Chapter 6

Health Financing

6. HEALTH FINANCING

6.1 THE FINANCING GAP

6.1.1 For Hospital Curative Services:

A 1995 study (Ref. 22) surveyed a sample of government and NGO hospitals to determine the "standard" costs, which was based on the cost per unit of output of the best quality hospital in each category. Adjustments were made for any areas that were notably deficient[1]. The adjusted unit service costs for the best hospital (including the NGO hospitals) in each category were then used as the standard costs[2] (Table 6.1).

Table 6.1 Components of costs for three scales of hospital operations

	High Volume (Coast PGH)		Medium Volume (Tenwek)		Low Volume (Nangina)	
Costs (Kshs.) 1993		Percent		Percent		Percent
Inpatient Costs per bed-day						
Staff Costs	55.7	37.3%	60.4	25.7%	55.2	38.5%
Drugs and Medical Supplies	28.4	19.0	22.3	9.5	26.2	18.3
Food	24.3	16.3	29.8	12.7	6.4	4.4
Ancillary Dept. Costs	20.5	13.7	38.6	16.4	15.6	10.9
Overheads	20.5	13.7	83.4	35.6	39.8	27.8
Total Cost	**149.4**	**100%**	**234.5**	**100%**	**143.2**	**100%**
Outpatient Cost per visit						
Staff Costs	35.1	30.1%	29.9	15.5%	2.8	6.9%
Drugs and Medical Supplies	21.0	18.0	60.6	31.4	19.6	49.0
Ancillary Dept. Costs	45.9	39.4	21.6	11.2	8.6	21.4
Overheads	14.5	12.4	80.7	41.9	9.1	22.7
Total Cost	**116.4**	**100%**	**192.7**	**100%**	**40.0**	**100%**

Source: Ref. 22

Using the outpatient and inpatient utilisation data for all GOK hospitals in each size category, the total overall recurrent costs were found by multiplying by the standard

1 For example, in the 'medium volume' category, Tenwek Hospital was the highest quality (in fact, the highest quality of any size hospital), but was considered to be understaffed according to the average staffing level of similar size hospitals, so staff costs were adjusted upwards. Similarly, drug costs in GOK hospitals were considered too low due to undersupply, so were adjusted to the level of the Mission hospitals. While it may appear that this methodology fails to emphasize the high productivity of staff at, e.g., Tenwek, it is an accepted accounting approach to determining standard costs.

2 Alternative ways of interpreting the data, such as taking the average of all hospitals in the groups, yielded similar results, with the notable exception of much lower inpatient costs in low volume hospitals

costs. This analysis showed that the large provincial hospitals were actually slightly **overfinanced,** while the district and subdistrict hospitals are the most **underfinanced by 41%. The financing gap for MoH hospitals in 1992 US dollars was $26,019,267 or $1.10 per capita.**

6.1.2 For Primary Health Care

Another study was done earlier in 1990 (Ref. 23). It measured the current costs and the financial resource gap for the rural health facilities and hospital inpatient departments. It made a more methodical attempt to project the expected costs if the facilities were to operate at their full planned utilisation levels. It included all required inputs, such as equipment investment and maintenance, building maintenance, full-staff costs, staff in-service training, drug supplies, transport investment and maintenance, and patient food. These are presented in Table 6.2.

Table 6.2 Expense categories and financing gaps for PHC (in millions of 1990 Kshs)

Expense Category	Current expenditures	Full-capacity expenditures	Gap	Gap as % of current level
Drugs	275.7	354.7	79.1	**29**
Equipment	6.3	13.5	7.2	**114**
Transport	19.3	36.6	17.3	**90**
Training	42.2	47.3	5.1	**12**
Supplies	41.1	102.4	61.3	**149**
Patient food	1.7	7.6	6	**352**
Building Maintenance	3.3	86.6	83.3	**2524**
Staff Costs	765.5	936	170.5	**22**
TOTAL	**1156.8**	**1584.7**	**429.8**	**37%**
TOTAL EXCLUDING STAFF COSTS	391.3	648.7	**259.3**	**66.2%**

Source: Ref. 23

The 1990 study estimated that the total PHC financing gap is 37%, but the non-wage resource component of this gap is 66%. This is much higher than the current contribution of the FIF to non-wage recurrent expenditures found in the RHFs in the Study Area. It suggests the possibility of increasing cost-sharing revenues in order to fill in the PHC financing gap.

The importance of each category of financing gap should not be confused with its size. **For example, although the transport maintenance gap is relatively small, transport has been identified as a major constraint to the delivery of P/PHC. The shortage of drugs and other supplies are considered to be more serious constraints than the larger gap for staff.** Equipment maintenance is another gap that is small in absolute amounts, but critical in terms of need and efficiency.

Table 6.3 Financing gap components for RHFs and hospital OPDs (All costs are in millions of 1990 Kshs.)

Rural Health Facilities	Current Expenditure	Gap
Drugs	196.7	43.9
Building Maintenance	2.1	73
Personnel	309	81
Supplies	13.3	37
Total	**521.1**	**234.9 (44% of total)**
TOTAL NON-STAFF COSTS	**212.1**	**153.9 (72% of total)**
Hospital Outpatient Departments		
Drugs	79	35
Building Maintenance	1.2	10.3
Personnel	456.5	89.5
Supplies	14.6	23.7
Total	**551.3**	**158.5 (29% of total)**
TOTAL NON-STAFF COSTS	**94.8**	**69.0 (73% of total)**

Source: Ref. 23

The gap can also be looked at in terms of facility level, with dispensaries and health centres grouped together as Rural Health Facilities (Table 6.3). **The prevailing funding bias towards hospitals is clear; the gap for health centres and dispensaries is 44% as compared to 29% for OPDs. The maintenance gap is notably large for RHFs. However, the drug and personnel gaps are smaller. The financing gap for non-staff costs for both outpatient departments and RHFs is about 73% in order to improve the quality of services. This is the gap that should be the target of the FIF/cost-sharing effort.**

6.1.3 A Cause and A Compounding Factor

The financing gap has its roots in the budgetary process. It seems budget requests are generated by the Health Administrative Officers, approved by the DHMB and then submitted to the central MoH finance Department.

Furthermore, an analysis of the recurrent budget (Table 6.4), specifically the rural health service budget, showed that it was based neither on any of the following: number of health centres (the budgets range from 110,000 to 292,000 Kpounds per health centre), total rural health facilities (from 24,000 to 70,000 per rural health facilities), nor personnel (from 1400 to 3060 Kpounds per staff member). The analysis reveals that the budget is primarily population -based and not facility-based.

Similarly, no consistent rationale could be found for district hospital budgets. Gross hospital budgets varied from 1,035 Kshs per admission (Kericho DH) to 160 Kshs (Kisii).

Table 6.4 RHF budget per population for various parts of Kenya

District or Province	1994 Est. Pop	1997 Rural health facilities budget	Budget/capita (Kpounds/capita)
Bomet		1,178,000	
Gucha		976,000	
Nyamira	588,000	967,000	1.64
Kisii	925,900	1,107,000	1.20
Kericho	598,000	1,457,000	2.44
Nairobi	1,660,000	1,905,000	1.15
Coast	2,142,000	5,792,000	2.70
Eastern	4,401,000	11,124,000	2.53
N-Eastern	287,000	1,639,000	5.71
Central	3,583,000	9,525,000	2.66
Rift Valley	6,096,000	1,719,200	2.82
Nyanza	4,060,000	9,364,000	2.31
Western	2,998,000	6,736,000	2.25
Total Kenya	25,227,000	63,277,000	2.51

Source: 1997/98 Budget Estimates

Aside from limitations in the budgeting process, delays in the release of disbursements tend to compound the existing financial gap. This problem is considered as the biggest one among members of the DHMTs and donors. This is true even when all paperwork is in order and funds are available. The root cause of the problem seems to lie in the District Commissioner's office. This will be a difficult problem to tackle. Some donors have resorted to pressuring the Ministry of Planning to allow separate accounts to be set up at central and district level.

6.2 MAXIMIZING INCOME

6.2.1 Traditional Sources of funding the health sector

Given a financial gap, the three general approaches are to maximise the income, minimise expenditure and improve efficiency.

The traditional sources of fund for health care are the government that accounts for 52% of the total, the private sector (combination of out-of-pocket and contribution of local NGOs) for 30% (Ref. 42) and the external donor (Table 6.5). The rapid expansion of health services and facilities throughout Kenya since independence have been largely financed through the tax-based government budget. Recently, however, the GOK announced an overall 20% expenditure reduction over the coming thre years, which will impact the allocation for health in some way that is not yet determined.

Table 6.5 Health Expenditures from all sources as a percentage of GDP (1994 data)

Source of Funds	Kenya	Average, EA region
Government (a)	1.3	1.7
Donor	0.4	1.1
Private	0.8	2
Total	2.5	4.8
(a) as % of government spending	3.8	5
US dollars per capita total spending	$7.79	$5.76
% Community	7.7	9.6
% Preventive	20.2	22
% Curative	72.1	68.4

Source: World Bank, Ref.42

Historically, donor contributions have been largely intended for capital investments. They figure significantly in MoH recurrent expenditures in the areas of essential drugs, immunisation, family planning, and HIV/AIDS control. As a result of donor inputs, real expenditure on Rural Health Services and P/PHC has been rising. The largest donors to the health sector from 1992 to 1996 were IDA (22%), USA (19%), local NGO support (19%), followed by Sweden, Japan, Finland, and Denmark (Ref. 40). Compared to other countries in eastern Africa, however, Kenya benefits relatively less from donor support to the health sector. There is no certainty about this trend being reversed.

Therefore, it seems apparent that among the three main sources of funding, it will be the households that would have to shoulder the burden of increasing resources and revenues for the health sector.

6.2.2 Cost-Sharing - from Registration Fee to Facility Improvement Fund

a. History

The history of cost-sharing is well-documented (Ref. 13). Despite the GOK's intention to provide free health care to Kenyans, user fees existed in some facilities in the post-independence period, but these were nominal and not collected in a serious way because they were returned to the Treasury and no benefits accrued to the collecting facility.

After several years of discussing policy alternatives (Ref. 7), in 1989 a new program, the Kenya Health Care Financing Programme, was started and outpatient fees or registration fees were introduced at most levels of the system. Existing inpatient fees were raised to a more meaningful level and modified somewhat. A new system of waivers and exemptions was introduced. This time revenues were to be retained at the facility, with a proportion be used for PHC activities in the district as well. Over 500 revenue clerks were hired and trained. Increased reimbursements for inpatients

from the National Hospital Insurance Fund was also planned as a major source of "cost-sharing" revenue, with the premium revenue coming from payroll deductions of civil servants and other workers in the formal sector.

The Registration Fee proved unpopular, however, primarily because people often still had to buy prescribed drugs from outside sources, and in 1990 it was cancelled by Presidential order. A year later they were reintroduced, in the form of a Treatment Fee which would be paid only after the patient received drugs and other treatment, and the system was now referred to as the Facility Improvement Fund (FIF) rather than Cost Sharing. One of the underlying principles was that the FIF would be used to improve the quality of care, and therefore people would be more willing to pay the user charges. The system has functioned reasonably well up to the present. Recent evaluations and consultants' studies have pointed out reasons for its success and some shortcomings.

The additivity[3] and retention[4] features have encouraged facilities to collect fees. Collections have increased since 1992 to approximately 15% of the non-salary recurrent costs of running health facilities although some facilities and whole districts are still achieving low percentages of their collection target.[5] A monitoring system is in operation. Funds also disappear before they can be banked, or remain unspent. A recent experiment with a cash register system at Coast PGH has shown that great improvements are possible in this regard as the accounting system is tightened up. The approval process for expenditures used to be lengthy, having to go through the central Health Care Financing Secretariat, but this process has been decentralised to the Provincial level.

b. Collection

Table 6.6 National Revenues from Cost Sharing Programme
(Dollar figure based on the prevailing exchange rate)

Years	MoH	KNH	Total	
	Ksh Mn	Ksh Mn	Ksh Mn	US$ Mn
1989/90	0	21.4	21.4	0.86
1990/91	28.5	20.6	63.4	2.11
1991/92	33.1	19.6	69.3	1.98
1992/93	62.5	41.1	134.8	1.93
1993/94	114.3	71.3	242.7	4.04
1994/95	153.9	99.4	330.2	5.69
1995/96	190.9	127.0	413.4	6.67
1996/97	205.1	185.9	467.9	8.51
Total	**788.4**	**586.3**	**1743.2**	**31.79**

Source: APHIA Financing & Sustainability Project Archives

3 The Treasury (Ministry of Finance) does not reduce the MOH budget as a response to increased locally-generated revenues, and the MOH would not reduce the centrally-allocated vote of any particular facility or district.

4 75% of revenues collected is retained by the generating facilities as the Facilities Improvement Fund (FIF); thus the majority is used to improve service at facilities; the other 25% is pooled at the district level to be used for improving P/PHC, and is under the control of the DHMT

5 Collection targets are basically generated from the facility's utilization figures from a previous period.

Table 6.6 shows that cost-sharing revenues have increased steadily, and the total revenue has far surpassed the estimated US$ 5 million cost of the program. However, Table 6.7 shows that there is still much room for improved revenue collection.

Table 6.7 Ratings of Provinces and districts according to their collection performance

Greater than 30% of targeted collection (17 districts)	Central Province (35.5%) Coast Province (31.2%) Nyanza Province (31.7%) Eastern Province (31.7%)
Between 10% and 30% of targeted collection	Rift Valley Province (18.9%)
Less than 10% of targeted collection	Western Province (3.6%)

Source: Ref. 11

Revenue collection was affected by the following factors:

- Collection losses through staff negligence, lack of proper financial management systems, book keeping and fraud;
- Lack of drugs at some facilities leading to low attendance and low cash collections; and
- Excessive exemption from payment of fees was formerly a problem until the exemption categories were changed.

c. Utilisation of cost-sharing revenues

Hospitals and health centres in the Study Area expended less than they collected (Table 6.8). One of the major problems with the way the system works now is that funds remain unspent because of the time required to receive authorisation for expenditure. This will improve with the decentralisation of this function to the provincial level. The differences between collections and expenditure can be due to poor bookkeeping or to carrying over funds to the next year.

Table 6.8 Cost-sharing performance in the Study Area

	Kericho	Nyamira	Gucha	Kisii	Bomet	All Districts Percentage Spent
Dist. Hospital/SDH collected	2,276,445	1,414,945	N/A	4,834,580	104,930	
Hospital/SDH expended	1,969,395	1,753,384	N/A	3,445,503	318,800	86.7%
Average Health Centre collected	61,195	60,523	181,123	112,216	86,990	
Average Health Centre expended	37,433	54,888	57,018	186,703	82,768	83.4%

Source: JICA Study Team data

Cost sharing in the Study Area contributed about 4.3% to the total recurrent costs of rural health facilities (Table 6.9). Contribution to district hospital costs (not including the 5% capital investment cost) ranged from 3.5% in Kericho to 5.1% in Kisii. In terms of the non-wage recurrent costs, the FIF was equivalent to about 17% for the RHFs, and from 11% to 23% for district hospitals (hospital drug expenditures could not be determined accurately, so this figure is only approximate).

Table 6.9 Cost-Sharing revenues spent as a percentage of budgets

Study Area District	District Hospitals		Health Centres	
	% of total budget	% of non-wage budget	% of total budget	% of non-wage budget
Kericho	3.5	10.7	2.2	6.8
Kisii	5.1	20.1	4.9	14.4
Nyamira	4.2	22.7	4.6	17.6
Bomet	2.8	8.3	5.5	28.6
Averages	3.9	15.4	4.3	16.8

Source: JICA Study Team data

The cost-sharing programme can thus be said to be well-established and effective in the Study Area, but the results, especially the percentages of non-wage recurrent budget, should be interpreted with caution because of the relatively low level of non-wage expenditures. This will be exacerbated with the trend toward increasing wage budgets (there was a 10% raise granted to government civil servants in 1997 alone).

Furthermore, a large proportion of the FIF (44% in RHFs and 39% in hospitals) was used for items that are considered patient care such as food, drugs, etc. This means that it was merely supplementing the inadequate MoH budget for necessary items. In one sense, this is making a contribution to quality improvement, but it could also be argued that this only brings the standard up to an acceptable minimum level. Only around 30% of the FIF were used for transportation, maintenance, and facility operations. Only Kericho District was able to show that part of the FIF was actually used for PHC activities.

DHMTs in all Study Districts agreed that it was essential to provide greater community sensitisation to cost-sharing. There was also wide agreement that management procedures need to be improved so that fraud and theft are reduced. Health Centre staff wanted more control over their funds, and did not want them to go into a district bank account. .

The current rate of cost-sharing revenue generation in rural facilities and available to P/PHC from District Hospital cost-sharing is at most 20% of non-wage recurrent costs. Assuming the size of the funding gap has not changed significantly from 1990, in order to fund fully the health centres, outpatient departments, and dispensaries, the rate must increase to around 70% of non-wage recurrent costs.

d. Affordability

The question of whether people can afford to pay user charges at government health facilities is an extremely complex one. A useful starting point at this question is through income distribution. According to the data from the 1994 Welfare Measurement Survey, cash expenditures on food average between 40% and 50% of household income in the Study districts (Table 6.10).

Table 6.10 Household income from different sources and medical expenditures (Kshs.)

District	*Annual* per capita income	Monthly wages, salaries, profits	Other non-agricultural income	Agricultural income	Crop income	Medical care expenses	Percentage spent on medical care	Total monthly household income
Kisii	23733.7	3870.7	1778	1767.6	1658.1	553.6	5.5%	10074
Nyamira	16230.9	2413.2	1024.6	1655.8	513.4	411	7.3%	5607
Kericho	29415.4	2511.4	882.5	1945.9	2028.7	231.7	2.2%	10368
Bomet	25823.6	3057.1	1262.1	5773.9	1172.3	233.7	2.1%	11265
Migori (Gucha)	19498.7	1585.5	1540.3	2874.4	641	269.6	4.1%	6641
Total Kenya	27403	4941.1	1497.2	2108.4	1149.3	347.1	3.6%	9696

Source: Ref. 14

A typical outpatient visit at a MoH health centre might cost about 20 Ksh, plus up to 50Ksh more if transport or additional drugs purchase were involved for a total of perhaps 100Ksh, which is 1 to 2 percent of mean monthly household income. The mean level of expenditure of 4% could result from two or three household members falling sick in one month. The indication from the gross population income data, therefore, is that the current fees in MoH facilities are affordable.

Analysis suggests that many people would be willing and able to pay more than the present fee levels for MoH health services in the Study Areas. This would be especially true if a significant degree of quality improvement were made. Income survey data can be useful in setting user charges, For example, one analysis in other countries (Ref. 44) found that if fees do not exceed 2 to 3 percent of household non-food expenditures they will have no significant effect on utilisation of services.

e. Need for Adjustment

A report on the user fee schedule was produced in July 1996 for the FIF Implementation Committee. The report recommended that as of October 1996, fees should be adjusted for past inflation to bring them back to their original levels in real terms, plus an adjustment for future inflation anticipated up to the point of the next scheduled fee increase. Inflation from 1 Oct 1994 to 30 June 1996 was 28.9%. Assuming Fiscal Year 1996 and 1997 inflation to be 12% per year, the compound total of inflation from 1 October 1994 to 30 June 1998 is 61.6%.

It was suggested that fees should also be related to the actual costs of delivering services, requiring periodic costing studies. If revenues from user fees are sufficient to

cover variable costs, then the public budget can be redirected to paying for fixed expenses of quality and cost-effectiveness improvements.

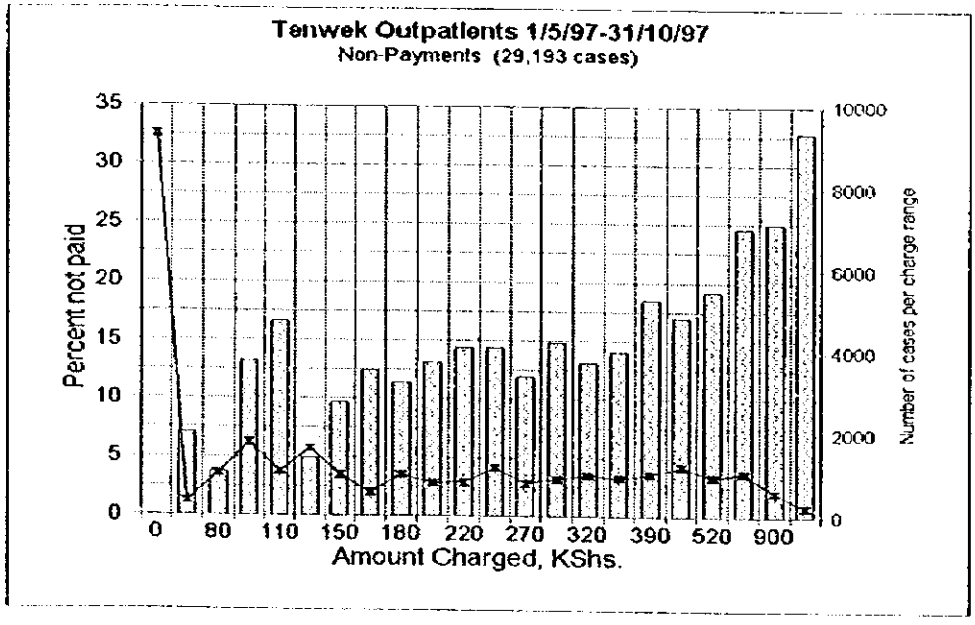


Fig. 6.1 Tenwek Out-patients 1/5/97-31/10/97
Non-Payments (29,193 Cases)

Tenwek Hospital in Bomet district has provided interesting objective information about payment of charges which (with some supplementary research) could increase knowledge on affordability of health care and the need to adjust the levels. This hospital is supported almost entirely by patient fees, and charges outpatient fees that are calculated to cover the actual cost of treatment. Fees are much higher than at MoH hospitals, but the quality of care is also superior. An outpatient consultation costs 80 Kshs. or 140 Kshs. plus drugs and ancillary services, for an average cost of 232 Kshs. Inpatient charges start at 350 Kshs. per day for bed, and can average several thousand for a typical stay. All patients are required to pay a partial deposit before seeing a provider, and after receiving their full treatment, all efforts are made to collect the rest of the bill. The hospital's policy is to treat everyone, however, and hospital staff make the decision, on the spot, whether to allow a patient who says he cannot pay all or some of the charge to leave without paying. All unpaid balances are recorded, and the patient is never considered to have received free treatment until it really appears that he cannot pay after several repeated attempts have been made to collect.

When the percentage of patients who were unable to pay their bill is plotted against the amount (shown in Figure 1 for outpatient charges), ability to pay decreases from about 40 to 100 Kshs, with a plateau of equal ability to pay up to about Kshs. 400, beyond which more and more people have problems in paying. A similar plateau is found for inpatient charges up to Kshs. 4000.

f. Protecting the Poor through Waivers

Difficulties in identifying the poor in health facilities has been noted by several observers (Ref. 6) who would like to determine whether equity of access to health services was maintained under the cost-sharing program. Therefore, the Study Team obtained its own data from household surveys of the poor, patient exit interviews, and surveys of workers in public and private health facilities. Information about waivers was usually obtained informally from health staff, friends, or relatives.

Adequate training for health staff is also needed; social workers should be placed in provincial hospitals; District Health Management Boards and District Health Management Teams should be encouraged to publicise the exemption and waiver system locally; and much better records should be kept.

Increasing overall fee levels, while increasing the rate of granting waivers to closer the estimated required level of 20 to 30%, should have the effect of increasing overall revenues while improving protection of the poor, and also reducing the degree of objection from the poorer classes of the population.

g. Projecting Cost-Sharing Revenues in the Study Area

A simple model is shown on Table 6.11 for predicting the level of cost-sharing contributions to the non-wage budget for any particular area for any future year. Assumptions can be entered about the rate of increase of collections, the rate of increase in average fee levels (weighted over all services and levels of care), and about the expected waiver rate. The example below uses some actual data and some estimates for rural health facilities in the Study Area, but is only shown to demonstrate what types of information and targets are needed to make revenue projections.

Table 6.11 Example of use of a spreadsheet model for predicting cost-sharing revenues

COST-SHARING PREDICTION MODEL	A	B	C	D
Current year	1998	1998	1998	1998
Target Year	2002	2002	2002	2002
Current year total cost-sharing revenue	102,575	102,575	102,575	102,575
Current year Non-wage budget	601,500	601,500	601,500	601,500
Current collection rate %	40	40	40	40
Percent waivers and exemptions now granted	20	20	20	20
Target revenues if no exemptions and waivers, if 100%	307,725	307,725	307,725	307,725
Annual % fee increase	10	20	10	15
Increased full target revenues in Target Year	461,588	615,450	461,588	538,519
Annual % increase in collection rate	10	10	20	20
Expected waiver /exemptions by target year - %	30	30	30	50
Expected collections by Target Year	319,561	426,081	497,094	502,618
Current year collections as % of non-wage budget	17.1%	17.1%	17.1%	17.1%
Target year collections as % of non-wage budget	53.1%	70.8%	82.6%	83.6%
New Total of non-wage budget plus FIF	921,061	1,027,581	1,098,594	1,104,118
In case of budget reductions:				
Annual % change in non-wage budget	0	0	0	0
Target year non-wage budget	601,500	601,500	601,500	601,500
Ratio of total non-wage budget + FIF to current year	130.8%	145.9%	156.0%	156.8%

A tool such as this spreadsheet model can put the effects of improving collection rates, raising fees, and adjusting waiver levels in a realistic context of the financing gap for a district or for any given health institution. The above example compares results in the year 2002 with the present year, starting from a collection rate of 40% and 20% waivers and exemptions, which yields at present 17.1% of the non-wage budget:

Scenario A: Raising the collection rate by 10% per year and the average fee levels by 10% a year would increase cost-sharing revenues to 53.1% of the non-wage budget by the target year, with waivers and exemptions increased to 30% of cases.

Scenario B: Raising the collection rate by 10% per year and the average fee levels by 20% a year would increase cost-sharing revenues to 70.8% of the non-wage budget by the target year, with waivers and exemptions again at 30%.

Scenario C: Raising the collection rate by 20% per year and the average fee levels by only 10% a year would increase cost-sharing revenues to 82.6% of the non-wage budget by the target year, with waivers and exemptions again at 30%. This provides a 56% increase in revenues over the MOH budget, which is most of the financing gap.

Scenario D: If fees were increased 15% a year, waivers and exemptions could be increased to 50% while maintaining revenues equal with Scenario C.

A tool such as this spreadsheet model can place the effects of raising fees (and adjusting waiver levels) in a realistic context of the "financing gap" for the district.

District decision-makers would then know how much of the financing gap could realistically be filled by cost-sharing and how much by reallocating resources. Since the district hospital typically consumes about 63% of the district budget, and about 75% of this is for staff costs, under a block grant system about 47% of an entire district's grant would go towards paying for district hospital staff salaries and benefits. A reduction in this amount of only 5% could increase the financing of RHF by 7%. If all of this were to be used for to non-wage expenditures, RHF non-wage financing (currently about 30% of the total), it would be increased by 21%, or half the estimated gap. The 5% reduction could be phased over several years. A reduction in the hospital workload due to improved services at health centres and dispensaries, and other improvements in the conditions of service, would make it possible to reallocate staff.

6.2.3 Other Strategies for Adequate Financing

a. Community Drug Funds and Other Financing Schemes

The largest scale experiment in community financing in Kenya has been the Bamako Initiative (Ref. 38). While regarded by many as a failure, it did demonstrate that communities can in fact be mobilised and can take action for themselves. The main problem, according to UNICEF's own analysis, is that the program started out as community pharmacies and never developed beyond that. Although it worked through the Health Sector Reform program, it was isolated from the cost-sharing program. Efforts to move into the provision of impregnated bednets also failed because of high cost, and the technical reason of the nets being ineffective in areas of high transmission. A comprehensive evaluation of the program found that some communities achieved substantial successes in the operation of their revolving funds, but a depletion of funds was equally common. Some of the over 300 sites evolved into independent operations and still are in operation, while others remained dependent on outside supervision and financial support. The BI will be refocused toward community nutrition and restarted in 1999.

Some dispensaries and many health centres have started their own local funds, typically charging 10 or 20 Kshs. per visit (not per episode). The FINNIDA community project in Western Province has been turned over to the communities and the MoH. It has been noted that in areas where community drug schemes are active, less attention might be paid to making the official cost-sharing system work well, and in fact cost-sharing performance in Western Province was poorer than average. Results are more money collected in some cases than official cost-sharing system. The poor cost-sharing results might be due to a transition to decentralisation: Western is the first province to be decentralised. Cost-sharing funds are banked at the district HQ and then AIEs are requested and issued from Kakamega. The system is said to be working well, with much faster turnaround for AIEs and higher collection level than before.

Another idea that could be implemented under a more decentralised user charge policy is a surcharge for injections. This would address several serious problems: many patients prefer to have injections, when an oral drug is equally effective, and many insist, and will make an extra unofficial payment. Since the injectable is invariably more expensive, this is an extra cost to the system, and also results in rapid depletion of injectibles when they might be needed for acute cases. If the official charge schedule included a significant surcharge for injections when not strictly needed, this would return the private payment to the FIF, and also could reduce the demand for them if high enough.

b. Prepayment/Managed Care

An experiment of prepayment was carried out in 1988 with a coffee-growers cooperative in Meru (Ref. 27). All relevant factors of the potentially covered population were measured, including average expenditures on health care, which was 322 Kshs per household per two months, corresponding to 5.32 visits by household members in the same period. Household heads were asked if they were willing to pay various amounts as prepayment to cover all costs, but the mean amount found was much lower than the point at which the scheme would be economically viable.

Several NGOs have since tested other types of HMO or prepayment-type schemes. The best known is at Chogoria mission hospital (Ref. 32). This is apparently working well, but has not been evaluated. The Community Health service at Tenwek Hospital has tested community opinion and found it very receptive to this approach.

c. Greater Participation from and Partnership with Private Sector

To reduce the curative subsidy by the GOK to wealthier people, the Health Reform Agenda calls for an increased role for the private sector and NGOs in providing curative health care for the portion of the population that can afford to pay for it. Apart from reducing the (now minimal) barriers to entry, it is not at all clear what measures can be taken to encourage the expansion of the private sector, or whether this is really an appropriate emphasis. In some countries the rise of the private health sector has led to the defection of the best-trained staff from the public sector and increased pilferage of MoH drugs. However, it could have a beneficial effect in Kenya if it helped increase coverage in rural areas, or helped to absorb excess MoH staff. Pricing policy in MoH facilities would have an important effect on the private sector, where low MoH prices would tend to discourage entry into the health market.

In the past several years the KHCFP has been focussing on managing a new partnership between MoH facilities and private health sector managed care programs. The most advanced of these relationships is between African Air Rescue (AAR) and some MoH hospitals, in which privately insured patients can be treated in government hospitals, with a reimbursement made by the insurer to the hospital under a type of managed care system. Several such schemes have been launched within the past year. It is likely that this arrangement will provide some significant source of income per patient for the MoH, but the overall numbers of privately insured patients is rather

small, and the proportion using public hospitals will be significant only in areas not served by private hospitals.

d. Local Tax Revenues

Most districts collect and retain small amounts of revenue from local taxes. In the Study Area the major taxes are the Business License Tax and the Tea Cess. The former is levied on individual businesses and is meant to pay for some municipal services, including health. In most of the Study Area districts, however, there are currently no municipal health services. The Tea Cess (also a smaller Maize Cess, etc.) is levied to pay for maintenance of roads used mainly by tea plantations, and most of the revenue is said to be collected from the large operations such as Brooke Bond. Whether these local tax revenues could be mobilised for health services is an unknown. Certainly taxes are a very sensitive issue at present, and even if the business tax is currently not being used on the intended health services, there is no reason to believe that any part of it would be left available for health. Raising the rate could be acceptable *after* a visible improvement in services has been demonstrated. The Tea Cess could in principle be applied to improve roads in tea-growing areas, and is a better possibility due to currently high tea production levels.

6.3 MANAGING EXPENDITURES

6.3.1 Through Reallocation of Resources

Kenya's per capita total health expenditure of $7.79 is close to the WHO's cost estimate for a basic essential package of services[6] of $10.49 for Kenya when adjusted for Kenya's disease pattern and intervention costs. The WHO estimate includes $7.07 for clinical services and $3.42 for public health. This implies that the present government and donor spending could pay for well more than the public health package, and total spending could pay for 74% of the total package.

However, a closer scrutiny of the health expenditure helps one to appreciate the situation in the Study Area.

First, a large proportion of the MoH budget is actually expended in Nairobi on KNH and administration. The actual amount available for a package of services at *district level* is considerably less, perhaps as little as $3 per capita according to the Study Team findings. Second, 72% of Kenya's total health expenditure goes to curative care, 20% to preventive care and 8% to community programmes (Table 6.6). Consequently, the highest levels of subsidy are to hospitals, followed by dispensaries, which are

6 Basic clinical services in this package include treatment of illnesses in children under age 5, treatment of TB, treatment of STDs, prenatal care and safe delivery, and limited basic care for adults. Basic public health interventions include vaccinations, de-worming, vector control, monitoring and surveillance, tobacco and alcohol control, health education and AIDS prevention

under-utilised[7]. Health centres, the most utilised public facility by the poor, receive the lowest subsidy per visit.

Three, not only do the hospitals receive the higher direct subsidy through the MoH budget, but the fee charged under cost-sharing covers a smaller proportion of the true cost of services at hospitals than at health centres. The rural poor, who use health centres in higher proportion, in effect subsidise the predominantly urban hospitals through their fees.[8] Table 6.12 shows that unit costs per hospital outpatient visit in the Study Area was about 3 times that for a health center visit, which in turn was 3 times that for a dispensary visit. This shows that overall costs could be decreased if more patients were treated in the peripheral facilities.

Table 6.12 Unit Costs of Facility Operation and Services in the Study Area

	Total Costs (A)	Total Visits (B)		Average OPD Visit Cost	Average Cost per Bed-Day
Health Centers					
Gucha	2,817,089				
Kericho	1,627,624				
Kisii	2,059,050				
Nyamira	1,663,626				
Bomet	1,624,712				
Average	1,958,420	30,348		67.8	
Dispensaries					
Gucha	651,398				
Kericho	419,763				
Kisii	737,636				
Nyamira	728,421				
Bomet	538,550				
Average	615,154	27,983		23.1	
District Hospitals					
	Total Recurrent Cost	**OPD visits**	**Bed-days**		
Kericho	57,754,938	119,690	48,350	218.2	654.5
Kisii	70,743,017	148,969	184,742	100.9	302.6
Nyamira	43,594,014	53,828	59,379	188.1	564.2
Average	**57,363,990**			**169.1**	**507.1**

Source: JICA Study Team Investigations

6.3.2 Through Improvement in Efficiency

A 1997 study of MoH hospital economics (Ref. 39) used an econometric modelling technique to determine the production function of Kenyan government hospitals. This research found that there were economies of scale to be derived from increased inputs,

7 3 million visits to 1555 dispensaries, compared to 15 million visits to 294 health centres.

8 The reverse is true at dispensaries where services are free of charge, but these are much less frequently visited, and in any case locally-organized community funds are now requiring payments even higher than health centres in some cases.

or in other words, the 36 public hospitals have been operating below their long-run efficiency level. More importantly, the short-term average efficiency of the hospitals is only about 70% because of a sub-optimum mix of inputs. If the optimum mix of inputs were being used, outputs (inpatients, outpatients, and operations) could be increased by a further 30% with the existing resources or alternatively, the present level of outputs could be produced at 30% lower cost. This finding in a sense contradicts the more widely held assumption that the hospitals are underfunded, yet it is not surprising to also learn that the hospitals are inefficient.

The reasons behind this finding were found to be mainly due to shortage of professional staff; poor combination of inputs; irregular or non-functional theatres and laboratories; transport problems; lack of, or poor distribution of drugs and medical supplies; and frequent breakdown or poor servicing of machines and equipment.

It is useful to compare MoH hospitals with NGO hospitals in terms of their funding of some of these key health inputs (Table 6.13).

Table 6.13 Major cost categories in NGO and MoH district hospitals (1995)

Cost Ratio to Total Costs	Average of 6 NGO hospitals	Average of 6 MoH district hospitals
Staff costs	38.9%	60.8%
Drugs/medical supplies	27.8%	26.0%
Other supplies	0.4%	0.3%
Food costs	8.6%	5.1%
Transport	3.9%	2.1%
Maintenance	6.7%	2.4%
Utilities	4.3%	2.6%
Other overheads	9.4%	1.1%
Total Cost Per Day	184.1 Kshs.	216.7 Kshs.
Total Cost Per Visit	142.1 Kshs.	79.2 Kshs.
Average quality score	52.5	33.6

Source: Adapted from Ref. 22

The Study Team's own field investigations were not able to determine the exact percentage of personnel costs in all district hospitals in the Study Area because certain key data were missing. However, taking into account recent salary increases, the present percentage appears to be around 87% of the current MoH hospital AIEs. This figure would be closer to 74% of total expenditures after adding in the value of drug kits consumed, and the FIF revenues used by the hospitals. When the drug costs are counted, the percentage of total costs used for "patient care" reaches only 20%.

The differences in resource allocation between MoH and NGO hospitals is striking, especially in staffing and maintenance, two areas which the efficiency study identified as problems. Tenwek, the highest-quality scoring hospital of those surveyed, spends 13.4% of its budget on maintenance, compared with an average of 2.4% for MoH district hospitals. It also employs only 0.37 Enrolled Nurses per 1000 bed days,

compared with 1.82 for the MoH hospitals. It is remarkable that the better quality NGO hospitals also provide inpatient care at lower cost than the MoH hospitals. This outcome is most likely due to the much higher nursing costs per bed day at MoH hospitals, due to higher staffing ratios, especially of Enrolled Nurses. The District hospitals have a lower cost per outpatient visit, however, due to a *lower* ratio of OPD nurses and doctors.

The authors of the efficiency study concluded that output and access could be improved at relatively little cost, and make recommendations for improving the level of the critical inputs. Among the more innovative ones are a system of incentive payments for staff, perhaps derived from increased patient fees, "cash-and-carry" drugs and supplies from zonal depots, self-maintenance of machinery and equipment rather than contracting out, and a health-card system for the poor, which would "attach" them to their nearest facility.

Hospital and perhaps Rural Health Facility efficiency could be improved by changing the mix of inputs. Inadequate funding of maintenance and misallocated staffing are probably two of the most critical areas. To achieve improvements it will be necessary to reallocate staff within the districts and raise staff productivity in the MoH hospitals, and raise the resources and management inputs to maintenance. It seems likely that by addressing these key areas, and also drugs and transport, the operating efficiency of facilities could be raised to a level that cost-sharing revenues might make up most of the remaining real gap.

6.4 PLANNING DIRECTIONS

6.4.1 New Management Requirements at District Level

All of the above findings and implications lead to certain implications for the JICA Project for Strengthening District Health Systems in the Western Part of Kenya. The central one is that as decentralisation is implemented under Health Sector Reform, the management responsibilities of the DHB, DHMB, and DHMT, will increase enormously.

As the system might be expected to evolve, the central MoH will be responsible for establishing general policies and performing certain regulatory functions, while the provinces and districts will have responsibility for maintaining the health of their populations. To accomplish this, they may be given most of the financial resources that they currently receive through Treasury budget votes as block grants, and the mandate to raise additional amounts locally. Existing health and support staff will be re-employed directly (by district and sub-district hospitals using some of the grant, while others will remain central MoH civil servants. It will be largely up to the districts to use these resources in a way that will have the maximum impact on health.

As has been shown in this chapter, the management challenges will include the re-allocation of resources and the mobilisation of additional resources. Strengthening preventive/promotive activities and the most cost-effective disease treatments would, in theory, have a large impact on reducing morbidity and mortality. The rural population \must be better served, which means strengthening the rural health facilities and increasing the number of effective community health programmes. Unless a significant amount of new additional resources can be generated, this would require a significant re-allocation of existing resources, away from hospitals and expensive curative activities.

Mobilising additional resources will require a significant improvement of the cost-sharing system, with regular systematic reviews of pricing and waiver policies. This in turn will need some system to assess the local ability to pay, the local competitive situation, and the improvement of collection and use of funds at all levels of health facilities. Local facility management boards will need to be strengthened and trained. Policies and plans must be developed to direct patients away from seeking the more costly hospital-based treatment, to less costly but equally effective treatment at health centres and dispensaries. The district health system must be considered by its managers as a whole, interlinked network, in which each element has an important role to play and must be supplied with resources and management support.

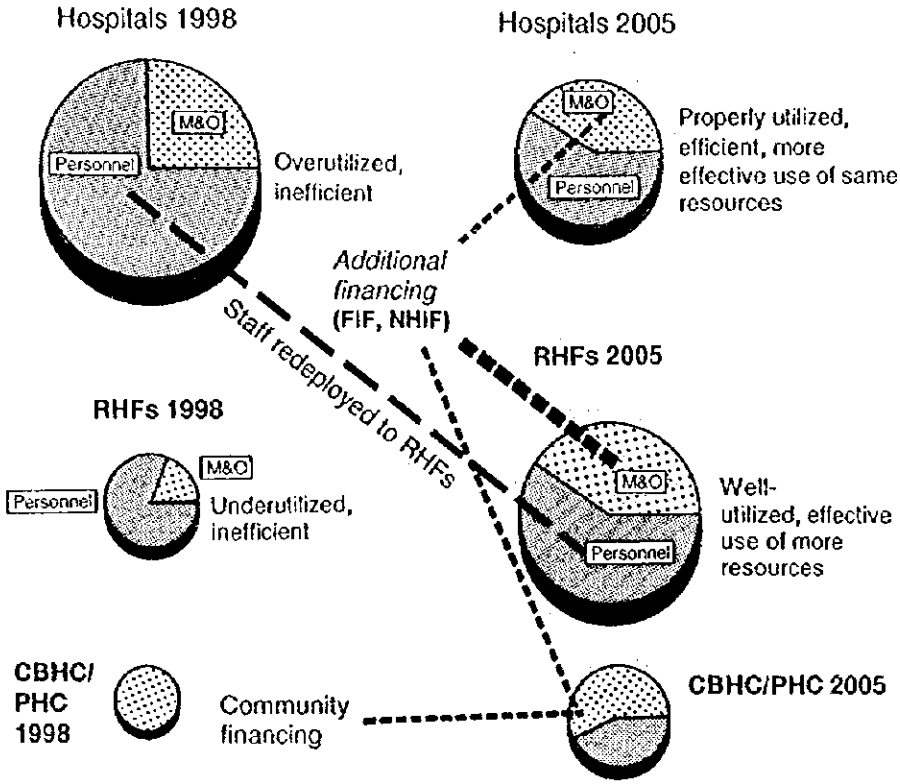
New revenue sources can be generated through innovative approaches like community pharmacies, prepayment schemes, and even local taxation. Local communities can play an important role in the critical effort to make the health centres and dispensaries more attractive places for trained staff to work. At the same time, encouraging community-based PHC approaches will reduce the workload at the hospitals, allowing more distribution of current hospital-based financial and human resources.

Because of the high degree of vested interests in maintaining good urban and curative services, to succeed in reallocating resources will require a high level of management and administrative skills which currently do not exist in the districts. The same requirements will exist for the mobilisation of additional resources through cost sharing and community approaches.

All of the above findings suggest that it will be possible to implement a major transition in the health services, following the guidelines of the Health Reform Agenda. Figure 2 shows the overall schema of reallocating resources and increasing supplemental revenues. This will bring about the transition of an underfunded and overcrowded health system relying on the district hospital to one that is adequately funded and relies more on the peripheral health facilities and community based health care.

Figure 2

"Incrementatl Increases in the recurrent budget are to be preferentially allocated to P/PHC"
Agenda for Health Sector Reform



The key elements of this transition are:

Shifting the balance of resource allocation from personnel to M&O expenditures.

Improving the quality and efficiency of services at the RHFs so more patients can be treated in a non-hospital setting, closer to their homes, at an earlier stage of their illness, and at lower cost.

This reallocation can fill about half the "financing gap". The other half can be reasonably expected to be filled through increased cost-sharing revenues, first by improving the efficiency of fee collections, and then by gradually and moderately increasing fees. This should be done on a decentralized basis appropriate to the economic conditions in the local area, and accompanied by an appropriate increase in the level of waivers for those who cannot pay the fees.

6.4.2 JICA Project Inputs

These requirements will be met under mostly through the Continuing Education Project Component, and the above requirements will define the training needed. Management skills will be needed in the areas of health planning and financing, and in financial management. Strategic and long-term planning approaches will be needed, which can be taught through short courses or seminars that address specific planning tasks.

Under the Strengthening District Health Systems Project Component, a long-term management advisor could also be assigned to help establish an appropriate management system model at district headquarters, and would direct project resources for achieving the new management objectives.

Chapter 7

Human Resources

7. HUMAN RESOURCES

7.1 INTRODUCTION

Data for this chapter came from two sources. Primary data were collected from a sample of 37 health facilities that were selected for this study. In no district, except Nyamira, was there a complete record of all staff employed by the MoH. The District Personnel Officers do not have complete up-to-date lists of staff employed in their Districts. This could be attributed to the prevailing deployment system at the district level. When new doctors or clinical officers are appointed to a District, they report to the District Medical Officer who assigns them to a posting. When new nurses arrive they report to the District Chief Nursing Officer and are given their assignments.

Secondary data about the staff employed in NGOs, missions and the private sector were from the database of the Development Solutions for Africa (DSA) that was produced for a national study on health personnel. The problems and limitations of these data are discussed in The Health Sector in Kenya: Health Personnel, Facilities, Education and Training (Schwarz, second edition 1996).

There are approximately 5,000 people employed in the health sector in the five study districts. The MoH employs 53%; the private sector 30%, and 18% work at an NGO or Mission health facility. Table 7.1 presents the total data for the five districts. It cannot be disaggregated into the five districts, because the database was established before the division of Kericho and Kisii districts into the current five districts.

Table 7.1 Summary Table - All Health Personnel in the Study Area

MAJOR CLASSIFICATION and Job Category	MOH 1997 (Adj.)	1994 NGO/MIS	1994 PRIV.	TOTAL 1997 (Est.)	Major Category Percentage
Medical/Dental Officers	24	42	154	220	4%
Clinical Officers	108	8	7	123	2%
Nurses	876	217	414	1,507	30%
Clinical Support					
Laboratory	115	37	67	219	
Pharmacy	18	9	38	65	
Radiography	20	6	22	48	
Other	72	0	0	72	
Sub-Total: Clinical Support	225	52	128	405	8%
Public Health	360	0	0	360	7%
Preventive & Promotive	139	0	0	139	3%
Administration	219	68	148	435	9%
Maintenance & Support	88	168	190	446	9%
Subordinate Staff	572	321	422	1,315	27%
Grand Total	2,611	876	1,464	4,951	100%
Percentage	53%	18%	30%	100%	

The sample of 37 health facilities selected for the study included 5 hospitals, 16 health centres and 16 dispensaries - drawn from the five districts. The sample was heavily biased in favour of hospital. For example, 82% of the health personnel in the sample work in hospitals compared to 55% nationally. Table 7.2 presents a summary of the data on personnel collected from the sample survey. It should be noted that only 9 out of the 16 health centres studied had even one clinical officer, while 100 were employed in the 5 hospitals. There were only 6 registered nurses in the health centres.

Table 7.2 Summary Table of Personnel in Sample Area

Cadre	Sub-Group	Facility Type						Sub-Total	Total	Percentage
		Hospitals		H/Centres		Dispensaries				
		No.	%	No.	%	No.	%			
Sub-Total: Doctors (DOC)		**26**	**2%**	**1**	**0%**			27	**27**	**1%**
Sub-Total: Clinical Officers (CLO)		**100**	**6%**	**9**	**3%**			109	**109**	**5%**
Nurses (NUR)										
	RNs	91	5%	6	2%			97		
	ENs	438	26%	86	31%	25	27%	549		
Sub-Total: Nurses		**529**	**31%**	**92**	**33%**	**25**	**27%**		**646**	**31%**
Clinical Support (CLS)										
	Lab.	95	6%	19	7%	2	2%	116		
	Phar.	11	1%					11		
	Rad.	19	1%					19		
	Other	50	3%					50		
Sub-Total: Clinical Support		**175**	**10%**	**19**	**7%**	**2**	**2%**		**196**	**9%**
Public Health (PHS)										
	PHOs	14	1%	6	2%	1	1%	21		
	PHTs	95	6%	28	10%	15	16%	138		
Sub-Total: Public Health		***109***	***6%***	***34***	***12%***	***16***	***17%***		***159***	***8%***
Preventive & Promotive (PPP)										
	FP	26	2%	14	5%	3	3%	43		
	Nutrition	29	2%	9	3%	2	2%	40		
	Other	17	1%					17		
Sub-Total: Preventive & Promotive		***72***	***4%***	***23***	***8%***	***5***	***5%***		***100***	***5%***
Administration (ADM)										
	Accts/CLOs	91	5%	27	10%	2	2%	120		
	MRO/Ts	17	1%	2	1%			19		
	Other	39	2%					39		
Sub-Total: Administration		**147**	**9%**	**29**	**10%**	**2**	**2%**		**178**	**9%**
Maintenance Support (MSP)										
	Watchmen	13	1%	10	4%	10	11%	33		
	Hou.,Coo.,Oth.	30	2%			1	1%	31		
	Drivers	39	2%	3	1%			42		
Sub-Total: Maintenance Support		**82**	**5%**	**13**	**5%**	**11**	**12%**		**106**	**5%**
Sub-Total: Subordinate Staff (SBS)		**457**	**27%**	**57**	**21%**	**31**	**34%**	545	**545**	**26%**
Total(All Staff)		**1,697**	**100%**	**277**	**100%**	**92**	**100%**		**2,068**	**100%**
Percentage (All Staff)		**82.1%**		**13.4%**		**4.5%**			**100%**	

7.2 NUMBER OF HUMAN RESOURCES

The numbers of MoH staff currently employed in the Study Area are shown in Table 7.3. The staff are grouped into nine major categories:

1) Medical /Dental Officers;
2) Clinical Officers;
3) Nurses;
4) Clinical support (Laboratory, Pharmacy, Radio, etc.);
5) Public Health (PHOs, PHTs);
6) Preventive and Promotive (FP., Nut., etc);
7) Administration (Accts., MRO/Ts, etc);
8) Maintenance and Support (Bldg./Ground, Cateress/cook, Driver, etc); and
9) Subordinate staff.

The total number of staff employed by the MoH in the five districts is 2,611. Clinical Officers account for 4% of the total and nurses, the largest group, for 34%.

The analysis of the staff situation is based on the application of national staffing norms proposed by Schwarz (1995/1996). These national norms (which include staff for the MoH headquarters, KMTC, KNH teaching hospital, etc), provide a general guide but need to be adapted to district and regional conditions before detailed human resource planning can be done. Table 7.4 shows the actual numbers and ratios of the major categories of health personnel in 1997, staffing norms, and resources required to meet the norms for the years 1997 and 2005. The right hand column shows the net annual increase for each category that is required to meet the national norms for the year 2005.

7.2.1 Personnel for Hospital Inpatient Services

The staffing norms for hospital inpatient services are based on the personnel required for 100 beds. These targets were set in collaboration with the MoH. The planning assumption is that 0.9 hospital beds per 1,000 population are adequate to meet the needs of the Kenyan population. Table 7.5 shows the hospital beds available in the five districts. With an estimated population of 2.6 million, the total 2,461 meets the required ratio for 1997. But, an additional 336 will be required by the year 2005.

Table 7.6 outlines the current situation in regard to personnel for hospital-based inpatient services and future requirements. Other hospital-based staff provide services for outpatients and will be considered below. It should be noted again that the staffing norms used, especially for doctors 4.4 per 100 beds, might be high for district services. Nonetheless, there is a shortfall of 10 clinical officers and 229 nurses. On the contrary, there is an excess of laboratory staff. In 1997, the overall

shortage of all cadres for hospital inpatient services is 11% or 313 out of 3,032 (2,729 + 313).

Table 7.3 MOH Personnel (1997 adjusted Figure) in Study Area

MAJOR CLASSIFICATION and Job Category	Kisii 1997 (Adj.)	Gucha 1997 (Adj.)	Nyamira *1997 (Adj.)**	Kericho 1997 (Adj.)	Bomet 1997 (Adj.)	Total 1997 (Adj.)	Percentage
Medical/Dental Officers							
Medical Officers	10	1	3	6	1	21	
Dental Officers	1	0	0	2	0	3	
Sub-Total: Med./Den.	**11**	**1**	**3**	**8**	**1**	**24**	**1%**
Clinical Officers	**36**	**3**	**18**	**46**	**5**	**108**	**4%**
Nurses	**283**	**36**	**195**	*268*	**94**	**876**	**34%**
Clinical Support							
Laboratory	26	4	25	47	13	115	
Pharmacy	4	1	1	9	3	18	
Radiography	8	0	4	7	1	20	
Other	28	0	11	29	4	72	
Sub-Total: Clinical Support	**66**	**5**	**41**	**92**	**21**	**225**	**9%**
Public Health	**50**	**33**	*75*	*112*	*90*	**360**	**14%**
Preventive & Promotive							
Family Planning	12	6	16	14	14	62	
Nutrition	11	6	12	21	9	59	
Other	8	1	1	3	5	18	
Sub-Total: Preventive & Promotive	**31**	**13**	*29*	*38*	*28*	**139**	**5%**
Administration							
Accts/Clerical	54	6	46	33	7	146	
MRO/Ts	8	2	6	14	5	33	
Other	12	1	16	6	5	40	
Sub-Total: Administration	**72**	**9**	**68**	**53**	**17**	**219**	**8%**
Maintenance & Support							
Bldgs/Grounds	10	3	0	0	0	13	
Cateress/Cook	0	0	3	0	0	3	
Driver	22	2	8	10	6	48	
Other	9	0	8	5	2	24	
Sub-Total: Maintenance & Support	**41**	**5**	**19**	**15**	**8**	**88**	**3%**
Subordinate Staff	**258**	**35**	147	**103**	**29**	**572**	**22%**
Grand Total	**848**	**140**	595	**735**	**293**	**2,611**	**100%**
Percentage	**32%**	**5%**	23%	**28%**	**4%**	**100%**	

Table 7.4: Staffing Ratios, Resources and Targets for Years 1997 and 2005

All Health Sector Personnel CATEGORIES and Major Personnel Classifications		Actual Ratios in 1997	Ratios Required to Meet Kenya Norms (per 100 beds) Current Year 1997	Ratios Required to Meet Kenya Norms (per 100 beds) Target Year 2005	Actual Number in 1997	Number Required to Meet Norms for Kenya Current Year 1997	Number Required to Meet Norms for Kenya Target Year 2005	Additional Net Resources Required (Temporary Oversupply) In Year 1997	Additional Net Resources Required (Temporary Oversupply) By the Year 2005	Annual Net Increase Required
Population:					2,559,500	2,559,500	3,307,700			
Number of Hospital Beds:					2,641	2,559	2,977	(82)	336	42
Hospital beds per 1,000 Population:		1.0	1	0.9						
TOTAL KEY HEALTH PERSONNEL (KHP)	Doctors	8	12	13	216	308	413	92	*197*	*25*
	Dentists	0.2	1.6	2	4	41	66	37	*62*	*8*
	Clinical Officers	4.8	9	14	123	222	453	99	*330*	*41*
	Nurses	59	88	93	1,507	2,261	3,089	754	*1,582*	*198*
TOTAL KHP	KHP TOTAL	73	112	123	1,850	2,832	4,021	982	*2,171*	*272*
TOTAL CLINICAL SUPPORT STAFF (CLS)	Laboratory	9	8	9	219	193	309	-26	*90*	*11*
	Pharmacy	3	7	9	65	180	294	115	*229*	*29*
	Radiology	2	2	2	48	53	74	7	*28*	*4*
	Therapy	2	3	3	48	66	93	18	*45*	*6*
	Technology Support	1	2	2	24	39	69	15	*45*	*6*
TOTAL CLS	CLS TOTAL	17	22	25	404	531	839	129	*437*	*56*
PUBLIC HEALTH & PREVENTIVE/PROMOTIVE	PHO/PHT	14.1	16	22	360	410	728	50	368	46
	Nut., FP, H. ed. etc.	3.6	6	7	139	144	219	52	127	16
TOTAL PH & P/P	PH & P/P TOTAL	18	22	29	499	554	947	102	495	62
TOTAL ADMINISTRATION and SUPPORT	Administration	17	22	29	435	555	744	120	309	*39*
	Maint. & Support	17	19	24	446	475	625	20	170	*21*
	Subordinate Staff	51	91	98	1,316	2,324	2,501	1,008	1,185	*148*
TOTAL AMS	AMS TOTAL	85	132	151	2,197	3,354	3,870	1,148	1,664	*208*
*TOTAL Staff**					4,950			2,361	4,767	*598*

*Note: The total of Inpatient and Outpatient is 50 less than the total for all personnel. This is due to rounding of figures in various parts of the working spreadsheets.

Table 7.5: Hospitals and Hospital beds in the Study Area

CODE	HEALTH FACILITY	TYPE	AGENCY	DISTRICT	DIVISION	TOWN	BEDS			MOH
							GEN.	MAT	COTS	TOTAL
KISII DISTRICT										
1265	Kisii District Hosp.	HOS	MOH	Kisii	Kisii Municipal	Kisii	248			248
1266	Tabaka Mission Hosp.	HOS	NGO	Kisii	Bosongo	Tabaka Mkt.	300			300
1264	Christ	HOS	PRI	Kisii		Kisii	220		10	230
Sub-Total: Kisii District		3					768	0	10	778
NYAMIRA DISTRICT										
	ST. Joseph's Hosp.Nyansiongo	HOS	PRI	Nyamira		Sotik	52			52
1512	Nyamira District Hosp.	HOS	MOH	Nyamira	Nyamira	Nyamira	250			250
Sub-Total: Nyamira District		2					302	0	0	302
KERICHO DISTRICT										
1666	Kipchimchim Miss. Hosp.	HOS	NGO	Kericho	Belgut	Kericho	60			60
1674	St.Francis Hosp. (Ker.)	HOS	PRI	Kericho	Kipkelion	Kipkelion	40			40
1676	Central Brook Bond Hosp.	HOS	PRIL	Kericho	Belgut	Kericho	67			67
1677	Chemugundai Hopt.	HOS	MOH	Kericho	Belgut	Kericho	76		14	90
1680	Kericho Dist. Hosp.	HOS	MOH	Kericho	Belgut	Kericho Town	260			260
1681	Litein (AIC) HOSP.	HOS	NGO	Kericho	Buret	Litein	69			69
1682	Londiani Sub-Dist. Hosp.	HOS	MOH	Kericho	Londiani	Londiani	39	10	1	50
3448	St. Leonard Hosp.	HOS	PRI	Kericho	Belgut	Belgut	124			124
6176	Kapkatet Sub. D. Hosp.	HOS	MOH	Kericho	Buret	Kapkatet	124	16	16	156
Sub-Total: Kericho District		9					859	26	31	916
BOMET DISTRICT										
1624	Longisa Hosp*.	HOS	MOH	Bomet	Longisa	Longisa				0
	Tenwek (AGC) Hosp.	HOS	PRI	Bomet			299		50	349
1679	Kaplong Catholic Hosp.	HOS	NGO	Bomet	Konoin	Sotik	220		51	271
Sub-Total: Bomet District		3					519	0	101	620
GUCHA DISTRICT										
1261	Gucha District Hosp**.	HOS	MOH	Gucha	Ogembo	Ogembo	25			25
Sub-Total:Gucha District		1					25	0	0	25
Grand Total		18					2,473	26	142	2,641

NOTE:

*Longisa Hospital: Buildings and other physical facilities for 100 beds are present. Constraints to operation are water, staff & suppliers.

** Gucha District Hospital: Ogembo H/C now has 25 beds & is planned to be upgraded to a hospital with 100 beds

Table 7.6: Staffing Norms and Targets for Hospital Inpatient Services

Hospital Inpatient CATEGORIES and Major Personnel Classifications		Actual Ratios in 1997	Ratios Required to Meet Kenya Norms (per 100 beds) Current Year 1997	Ratios Required to Meet Kenya Norms (per 100 beds) Target Year 2005	Actual Number in 1997	Number Required to Meet Norms for Kenya Current Year 1997	Number Required to Meet Norms for Kenya Target Year 2005	Additional Net Resources Required (Temporary Oversupply) In Year 1997	Additional Net Resources Required (Temporary Oversupply) By the Year 2005	Annual Net Increase Required
Population:					2,559,500	2,559,500	3,307,700			
Number of Hospital Beds:					2,641	2,559	2,977	(82)	336	42
Hospital Beds per 1,000 population:		1.0	1.0	0.9						
KEY HEALTH PERSONNEL	Doctors	**3.5**	4.4	5	**92**	116	149	25	*57*	*7*
	Clinical Officers	**1.7**	2.1	3	**45**	55	89	10	*44*	*6*
	Nurses	**33.3**	42	46	**880**	1,109	1,369	229	*489*	*61*
CLINICAL SUPPORT STAFF	Laboratory	**3.0**	1.5	1.5	**79**	40	45	-39	*-34*	*-4*
	Pharmacy	**0.7**	1	1	**20**	26	30	7	*10*	*1*
	Radiology	**1.7**	2	2.5	**46**	53	74	7	*28*	*4*
	Therapy	**1.5**	1.5	2	**40**	40	60	0	*20*	*2*
	Technology Support	**0.7**	1	1.2	**18**	26	36	8	*18*	*2*
PREVENTIVE/PROMOTIVE	Nut., FP, Head, etc.	**11.0**	0.6	1.25	**30**	16	37	-14	*7*	*15*
ADMINISTRATION MAINTENANCE and SUPPORT	Administration	**12.5**	12	14	**330**	317	417	-13	*87*	*11*
	Maint. & Support	**10.1**	11	13	**267**	291	387	24	*120*	*15*
	Subordinate Staff	**33.4**	36	41	**882**	951	1,221	69	*339*	*42*
TOTAL Staff					**2,729**			313	*1,185*	*162*

7.2.2 Personnel for Outpatient and Community Services

The staffing norms for outpatient and community care are based on the estimated needs for 100,000 population. The outpatient services of hospitals are included with the services provided in health centres and dispensaries. For these calculations it is taken that 15% of hospital staff time is spent on outpatient care. Table 7.7 shows the personnel required for 1997 and for 2005 together with the net annual increase required.

The table shows that there is a current deficit of 88 clinical officers, 525 nurses and 108 pharmaceutical personnel. The deficit of 68 doctors, based on a national norm, is as indicated previously, high for rural districts.

The overall shortage of all cadres for outpatient and community services is 2,059 out of 4,232 i.e. 48%. This deficit is much greater than for the hospital inpatient services (11%). It is unlikely that the annual increases required to bring the numbers up to the national norms can be met in the near future.

In general, the sample survey shows that the shortages are most severe in the rural health facilities. The shortage of appropriately trained staff has always been one of the main constraints in developing adequate health services. Over time, the reasons for staff shortages have varied. The demand for staff has increased with the number of health facilities developed, and this has in turn, been caused by rapid population growth. This means that even to maintain the health worker/population ratio, let alone improve on it, the number of health workers must also be doubled in 17 years.

On the other hand, it must be noted that there are also a number of qualified nurses who are surplus to their training hospital requirements and are currently unemployed because their training program conducted by the Missions are not recognised by the MoH.

To address the problem of shortage of staff, training facilities are steadily being developed in Kenya and in the Study Area. The Kenya Medical Training College (KMTC) runs the majority of the training programmes while mission hospitals undertake some training for nurses, pharmacists and senior nurses. A summary of the training facilities, including those of Missions, in the Study Area is given in Table 7.8.

Table 7.7 Staffing Norms and Targets for Outpatient Services (all health facilities) and Community Professional Personnel

Out-Patient Facilities and Community-Based Professionals (hospital outpatient, H/C, dispensaries, clinics) CATEGORIES and Major Personnel Classifications		Actual Ration in 1997	Ratios Required to Meet Kenya Norms (per 100,000 pop.) Current Year 1997	Ratios Required to Meet Kenya Norms (per 100,000 pop.) Target Year 2005	Actual Number in 1997	Number Required to Meet Norms for Kenya Current Year 1997	Number Required to Meet Norms for Kenya Target Year 2005	Additional Net Resources Required (Temporary Oversupply) In Year 1997	Additional Net Resources Required (Temporary Oversupply) By the Year 2005	Annual Net Increase Required
Population:					2,559,500	2,559,500	3,307,700			
KEY HEALTH PERSONNEL	Doctors	4.9	7.5	8	124	192	265	68	*140*	*18*
	Dentists	0.2	1.6	2	4	41	66	37	*62*	*8*
	Clinical Officers	3.0	6.5	11	78	166	364	88	*286*	*36*
	Nurses	24.5	45	52	627	1,152	1,720	525	*1,093*	*137*
CLINICAL SUPPORT STAFF	Laboratory	5.5	6.0	8	140	154	265	14	*125*	*16*
	Pharmacy	1.8	6.0	8	46	154	265	108	*219*	*27*
	Radiology	0.0	d in Inpatient							
	Therapy	0.3	1.0	1	8	26	33	18	*25*	*3*
	Technology Support	0.2	0.5	1	6	13	33	7	*27*	*3*
PUBLIC HEALTH & PREVENTIVE/PROMOTIVE	PHO/PHT	14.1	16	22	360	410	728	50	*368*	*46*
	Nut., FP, Head, etc.	24	5	5.5	62	128	182	66	*120*	*15*
ADMINISTRATION MAINTENANCE and SUPPORT	Administration	4.0	9	11	105	238	327	133	*222*	*28*
	Maint. & Support	6.8	7	8	179	185	238	6	*59*	*7*
	Subordinate Staff	16.4	52	43	434	1,373	1,280	939	*846*	*106*
TOTAL Staff					2,173			2,059	*3,592*	*450*

Table 7.8 Training Institutions in the Study Area

Name of Institution	Sector	Programmes
MTC Kisii	GOK	Enrolled Community Health Nursing Certificate (2.1/2 years)
Tenwek School of Nursing	Mission	Enrolled Community Health Nursing Certificate (2.1/2 years); Community Health Workers
Kaplong School of Nursing	Mission	Kenya Registered Community Health Nursing Basic Diploma (3.1/2 years)
Chulaimbo Rural Health Training Centre (RHTC) (just outside the Study Area in Kisumu District)	GOK	Community Health Experience for: KRCHNs from Kisumu MTC (4 - 6 weeks) Clinical Officers from Nairobi, Nakuru & Mombasa (6 - 8 weeks)
Nduru RHDC	GOK	Community Health Experience for ECHN from MTC Kisii (4 - 6 weeks)
Marani RHDC	GOK	Community Health Experience for ECHN from MTC Kisii (4 - 6 weeks)

One of the 25 KMTC campuses is in Kisii. It trains Kenya Enrolled Community Nurses. It is situated on its own compound, near the Kisii District Hospital. It has ten tutors and an annual intake of 30 students, and an output, after two and a half years, of 20 KECNs. The school has a classroom for 20 students, good equipment and teaching aids, and a small well-stocked library. There is good residential accommodation for 96 students in single rooms. Practical nursing is done in the Kisii hospital and study of community health at two Rural Health Demonstration Units at Marani and Nduru. The management of the school comes directly under the KMTC and not the DHMT.

7.3 COMPETENCY OF HUMAN RESOURCES

It is clear that the health care provided in the Districts falls short of the standards based on good medical practice. Although no quantitative assessment was undertaken, experienced practitioners observed that clinical histories and physical examination were seldom undertaken and multiple prescriptions were the rule. An indirect assessment of quality of care in many of the rural facilities is afforded by the relatively small numbers of patients attending and the large numbers that bypass them and go straight to the overcrowded District Hospital.

One reason for the decline in quality of care could be the limited supervisory visits, particularly to rural health facilities. DHMT members are unable to conduct regular visits due to lack of either transport or fuel, or to broken down vehicles. The delivery of gas cylinders (for refrigerators) and drug kits is somewhat irregular, and the number of units that have to be visited on one trip limits the time available at any one unit, thus prohibiting effective supervision. If and when supervision is done, checklists are not used.

Another reason for the gap in capacities among some district health staff is the limited opportunities for continuing education (CE). Furthermore, a national master plan for CE is yet to be produced. The current district CE programmes are still dominated by the dictates of the national vertical programmes - KEPI, MCH/FP, CDD, ARI, etc. There is no planned programme of continuing education for all staff in any of the Districts, and those in the rural health facilities are the most neglected.

To confront the issue of competency of staff and all the problems related to health personnel, the MoH established a Human Resource Planning and Development Department. The Department, together with consultants, is conducting a staff analysis, developing staffing norms, identifying staffing needs, and aiming at producing a Master Plan for Human Resource Development and Management by the end of 1998.

A new cadre of District Continuing Education Officers (DCEOs) was created and posted to 22 districts. Kericho is the only district in the Study Area that has a DCEO. The strategy is to conduct short courses for technical upgrading of health sector staff at all levels including:

- training seminars on management and PHC;
- development of libraries in health facilities; and
- development of health learning materials.

The critical role of continuing education is also recognised in Kenya's Health Policy Framework (1994). It recommends decentralisation of CE to the districts. Elements of the strategies to be used include: "continuing education units with full time staff in each district".

Recently a review of the health staff led to an adjustment of intake for various training programmes - e.g. the intake for clinical officers was increased. A District that wanted to have a two-day seminar for key members of the newly appointed Health Centre Management Boards received assistance from the District cost-sharing funds.

7.4 PLANNING DIRECTION

7.4.1 Upgrading of Supervision of Rural Facilities and Development of a Continuing Education Programme.

It is clear that though many rural health facilities need maintenance and rehabilitation, staff housing, renewed and improved equipment, additional staff, and a regular supply of drugs, the underlying problem lies with the existing staff. Reorientation, re-motivation, guidance and support for the rural health facilities cannot be instituted as a single intervention, but these are probably the most critical inputs if better quality health services are to be provided.

While the recruitment and basic training of health staff is currently a MoH headquarter's function, the responsibility for management and continuing education of staff lies with the District. What is proposed is a radical upgrading of the standard supervisory visits and increased opportunities such as workshops for appropriate continuing education for all rural health facilities and for all categories of personnel. Run properly, these District workshops can do more than just increase knowledge and skill. They can be the venues for providing guidance and support, too.

At the moment there are no specific health training facilities available. Each district has used hotels, mission centres, or various technical training centres for the few courses that have been held. One or two Continuing Education Centres, along the lines of the Rural Health Training Centres, for the five Districts of the Study Area should be considered. Basing such a facility on a well functioning health centre may be more appropriate than establishing it in a town at the district hospital. Such centres should be autonomous, with their own management boards and financial control. The back up of DCEOs with a full-time health/medical educator would assist in establishing the centre.

7.4.2 Strengthening Health Management in the District

The *Health Policy Framework (*1994) calls for decentralisation of many management and administrative functions, currently undertaken by the MoH headquarters, to the district. In this regard, Facility Management Boards/Committees are being established for health centres and dispensaries. Communities in some areas have established Village Health Committees. In addition to these new community/public responsibilities, the role of professional/technical management is increasing - particularly the role of the District Health Management Teams (DHMTs).

To meet these increasing needs for management throughout the districts, further training and continuing support is required. The establishment of an appropriate local health management training facility should be considered.

7.4.3 Community-Based Health Care

Traditional practitioners and birth attendants have always been there and more recently communities, guided by health workers, have established systems of training and supervising their own representatives - Community Health Workers (CHWs) - to provide basic health care. In the sample survey of 37 facilities, 135 community workers - community health workers (CHWs), traditional birth attendants (TBAs), and community-based drug distributors (CBDDs) - were reported as working with eight facilities. Tenwek hospital has an extensive community programme extending from Bomet into neighbouring districts. Kaplong, Litein and Kericho hospitals have trained community health workers. Bomet has a Forum for agencies working with community-based workers. In other areas, the Bamako Initiative

helped establish community pharmacies. However, there is no comprehensive data about community-based workers and the services they provide.

To assist and coordinate existing community activities an interdisciplinary Community-based Core Support Team could be established. When communities are ready it could assist in the orientation and training of various community-based workers - community health workers, traditional birth attendants, community drug distributors, local environmental artisans, etc. For such training appropriate curricula and learning materials would have to be collected and/or developed.

The Health Sector Reform 'recognises the need to mobilise the community and provide it with a real stake in the health service provision'. Recognition of the fact that there are, and for a long time will continue to be, a shortage of staff for the rural health facilities emphasises the importance of developing community-based health services.

Chapter 8

Health Services: The Standards and Realities

8. HEALTH SERVICES: THE STANDARDS AND REALITIES

8.1 THE STANDARD HEALTH PACKAGE

According to the source and venue, health services can be classified into three groups. The *first group* includes those services that are provided in the community by traditional health practitioners and traditional birth attendants. The *second group* refers to services extended by the licensed health staff in the communities such as the following:

- Outreach activities organised by PHS and PPP[1]; in some cases, nurses and clinical officers conduct home visits;
- Visits to schools and food establishment extended by members of the DHMT; and
- Mobile Clinics extended by the NGOs and government[2] (Table 8.1).

Table 8.1 Available Mobile Clinic Services in the Study Area

Service Provider	District	Areas Served	Services Offered	Frequency
Association of Physically Disabled of Kenya (APDK)	Kisii and Gucha	Ogembo (Gucha) Nyamache (Gucha) Marani (Kisii) Samete (Kisii) South Mugirango (Gucha)	curative MCH/FP Awareness, promotion & health education	2 times a month for each place
Itierrio Nursing and Maternity Home	Kisii	Bogitaa Musesi Mititi	MCH/FP curative health education	1-2 times a month
Kipchimchim Health Centre	Kericho	Kapsorok Ainamoi Koiyabi Chepcholget	curative immunisation	2 times a week
Tenwek Hospital	Bomet	Bomet Central Siongiroi Chepcholget	antenatal care FP immunisation health education	2 times a week

Source: JICA Study Team. Field Survey, 1997.

The *third group* of services are those provided by licensed staff in authorised health facilities. This would be the focus of discussion for this chapter.

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[1] PHS (Public Health Staff: Public Health Officers and Public Health Technicians) and PPP (Personnel for Preventive and Promotive services including those responsible for Family Planning, Nutrition)

[2] According to AMREF, the annual cost of maintenance per vehicle for mobile clinic is about $7,000 to $14,000, an amount t that could hardly be sustained by public services.

Table 8.2 summarises the standard health package that should be available at dispensaries, health centres and district hospitals. The Study Team proposes a host of services that could be included in this standard package (Appendices A6 and A7).

The dispensaries are staffed by 5-11 enrolled community nurses, subordinate staff, public health technician, and/or watchman. They are mandated to provide basic curative outpatient services, environmental health services, and other primary health care activities. Type 1 dispensaries are to serve a catchment population of up to 10,000 whereas Type 2 of up to 15,000. The three-roomed health facility and basic treatment facilities do not admit patients. Also, laboratory tests are not conducted in dispensaries.

On the other hand, health centres are expected to provide, on top of primary services, the following: nutrition, maternity, limited oral health, minor surgery, laboratory, and inpatient (12 hours maximum length of stay before the patient is referred). The 31-46 staff are responsible for managing consultation and treatment rooms, laboratory, minor surgery, pharmacy, sterilisation, delivery, kitchen, and laundry facilities. There would be about 18-24 beds available for maternity and other cases. Staff houses would be provided. The catchment population for Type 1 is from 50,000-70,000 while that for Type 2 is from 50,000-100,000.

Table 8.2 Standard Services For Each Facility Category

Facility Category	Essential Package (Out patient)	Laboratory service	Inpatient service	Specialist care
Dispensary	PHC	-	-	-
Health Centre	PHC Ante-natal Care, FP, CWC Immunisation	Blood slide for malaria Simple microscopy (stool and urine) Haemoglobin estimation	MATERNITY 24 Hour EMERGENCY	-
District hospital	PHC Ante-natal Care, FP (inclusive of Tubal Ligation), CWC Immunisation	Blood: Smear for parasites, Complete blood cell count, ESR, Haemoglobin/ haematocrit. Blood chemistry: Sugar Culture and sensitivity tests Blood group and X-match Radiological : Plain X-ray, Intravenous Pyelography, Ultrasound Serology: Widal, Brucella Screening: HIV, VDRL Sputum: smear Biopsy specimens taken	Range of inpatient care Theatre services	YES

The sub-district and district hospitals are designed to provide inpatient services on a longer term and to act as a referral centre for internal medicine, obstetrics/gynaecology, surgical services (limited capacity for sub-district and full services for district), dentistry, psychiatry, ophthalmology, otorhinolaryngology, and forensic medicine. They have operation theatre, intensive care, and radiographic facilities. They are

capable of conducting more sophisticated laboratory examination such as blood chemistry, serology, screening for HIV & VDRL, sputum smear, blood typing and cross-matching. The 80-150 beds in a sub-district hospital are expected to serve a population of 100,000-250,000. The 150-300 beds in a district hospital cater to 250,000-1,000,000 residents.

Although not included in Table 8.2, provincial hospitals were established and operated by the government to provide the entire spectrum of primary, secondary, tertiary, and specialised health services. They accept referrals from district hospitals, particularly for diagnostic and therapeutic care that require highly qualified specialists in various disciplines. They have from 250 to 800 beds to cater to a catchment population of 1 to 2 million.

The Kenyatta National Hospital is a national referral and teaching hospital providing mainly tertiary and specialised services. It is also the centre for clinical research. There are other specialised hospitals in the country such as the Spinal Injuries Hospital, Mental Health Hospitals, Infectious Diseases Hospitals (inclusive of Tuberculosis and Leprosy Hospitals), and Maternity Hospitals. The physical facilities, staffing norm, and number of beds vary according to the specialisation of the hospital.

8.2 THE REALITIES

A survey of public health facilities in the Study Area revealed that only 13% have the capacity to provide the full range of essential health package (Table 8.3). Among the district hospitals (as a newly established district, Gucha still does not have a hospital), only the Kisii DH can offer the full range of package. It seems Bomet and Kericho are the worst off districts because none among the facilities surveyed could provide the full range.

Table 8.3 Proportion of Facilities Providing Full Range of Essential Package at the Out Patient

Facility Type	Bomet	Gucha	Kericho	Kisii	Nyamira
Dispensary	0/3	0/3	0/4	0/3	1/3 (Magombo)
Health Centres	0/3	1/3 (Kenyenya)	0/6	1/3 (Masimba)	1/3 (Keroka)
District hospital	0/1	-	0/1	1/1	0/1

Source: JICA Study Team
Note: The denominator is the total number of facilities included in the survey.

8.2.1 Dispensaries

There is so much variation in the availability of health goods and services among dispensaries (Table 8.4). Dispensaries F and G are seen to provide most services whereas dispensaries D and E could not provide even basic preventive services. Although not included in the essential package, simple laboratory examinations are available in three dispensaries.

Table 8.4 Health Services and Goods Actually Available at Dispensaries (N=7)

Health services at Dispensary	A	B	C	D	E	F	G
Anti-malaria, chloroquine	O	O	O	O	O	O	O
quinine			O	O			O
other drugs						O	O
Guideline of diagnosis of ARI	O	O				O	O
Immunisation	O	O				O	O
Oral rehydration salt	O	O	O	O	O	O	O
Growth Monitoring		O				O	O
Antenatal Care	O	O	O			O	O
Iron Supplement	O	O		O	O	O	O
Family Planning	O	O				O	O
Any laboratory work			O(a)			O(b)	O(c)
Minor surgery	O		O	O	O	O	O

Source: JICA Study Team 1997
(a) urine analysis (b) haemoglobin, haematocrit, urine analysis
(c) malaria blood smear, stool analysis, Haemoglobin, haematocrit, urine analysis, AFB

a. To Control Malaria

All the dispensaries are stocked with anti-malaria drugs. However, it seems they have not received SP, the recent drug of choice.

When it comes to diagnosis, health staff depend on the clinical presentation only. Realising the high prevalence of malaria, it might be worthwhile to consider a system of improving the clinical skills of dispensary staff or providing a system to do microscopic examination.

When it comes to prevention, the public health technicians need to coordinate with the other health staff on the timing of their public education and environmental campaigns against malaria.

b. To Protect Children's Health

All dispensaries carry oral rehydration salts (ORS) in their stock. The staff also provide instructions on the use of ORS. It is surprising that not all facilities have the guidelines on management of ARI, can provide immunisation and monitor growth of children. While weights are sometimes taken, heights are not measured. Developmental assessment was done only at one dispensary.

c. To Reduce Maternal Ill-Health and Excess Fertility

Iron supplements were found to be available in most facilities; however, there is no information on the number of recipients.

Only about half of the dispensaries do provide antenatal care and family planning services. Antenatal care includes measurement of weight, blood pressure and foetal heart rate. The family planning methods that are being promoted are the use of condoms, taking of oral contraceptive pills, and injection of Depo-Provera. Only one dispensary provided intrauterine device.

8.2.2 Health Centres

From among the twelve facilities (Table 8.5), not a single health centre can offer all the health services and goods. Health centre A provides all services except those related to family planning because a missionary group runs it.

Table 8.5 Health Services and Goods Actually Available at Health Centres (N=12)

Services and Goods	A	B	C	D	E	F	G	H	I	J	K	L
Anti-malaria	O	O	O	O	O	O	O	O	O	O	O	O
Quinine	O		O	O				O	O	O		O
others	O	O	O	O	O			O	O	O		O
Malaria blood smear	O		O	O			O		O	O		O
Guideline of diagnosis of	O		O		O	O	O			O		O
Oral antibiotics	O	O	O	O	O	O	O	O	O	O	O	O
Injectable antibiotics		O	O	O	O	O	O	O	O	O	O	O
Immunisation	O	O	O	O	O	O	O	O	O	O	O	O
Oral Rehydration Salt	O	O	O	O	O	O	O	O	O	O	O	O
Intravenous fluid therapy	O			O			O		O			
Stool analysis	O		O	O	O		O		O			O
Growth monitoring-	O	O	O	O	O	O	O	O	O	O	O	O
height	O		O						O			
development	O		O	O	O	O	O		O	O	O	O
Antenatal care	O	O	O	O	O	O	O	O	O	O	O	O
Iron supplement	O	O	O	O	O	O	O	O	O	O	O	O
Delivery	O	O	O	O	O		O		O	O		O
Family planning		O	O	O	O	O	O	O	O	O	O	O
condom		O	O	O	O	O	O	O	O	O	O	
Oral			O	O	O	O	O	O	O	O	O	
injectable Depo-			O	O	O	O	O	O	O	O	O	
Intra-uterine					O	O	O	O	O	O		
Inpatient's care	O			O			O		O	O		O
Urine analysis	O		O	O								O
Haemoglobin/haematocri	O		O	O								O

Source: JICA Study Team 1997

Although it is mandated to provide in-patient services, only half of the health centres do maintain beds for patients requiring observation or care within 24 hours. While the bed occupancy rate goes up during Malaria season, the availability of staff and supplies reflect its bed occupancy rate in the rest of season.

The availability of preventive services depends upon the availability of staff, equipment and supplies.

a. To Control Malaria

Like the dispensaries, all health centres have anti-malaria drugs but not the appropriate one. As far as their laboratory capabilities are concerned, only 7 of the 12 centres can perform blood smear examination.

b. To Protect Health of Children

All health centres have oral antibiotics that could be used for children with ARI. However, only about 60% have the guideline for diagnosis of ARI.

Although some health staff would complain of occasional lack of fuel for the cold chain, all the health centres do have the capacity to provide vaccinations.

There is no problem on the availability of oral rehydration salts. However, only five of the health centres can provide intravenous fluid therapy to severely dehydrated children needing immediate care. Stool analysis could assist the diagnosis only in 7 facilities where they could be performed.

Weights of children can be measured in all health centres. In two-thirds of the facilities, developmental milestones are monitored, too.

c. To Reduce Maternal Ill-Health and Excess Fertility

It is apparent that the health centres can have definitive contribution in reducing maternal ill-health because of availability of antenatal care and iron supplements. However, delivery of babies can not be done in one-third of the facilities surveyed either because of lack of equipment or supplies.

Except for the one owned by a missionary group, all centres provide various types of goods and services for controlling excess fertility. But, no facility can do permanent intervention such as tubal ligation. Intra-uterine devices can be inserted and its patency monitored in only 6 of the 12 centres.

8.2.3 District Hospitals

The review of 6 hospitals in the Study Area clearly showed that the hospitals have the services to manage complicated cases of malaria, ARI, diarrhoea, and pregnancy (Table 8.6).

They are the primary health facilities in keeping the lid on emerging and re-emerging diseases. They have the diagnostic tests for HIV. They are designated as the focal facility for diagnosis and treatment of tuberculosis, too, although Nyamira did seem to have some problems at the time of the survey.

The hospitals have varying capacities to handle both major and minor surgeries. Support systems, such as blood banking, are also in place.

However, a few essential health services and goods in the survey checklist are not available, specifically:

- SP is not yet the drug of choice for all cases of malaria;

- Guidelines for the diagnosis of ARI are not being applied in all the district hospitals;
- Oral rehydration salt are not in the district hospitals in Kisii and Nyamira;
- Monitoring of children's height is not performed in all facilities, except in Tenwek, while developmental assessment is not done in Kisii only;
- Vasectomy not in Nyamira, Kaplong and Central; and
- Basic examination of urine and blood (haemoglobin/haematocrit) are not in Nyamira.

It seems Nyamira District Hospital needs to catch up in many areas.

Although it is not in the standard health package, pregnancy test is not available in any public health facility. It is performed at Kaplong and Tenwek Mission Hospital only.

Table 8.6 Health Services and Goods Actually Available at Hospitals (N=6)

Health Services and Goods	Kericho DH	Kisii DH	Nyamira DH	Kaplong MH	Tenwek MH	Central H (Kericho)
Anti-malaria (chloroquine, quinine, and others)	O	O	O	O	O	O
Care for complicated malaria	O	O	O	O	O	O
Malaria blood smear	O	O	O	O	O	O
Guideline of diagnosis of ARI		?		O	O	
antibiotics (oral, injectable)	O	O	O	O	O	O
X ray	O	O	O	O	O	O
Immunisation	O	O	O	O	O	O
ORS	O	?		O	O	O
Intravenous fluid therapy	O	O	O	O	O	O
Stool analysis	O	O	O	O	O	O
Growth monitoring, weight	O	O	O	O	O	O
height		?			O	
development	O	?	O	O	O	O
Antenatal care	O	O	O	O	O	O
Normal delivery	O	O	O	O	O	
Dilatation & curettage	O	O	O	O	O	O
Caesarean section	O	O	O	O	O	
Family planning (condom, OCP, Depo-provera, IUD, tubal ligation)	O	O	O		O*	O
vasectomy	O	O			O	
HIV Screening	O	O	O	O	O	O
Sputum smear for AFB	O	O		O	O	O
Sputum culture		?		O		
STS screening	O	O	O	O	O	O
TB treatment	O	O	O	O	O	O
Urine analysis	O	O	?	O	O	O
Haemoglobin/haematocrit	O	O		O	O	O
Blood transfusion	O	O	O	O	O	O
Minor & major surgery	O	O	O	O	O	O
Education on diet	O	?		O	O	O

Source: JICA Study Team 1997

* *does not include IUD*

Chapter 9

Referral System

9 REFERRAL SYSTEM

9.1 THE CONCEPT

9.1.1 The Organisation

In the past, the Ministry of Health established the referral system based on the hierarchical structure of its own organisation. Later, the concept of referral system has been expanded to include other providers such as non-governmental organisations, missions, private sector, home-based providers, volunteer health workers, and traditional practitioners (Fig. 9.1).

At the community level, the some patients are first seen by the traditional health practitioners, community health workers, or the dispensary staff, who refer the patients to the health centre staff. Patients seen at the district hospital are presumed to have been assessed and given preliminary assistance by lower level facilities.

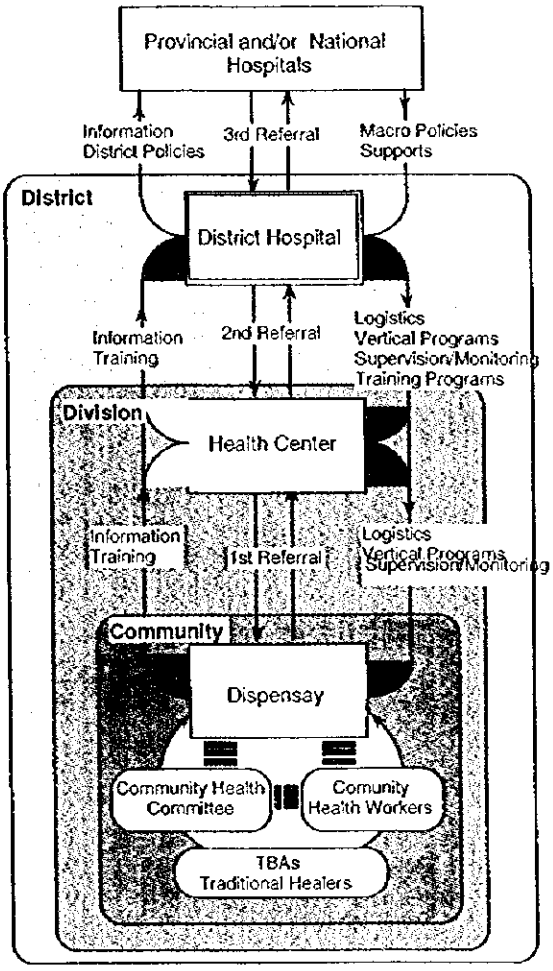


Fig. 9.1 Concept of District Health Service Delivery and Referral System

9.1.2 The Services

Based on their capacities and available resources, the health facilities, particularly within the government structure, are expected to provide certain types of health services[1] (Annex 3 Definition and Categorization of Health Facilities in Kenya).

[1] The services and staffing patterns are based on the standards set forth in the 1991 "Report of a Technical Committee on Definition and Categorisation of Health Facilities in Kenya".

9.1.3 Referral of Specimens

Aside from referral of patients, specimens may also be transferred to laboratories (Table 9.1). These specimens are collected usually at the district hospital, processed and then sent by post or courier services to the provincial or national laboratory at the Kenyatta National Hospital. For other specific diagnostic examinations (e.g. X-ray and endoscopy) patients are referred to centres with these facilities.

Table 9.1 Standard Laboratory Tests Available by Facility Category

Facility Category	Tests Available	Types of Test and Recipient Facilities for Referral
Dispensary	None	Patients referred to HC or Hospital
Health Centre (HC)	Blood slide for malaria Simple microscopy (stool and urine) Haemoglobin estimation	For complex tests, patient referred to District Hospital (e.g. X-ray)
District Hospital	Blood: Smear for parasites, Complete blood cell count, ESR, Haemoglobin/ haematocrit. Blood chemistry: Sugar Culture and sensitivity tests Blood group and X-match Radiological : Plain X-ray, Intravenous Pyelography, Ultrasound Serology: Widal, Brucella Screening: HIV, VDRL Sputum: smear	Specimens sent to Provincial or national hospital (Kenyatta National Hospital): Biopsy Fungal swabs Virology culture Patients sent to Provincial or national hospital for: Specialised radiological tests Endoscopic tests

9.1.4 Transportation for Referral

When it comes to the transportation that should be used for referral, the ideal situation dictates that the referring facility is expected to be responsible particularly during emergencies. In case of death, the relatives or community is responsible for the return of the body for burial at home if they so require. In non-emergency situation, the referring facility is expected to provide a return ticket for the patient and one escort health worker. The choice of mode of travel lies with the referring doctor or clinician. In extreme emergencies, a patient could be flown by the "Flying Doctor Service" of AMREF".

9.1.5 Referral of Emergency Cases

Ideally, patients may be referred upward and downward the hierarchy - upward for services that are not available in the lower facility categories and downward for follow up care and feedback. For emergency care, however, patients may be brought to the nearest facility prior to transfer to a more appropriate one. For example, patients requiring radiographic examinations, an operating theatre, or specialist in obstetric, gynaecologic, surgical, or acute medical care would finally have to be referred to a district hospital.

9.2 MAJOR FINDINGS

The referral system as conceptualized by the MoH is functional in the Study Areas. Indeed patients and pathological specimens are referred among the different levels of health facilities and across various types of providers. Preliminary data showed several trends.

9.2.1 Direction

The direction of referral is multiple (Table 9.2). All facilities seem to refer to others regardless of the owner of the facility. Nonetheless, GOK facilities would tend to refer to other GOK facilities, one third of which are outside their district boundaries.

The facilities owned by the missions seem to be neutral as far as their choice. They refer equally to GOK and to Mission. They have more referrals to facilities outside their district boundaries. The number of private facilities surveyed is limited to observe a definitive trend.

Furthermore, there is no downward movement documented in the survey. However, tuberculosis patients are referred back to lower facilities once their diagnosis is confirmed at hospitals.

Table 9.2 Number of Referrals: By Source and Recipient

RECIPIENT		SOURCE OF REFERRAL											
		GOK*				PRIVATE				MISSION			
		H	HC	D	T	H	HC	D	T	H	HC	D	T
GOK	H**	0	6	6	29	0	0	0	1	0	2	0	3
	HC	0	0	4		0	0	0		0	0	0	
	D	0	0	0		0	0	0		0	0	0	
(outside the district	KNH***	1	0	0	13	1	0	0	1	1	0	0	1
	PGH	1	0	2		0	0	0		0	0	0	
	DH	0	5	4		0	0	0		0	0	0	
PRIVATE	H	0	2	0	8	1	0	0	1	0	1	0	2
	HC	0	0	0		0	0	0		0	0	0	
	D	0	0	0		0	0	0		0	0	0	
	Unspecified	1	4	1		0	0	0		0	0	0	
	Outside the District	0	0	0	0	0	0	0	0	1	0	0	1
MISSION	H	0	6	5	11	0	0	0	0	0	0	0	2
	HC	0	0	0		0	0	0		0	0	0	
	D	0	0	0		0	0	0		0	0	0	
(outside the district)	MISSION	0	0	0	0	0	0	0	0	1	1	0	2
OUTSIDE	KNH	1	0	0	14	1	0	0	2	1	0	0	4
THE	PGH	1	0	2		0	0	0		0	0	0	
DISTRICT	DH	0	5	4		0	0	0		0	0	0	
	MISSION	0	0	0		0	0	0		1	1	0	
	PRIVATE	0	0	0		0	0	0		1	0	0	
	Unspecified	0	0	1		1	0	0		0	0	0	

* GOK = Government of Kenya
** H = Hospital; HC = Health Centre; D = Dispensary; T = Total
*** KNH = Kenyatta National Hospital, KEMRI, NPHL; PGH = Provincial General Hospital; DH = District Hospital

Source: JICA Study Team, 1997

9.2.2 Number

a. Incoming Referrals

The Study showed that from 1.0 to 8.4% of patients seen in the facilities surveyed were incoming referrals (Table 9.3). As expected, Kericho and Nyamira received the highest number of referrals. The data from Kisii may be a spurious one and may be attributed to poor records.

Table 9.3 Total Number of Patients Seen and Incoming Referrals (July 1996 - June 1997)

	New cases	Re-Attendance	Referrals	Total
Bomet	82,126	15,168	1,191 (1.2%)	98,485
Gucha	35,266	14,655	921 (1.81%)	50,842
Kericho	56,114	10072	6,102 (8.44%)	72,288
Kisii	124,777	25,339	526 (0.35%)	150,642
Nyamira	93,130	13,267	1,118 (1.03%)	107,515
Total	391,413	7,8501	9,858 (2.05%)	479,772

b. Outgoing Referrals

Looking at the average number of outgoing referrals per month (Table 9.4), it seems the numbers of referrals from health centre and dispensary are almost the same. The low average for hospitals is expected as it is designed to be the referral centre within the district.

Public facilities refer more patients (11 per month) than mission facilities (7). The only private facility surveyed reported the least number of referrals per month.

Table 9.4 Average Number of Referrals Per Month

CRITERIA		Mean
Category	Hospital	1
	Health Centre	9.9
	Dispensary	11
Owner	GOK	10.4
	Private	0.5
	Mission	6.5

Source: JICA study Team, 1997

9.2.3 Peak Season

Some facilities (17%) reported no peaks while others observed that their referrals increased unusually from March to July because of malaria, from August to December of maternity cases, from April to August of acute respiratory infection, and in December because of severe injuries. The referral pattern runs parallel to the disease pattern.

9.2.4 Transportation and Communication Facilities for Emergency and Non-emergency Referrals

All mission and private health facilities have their own ambulance. In contrast, only 11% of GOK facilities have a functional vehicle that can be used for transporting patients. In the past, the government distributed ambulance units to some health centres. It seems, however, that the centres had difficulty in maintaining the units.

Generally, the mode of transportation for emergency or non-emergency cases seems to be similar. The patients would tend to arrange it by themselves even if a facility vehicle is available. This is evident in Kericho, Gucha and Kisii. The patients would prefer to commute or take the public transportation ("matatu").

Patients coming from mission hospitals, however, would at times avail of the facility vehicle. In fact, one of the mission hospitals has a plane that could be used for emergency referrals.

When it comes to communication facilities, some key informants reported the presence of telephone units in all district hospitals, some health centres, and a few dispensaries. However, some telephone lines have been disconnected already because of the inability to pay for the bills.

9.2.5 Cases Referred for Diagnostic Examination

A total of 25 diagnostic examinations were cited as reasons for referral. Chest X-ray is the most common as all the GOK health centres and dispensaries were unanimous. The other common requests include the following: Widal Test, Kahn VDRL, Sputum smear and culture for suspected TB cases, culture and sensitivity testing, cytology and histology, liver, function test, HIV serology, pregnancy testing, blood typing and cross-matching, blood sugar, and PAP smear. All these can be considered as appropriate referrals.

However, there were referrals coming from the health centres that would be considered inappropriate because they are expected to have the capacity to perform the tests. For example, 45% of the health centres surveyed had to refer for malaria testing, 27% for stool examination, and 19% for urinalysis.

At present, the district hospital laboratories are designated as the referral centre for HIV testing. Another facility in Kisumu has advanced laboratories for different types of examinations. This facility, Kenya Medical Research Institute (KEMRI) for Malaria, conducts drug-resistance testing.

9.2.6 Referral of Emergency Cases and Others Requiring Specialised Services

At least 19 reasons have been documented as reasons for referring patients to other facilities. The most common cases in descending order are the following: fractures and dislocation; deep wounds and injuries; first pregnancy, complicated and high-risk pregnancies; acute abdominal pain; accidents, tumours/cancers, complicated malaria, and severe anaemia. All these cases are referred appropriately to hospitals within, or sometimes outside, the district boundaries. Referral of delivery of first born to hospital is encouraged to minimise the risks to both mother and child.

9.3 PROBLEM, ITS EFFECTS AND CAUSES

Core Problems

The existing referral system seems to be not working as conceptualised by the MOH. It holds the following core problems.

1) downward referral or provision of feedback was hardly observed;

2) occasional inappropriateness particularly coming from the health centres; and
3) some patients would bypass the hierarchical structure.

Direct Effects

Some direct effects of a sub-optimal referral system include congestion in the district hospitals and under-utilisation of the rural health facilities.

Direct Causes

There are causes that can be attributed to the supply side and others to the demand side of health service delivery. From the supply side, the general inadequacy in the provision of essential health packages is a pervasive problem among GOK facilities. Table 8.3 shows that only 13% of the facilities can provide the full range of essential package at the time of the survey. By facility category, the problem becomes worse as one goes down the organisational hierarchy. All of the facilities surveyed in Bomet and Kericho could only provide some services but none fully.

Still on the supply side, the other factors that contribute to sub-optimal operation of the referral system are as follows:

1) limitations in the capacity and performance of laboratory services and the absence of a referral network;
2) difficulties in the maintenance of ambulance services; and
3) transport facilities for referral are hardly linked to communication facilities.

From the demand side, there are two possible causes. On one hand, it seems the referral system was introduced without informing the public of the types of services that can be availed of in different facility categories.

On the other hand, bypassing of lower-level facilities can also be attributed to more pragmatic reasons. Nearness to their residence is a common one. Availability and quality of services may be strong "pull" factors for patients to go directly to hospitals. Although services at the dispensaries are for free, although consultation fee at the hospitals would be cheaper if they have referral letters, still there would be some patients who would give these up. Nowadays, the effectiveness of these economic incentives is threatened as some dispensaries have started to collect some amount for their cost-recovery fund.

9.4 PREVIOUS AND ON-GOING ACTIVITIES

Previous and on-going activities have not been directed at a campaign to strengthen directly the referral system. Instead, the programmes have been targeted at specific elements of the government health care delivery organisation. For example, there are programmes for the development of human resources and essential health packages.

Some of the programmes, however, have been criticised on the grounds of being strongly dependent on donors' contribution leaving doubts on their sustainability.

The programmes that might have the most direct impact on the referral system could be that on the mobile services and the Health Management Information System. The GOK introduced the mobile and outreach services as a strategy to reach out to nomads and under-served communities. Instead of transferring the patient from the communities to the health facilities, the concept was to bring the facilities to the communities. In the facilities surveyed, mobile or outreach services of the GOK have all been discontinued because the vehicles have broken down and inadequate budgetary and staff support. There are two mission hospitals (i.e. Tenwek and Kaplong) that continue to provide outreach services on a fee-for-service basis. Occasionally, there would be other non-governmental organisations providing special services for the handicapped.

Regarding the Health Management Information System, it seems too early for the rural health facilities to collect information and assess the impact of on-going activities. Nonetheless, there is a need to review the information system vis-à-vis the requirements for an effective referral system considering emergency cases and increase of communication.

According to interviews, a concerted effort to improve the laboratory services is still wanting. In the past, there was no specific comprehensive programme yet in this field.

9.5 PLANNING ISSUES

9.5.1 Strengthening of Laboratory and Other Diagnostic Capacities

- There is a need to support the health centres so that they can conduct essential laboratory examinations.
- The establishment of a system of networking among laboratories and diagnostic centres could be entertained with the end in view of optimising existing capacities of both public and non-public facilities.
- Recognising the need to control common diseases (e.g. malaria, diarrhoea and tuberculosis) and rapidly spreading emerging diseases (e.g. HIV), a more aggressive strategy in conducting definitive diagnostic tests could be developed.

9.5.2 Development and Support for a Sustainable Communication, Transportation and Information Systems

- There is a need to incorporate a communications facility development plan to any system of transporting patients on an emergency or elective basis.
- A more effective, efficient, equitable and sustainable transportation system has to be developed. There is a demand from both elective and emergency cases. However, at least three things may have to be done first.

- One, there is a need to quantify the demand and determine the optimal combination and distribution of vehicles. Possible networking with mission or private facilities should be considered. The issue of a multi-purpose or uni-purpose vehicle could be discussed.
- Two, there is a need to identify mechanisms to finance the maintenance of these vehicles.
- Three, there is a need to train the users of these vehicles on proper use, maintenance and trouble-shooting. Training of drivers on paramedic skills can also be included.
- In the information system, there is no major issue that needs to be addressed except for the need to reproduce the existing letter or forms used for referring patients, improve the system of keeping the records and possible re-designing of the reports to make it more useful to decision-makers.

9.5.3 Promotion of Access and Revision of Economic Incentives for Patients to Comply with Referral System

- There is a bigger issue of whether economic incentives or disincentives can really be a policy instrument to affect the behaviour of patients. If the decision is affirmative, then there is a need to coordinate the cost-recovery activities of some dispensaries and the fee structure in hospitals. There is a need to review the pricing policies as well as the price difference threshold to encourage people to avail of functional lower-level facilities.
- Addressing the Needs of Under-served Communities Through Promotion of Mobile Clinics or Outreach Services
- To improve access to essential health services, training of local people as community health workers could be considered as an alternative in hard-to-reach communities.
- In the Study Areas, mobile clinics or outreach service may be organised under two conditions. On one hand, it can be a transitory strategy while waiting for the benefits of long-term solutions. On the other hand, it can be an effective tool for specific campaigns particularly when a high-profile activity is needed to increase the public awareness or achieve programme targets. Much can be learned from the system of missions and NGO in keeping the mobile and outreach services sustainable.

9.5.4 Communicating with the Public on Referral System

- To minimise "by-passers" of lower lever facilities, it is essential to communicate to the public the merits of following the hierarchical system of referral. The success of the referral system depends partly on the compliance of the public.

Chapter 10

Logistics System

10. LOGISTICS SYSTEM

10.1 GENERAL LOGISTICS SYSTEM IN KENYA

The GOK established and maintains a logistics system for essential drugs and medical supplies (Fig. 10.1) based on the "push" principle that starts from the top of the organisational structure. Theoretically, the requirements are estimated based on Health Information System data on population, number of health facilities, morbidity patterns, and health facility workload. Since 1995, drugs are procured centrally by either the MoH or the individual donors through procurement agents. Occasionally, some DHMB would buy directly from private chemists using the facility improvement fund.

The Medical Supplies Co-ordination Unit (MSCU) and the regional depots are responsible for storage and distributing[1] kits to districts at levels pre-determined by the MoH. The stockholding capacity of the MSCU is 6 months and that of the regional depots is 3 months. There are at least five kinds of kits:

1) dispensary kits, health centre kits, and dressing and lotion kits for rural health facilities under the Essential Drugs Programme;
2) inpatient kits, out-patient kits, and anti-malarial kits for provincial, district, and sub-district hospitals;
3) vaccination kits for the KEPI;
4) kits for family planning and sexually transmitted diseases; and
5) oral rehydration solutions for the Control of Diarrhoeal Diseases programme.

Aside from kits, loose drugs, family planning commodities, and medical supplies are also distributed through the system.

At the district level, medical supplies are stored in the hospital bulk store, hospital drugstore, pharmacy, or district EDP stores prior to their distribution to various end-users (e.g. hospital wards, theatres, RHF, or patients). The District Pharmacist has a central role in supervising drug use in RHF and in redistribution of slow-moving drugs. Drugs and Therapeutics Committees are organised to supervise drug management in the hospitals.

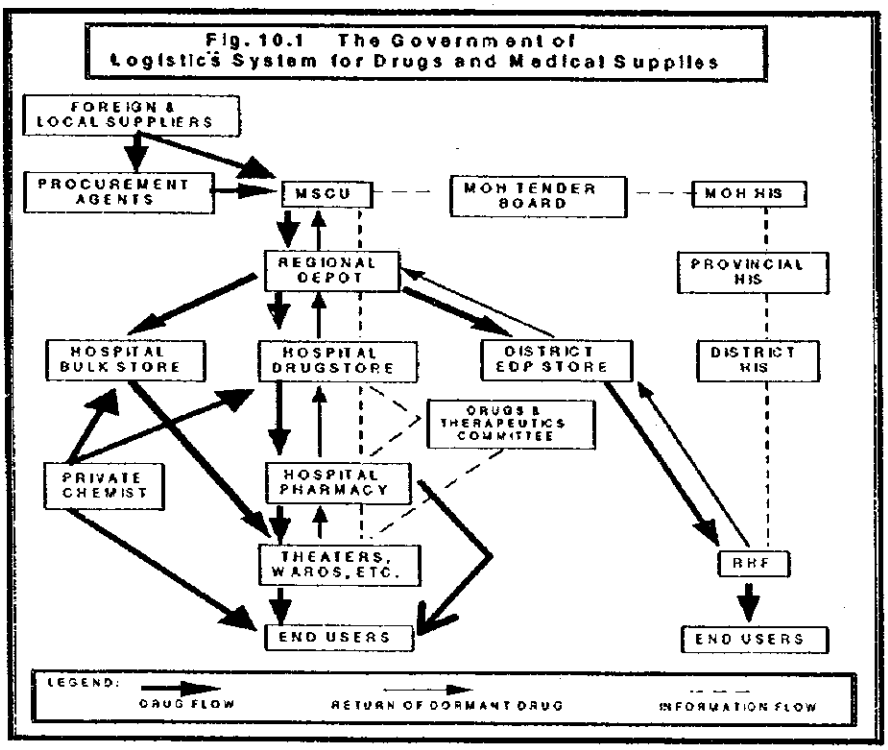
[1] Private contractor is responsible for the distribution of kits from MSCU to Mombasa only.

10.2 PROBLEMS IN LOGISTICS SYSTEM IN THE STUDY AREAS

In general, the government logistics system for essential drugs and medical supplies is working as planned. However, it is bogged down by a number of operational problems in the different key health facilities.

10.2.1 MSCU

The MSCU has neither a clear mandate nor organisational structure. It is heavily dependent on the MoH headquarters for its operation. The procurement, personnel, and accounts offices function only partially as many of their activities are actually performed by the MoH. In procurement, the MSCU is supposed to have a role in projecting the requirements. However, there seems to be a need for stronger co-ordination with MoH officials. Oftentimes, the MSCU will learn about a particular procurement only at the time of delivery.



The MSCU has a shortage of technical and management staff, and an excess of unskilled personnel (44 subordinate staff, 15 storemen, and 9 drivers out of 122 staff). It is estimated that 50% of the staff are routinely absent. In many of the MSCU offices, there is no effective chain of command because the supervisor is in the same job category as those supervised. In addition, many of MSCU staff have received almost no

continuing education in their assigned responsibilities. This is particularly evident in the computer section that is manned by a subordinate staff.

10.2.2 Regional Depots

The Nakuru depot serves the Kericho and Bomet districts. It is well-maintained and 11 staff update records. It is headed by a pharmacist and has a pharmaceutical technologist, a store manager, and various subordinate staff. Its problems are as follows.

1) Its 8-year old lorry is being repaired with DANIDA funds. At times, district stores are asked to pick up their allocation.
2) It lacks storage space. This problem is aggravated occasionally by 6-month supply deliveries from MSCU when its capacity is only for 3 months, and persistently by the non-disposal of expired drugs. At the time of investigation, expired drugs occupied 10% of the already limited storage space. It seems the staff are afraid to be accused of misappropriation when they take the responsibility of disposing the drugs.

The Kisumu depot serves all the three Kisii districts. Like the Nakuru depot, the Kisumu depot is also maintained properly and the records are updated. Its problems are:

3) Understaffing - It has no pharmaceutical technologist at the depot for more than one year. The officer-in-charge has only an administrative background. He has one assistant staff who had some short and unspecified medical training. For other duties such as loading and unloading, cleaning and maintaining the warehouse, and clearing the grounds, the night watchmen are asked to assist.
4) Transport Maintenance - Like the Nakuru Depot, the Kisumu Depot lacks to maintain the lorry and pay for its fuel requirements. District health facilities are often requested to collect their supplies by themselves.

10.2.3 District Stores

The rural health facilities in Bomet, Kericho, Central, and Nyamira are served by their respective District Stores. Those in Gucha are still under the responsibility of the Kisii District Store. All the four stores are located within the district hospital premises; only two are housed in a building separate from the hospital complex. In general, the District Stores share some common problems.

a. Maldistribution of a Few Pharmaceutical Staff

In the study areas, the number of pharmaceutical staff is veritably less than the national statistics. While one pharmacist serves about 35 thousand people in Kenya, one pharmacist in the Study Area would serve almost 2.7 million people. When it comes to pharmaceutical technologist, the gap is smaller but still a significant amount. Furthermore, the limited number of staff in the study areas is also maldistributed. For

example, despite the absence of inpatients, Bomet District Hospital has 3 pharmaceutical technologists. On the other hand, the fully functional Nyamira District Hospital has only one pharmaceutical technologist.

b. Transport

All the DHMTs reported the lack of a permanent solution to the problem of transport for their district stores. In the past, they have taken certain palliative measures such as the following:

1) sending an authorised official to the regional depot to pay for the fuel cost for delivery;
2) borrowing vehicles of private truck owners in the district to collect kits at the regional depot and paying only for the actual fuel consumed;
3) using the KEPI vehicle for the distribution of non-KEPI kits to rural health facilities;
4) using the district commissioner's vehicle as is the case in Nyamira;
5) asking the rural health facilities to collect their own kits from the District Stores.

c. Other Management Problems

- In all of the facilities visited, storage space seems insufficient to keep significant volume of buffer.

- Discrepancy between the number of kits dispatched by the district and the actual number received by rural health facilities was documented based on the questionnaire filled up by district store staff. The discrepancy is consistently highest in Nyamira. In general, there were more gaps observed when the kits were intended for distribution to dispensaries.

- As perceived by district staff, the mushrooming of rural health facilities is starting to spread the limited logistics too thinly. For example, the district allocation for Kericho remained the same despite the opening of three new dispensaries in October this year.

- Deliveries from the central level have started to become irregular.

10.2.4 Rural Health Facilities

The interviews and focus group discussions revealed a generally favourable impression on the present logistic system. Staff who have been working with the MoH for a long time opined that the kit system is working reasonably well. However, there remain at least four major problems at RHF level (Table 10.1).

Table 10.1 Major Problems Reported in RHF Visited

Problems	% of RHF
Lack of transportation	60%
Irregular or delayed supply of drug kits	50%
Inadequate kit contents	47%
General shortage of drugs	30%

Forty per cent of the facilities reported stock-outs of chloroquine during the study period. This may reflect the preference of the providers, patients, or both in the treatment of malaria or malaria-like symptoms. This shortage, however, should not be taken with alarm in as much as the tablet preparation was seen to be in oversupply in 70% of the facilities.

Most of the drugs in the top 10 that are found to be out of stock are antibiotics. The penicillins, co-trimoxasole, and metronidazole are the drugs used as first- or second-line treatment for common infections. For intestinal parasitism, the field staff would use mebendazole. With 25 to 32% of facilities running short of these supplies, the impression of general shortage of drugs is understandable.

The report of stock-outs in Kericho district is the least (only 10) while that in Bomet is the most (43). The regional depot in Nakuru serves these two districts. On the other hand, the range of stock-outs among the districts served by the Kisumu depot is narrow: 26 for Kisii, 29 for Gucha, and 32 for Nyamira. Further investigation is required to fully appreciate the wide gap between Bomet and Kericho.

The study demonstrated that a number of health facilities carried inventories that are more than their requirement. At least one-third of the facilities had oversupply of 66% of the drugs in the list, two-fifths of the facilities had 50%, and half of the facilities had 25%.

Ferrous sulphate tablets seem to be the most common drug in abundance in 76% of the facilities. In addition, more than 40% of the facilities would be over-stocked with five types of medicines that are given by injection - adrenaline, lignocaine, diazepam, chlorpromazine, and chlorpheniramine maleate. Among the top 10, three drugs (i.e. chlorpromazine injection, chlorpromazine tablet and diazepam injection) are indicated for mental illness or sedation, conditions that are not so common.

10.2.5 District Hospitals

The overall impression from the district hospitals is that there are general shortages of some drugs and most medical supplies in all hospitals. These are attributed to the same problems as those discussed in the previous sections.

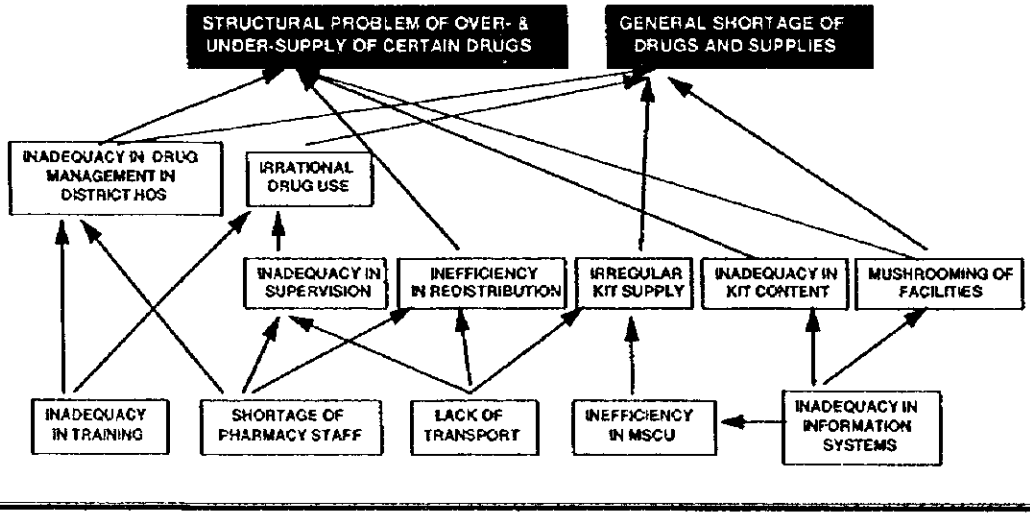
10.3 CORE PROBLEMS AND THEIR DIRECT CAUSES

The many different problems identified at different levels of the drugs and medical supplies system as well as the issues and causes underlying these are all interrelated. These interrelationships are illustrated in Fig. 10.2.

The analysis showed two core problems. First, there is the general shortage of drugs and supplies. Second, there are structural problems in the over- and under-stocking of some drugs.

There are four major causes hypothesised. First, the inadequate training of staff affects rational use at the RHF level and drug management practice at the district hospital level. Second, the shortage of pharmaceutical staff affects drug management practice in district hospitals as well as the re-distribution of drugs and supervision of drug use in RHF. Third, the inadequacy in transport facilities affects actual kit delivery at all levels, the re-distribution of drugs, and the supervision of drug use in RHF. Fourth, the inadequate information system affects the suitability of kit contents, adequacy of kit delivery, and the efficiency of the entire logistics system starting from the MSCU.

Fig. 10.2 Core Problems and Contributory



10.4 PREVIOUS EXPERIENCES AND CURRENT TRENDS

10.4.1 Essential Drugs Programme and Decentralisation

The introduction of the Essential Drugs Programme (EDP) in 1981 was one of the major interventions of the GOK to address the problem of inadequate drugs and supplies. The EDP targeted the rural health facilities. It greatly improved the supply of drugs in the early 1980s. At present, the EDP has remained a fundamental structure within the public health care system.

In the middle of 1980s, decentralisation of procurement was also tried by the GOK. It was promoted in line with the so-called District Focus Policy. Together with decentralisation, a revolving fund was established at the Central Medical Stores. However, both strategies were not evaluated well such that they have been dropped by the MoH already.

In 1996, procurement agents were introduced into the logistics system. This seems to have a positive effect on the logistics system.

10.4.2 Family Planning Logistics Management

It is based on the "pull" principle where the District Health Management Teams (DHMT) determine their requirements. It has a computer system that guides the procurement and distribution of contraceptives and STD drugs. The critical link between reporting and re-supply is the quarterly report filled up by the DHMT. All RHF surveyed did not report any problem in the availability of the Family Planning kits.

10.4.3 Restructuring of MSCU

The restructuring of the MSCU and the entire MoH logistics system have been suggested in a number of reports such as the 1994 interim report *Restructuring of Drugs and Other Medical Supplies Systems in Kenya* and the June 1997 interim report *Restructuring and Streamlining of the Medical Supplies Co-ordinating Unit.* The five major elements of the current trends in reforms are as follows:

1) replacement of the MSCU by a parastatal body that is autonomous from the daily supervision of the MoH;
2) this parastatal body would be responsible for procurement;
3) change of the present "push" system to that of a "pull" system;
4) partial decentralisation by allowing the districts to buy commodities from the central level with the use of "paper currency"; and
5) at a later stage, full decentralisation that allows the districts to buy from their sources of choice.

10.5 PLANNING ISSUES AND DIRECTIONS

At this stage of the development study, at least six issues and directions could be considered for planning purposes.

10.5.1 Development of a Sustainable Solution to the Inadequacy in Transport Facilities

- Considering that all facilities reported the problem of transport, there seems to be a need to address this problem urgently. One option is to provide a vehicle to the DHMT that would show their commitment and plan in providing for the running costs, in ensuring its repair and maintenance, and in mobilising resources to replace the donated vehicle once it exceeds it serviceability.

- To optimise its utilisation, the donated vehicle may be multi-purpose. It can be used for the delivery of drugs and supplies and the redistribution of dormant ones. It may also be for the overall supervision activities of the DHMT and for transporting patients.

- A full inventory of existing vehicles could be initiated that would include the spare parts requirement. An estimate could then be done on the cost of repairs.

- A complementary training on transport management could also be done.

- The cost and benefits of a regional or district vehicle repair and maintenance shop could be analysed and compared with an option of linking with private shops.

- Two other issues in addressing the problem of transport of drugs could also be explored. One option is to fully privatise the distribution of essential drugs and medical supplies. The other one is to procure from drug companies that would also be responsible for the distribution of these commodities.

10.5.2 Training in Rational Drug Use

- There is a need to conduct further study on several observations in RHF. Some of the staff does minimal taking of history and physical examination. Sometimes unqualified staff gives the treatment. On the average, staff writes 2-3 drugs per prescription with some having 4-5 even for a single diagnosis. Finally, prescriptions are poorly written such that dosages and duration of treatment are not indicated.

- Although the problem of rational drug use was documented only in the RHF, the training might be appropriate also for the staff in the hospitals.

- There is also a need to clarify the use of chloroquine injections, the drug that is most often reported to be out of stock. It seems both the providers and patients consider it as the drug of choice for many cases of malaria.

- There is also a need to further analyse the apparent contradiction of ferrous sulphate tablets being overstock (having more than 2 months supply) in 75% of the RHF when in fact anaemia has been reported to be a major cause of morbidity and mortality.

- This study documented the main reasons for poor compliance to the National Drug Policy: inadequate training & information, and insufficient supervision from the district.

- The campaign on rational drug use could also be extended to the public. As long as the patients are not adequately informed, the monopoly to information by the health providers could continue to be misused.

- The training programme on rational drug use may be integrated to the general continuing education programme for health care providers. As such, it might be necessary to conduct training of trainers at the Rural Health Training Centre in Chulaimbo. The programme may include the following topics: concept of essential drugs; contents and usage of the RHF kits; clinical guidelines for diagnosis and treatment; good dispensing practices; educating patients on drug uses; and self-assessment on rational drug use.

- It might also be appropriate to assist the GOK in updating the Handbook for Rural Health Workers and its complementary wall chart.

10.5.3 Development of Adequate Information System

- It is argued that the logistics systems can be further enhanced if the information system is improved particularly in gathering data on the following: population; morbidity and mortality patterns; workload in facilities; and actual use of drugs and supplies in facilities. Compilation of all these data at the district level can be facilitated with the use of computers and user-friendly reporting forms. This would require in-depth analysis of existing guidelines and considerable input from health care providers.

- To ensure sustainability, extensive training in the use of the logistics management information system could be planned.

- However, it might also be necessary to first analyse the factors that influence the use of data and information in estimating drug requirements. For as long as the field staff feel that the information system is just an exercise and not linked to planning, then the success of the logistics management information system would remain dubious.

- It is advisable to learn from the experience of the Family Planning Logistics Management System and to closely co-ordinate with the MSCU.

10.5.4 Implementation of Good Drug and Supplies Management

- Since a manual already exists, the first step would be to review the manual vis-à-vis the realities in the districts. Revisions may be recommended with respect to the systems, procedures, and roles and responsibilities of all types of staff. An assessment of training needs and actual training programme can then be developed and organised for different groups such as the pharmaceutical technologists.

10.5.5 Monitoring and/or Facilitating the Process of Reform

- Although many of the aforementioned planning issues are relatively generic, it would still be more prudent to monitor the progress of proposed reforms in MSCU, in particular, and in the logistics system, in general. On the other hand, facilitating or supporting the process of reform would even be a more strategic option.