came from Direct Payments by Private
    Individuals; about 4.27% came from 'Industry; about 3.13%
    came from missions etc. It should be noted that some services
    are financed entirely by Government, while others are financed
    exclusivly by private households. Health Education Programmes
    and Central Laboratory Services are financed entirely by the
    Ministry of Health. The services of traditional healers and
    other priv- e medical services are financed by private individuals.

Table A.9.4:   tries to answer the following question: How are
              health expenditures made by different organizations distributed
              between urban and rural areas? The rural-urban distribution
              of health expenditures is evident from the second half
              of Table A.9.4. Notice that about 87.9% of the MOH
              budget is spent on urban health services.