MEDICAL CARE COST AND HEALTH SEEKING BEHAVIOUR IN A RURAL COMMUNITY IN KIRINYAGA DISTRICT, KENYA.

BY

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DECLARATION

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DEDICATION

This work is dedicated to my family : My wife Wanjiru, and our children - Murimi, Kangangi and Baby Mutugi.

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ABBREVIATIONS IN THE TEXT

P.H.C.	Primary Health Care
M.O.H.	Ministry of Health
G.O.K.	Government of Kenya
W.H.O.	World Health Organization
N.H.I.F.	National Hospital Insurance Fund
A.M.R.E.F.	African Medical Research Foundation
N.G.O.s	Non-Governmental Organizations
C.P.K.	Church of the Province of Kenya
P.C.E.A.	Pentecostal Church of East Africa
A.I.P.C.E.A	African Independent Pentecostal Church of East Africa.
M.O.T.C.	Ministry of Transport and Communication.

DEFINITION OF CONCEPTS:

Health services

This is defined in the context of the purpose of health services use,

To promote health

To prevent,diagnose and treat disease and.

To rehabilitate people incapacitated by disease or injury.

Medical care

This includes all services for diagnosis, treatment and medical rehabilitation whether provided in hospitals or nursing homes,health centres or medical centres, in school clinics, in the medical practitioners surgery or at home.

Medical care cost

This follows from medical care and is defined as direct cash or out-of-pocket payments in return for health goods purchased such as: charges or fee-for-service, payments for prescriptions, laboratory and X-ray investigations as well as other diagnostic procedures.

The concept of "cost" is restricted to direct monetary cost which result from an illness.

Household

A household is an entity comprising a person or group of persons generally bound by ties of kinship, who normally reside together under a single roof or under several roofs within a single compound and who share the community in life in that they are answerable to the same head and share a common source of food and other domestic amenities.

Head of Household

This is the husband and/or wife resident in the homestead or resident elsewhere but returns at frequent intervals.

Access to Health Services

This refers to the proportion of the population that can be expected to use a specific facility, service etc. given certain barriers to access, which may be physical (distance, travel time),economic (travel cost,charges),or social and cultural(caste or language) barriers.

Utilization of health services

This is expressed as the proportion of people in need of medical care who actually receive care in a given period. In this study it was expressed as the number of households that had a member(s) who sought medical care from a health facility.

SUMMARY

A cross-sectional household survey of medical care cost and health seeking behaviour in a rural community was conducted in Kirinyaga District, Central Province , Kenya from December 1990 to January 1991.

Thirteen hundred and seventy (1370) households were surveyed in order to assess morbidity, utilization of health facilities for outpatient medical care, maternity and mother child health services, and expenditure on medical care including maternity. Socio-economic (education, household income, household size etc.) factors and epidemiological factors (morbidity distribution) were also examined in relation to utilization of health care facilities. Opinion regarding health prepayment schemes and cost-sharing was also sought.

From the study, 605 (44.2) households reported an illness episode that afflicted a member of the household within a recall period of two weeks. This was extrapolated thus each person experienced 2.2 illness episodes per year. The commonest diseases that were reported (as perceived by the respondents) were malaria(28.3%), respiratory diseases (27.6%), gastro-intestinal diseases (18.7%), accidents (burns and traumatic injuries) (5.0%), skin diseases (3.3%), all other diseases(14.0 %) and headache(2.5 %) as a symptomatic illness.

Health care facility utilization information revealed that 60% of the households had obtained outpatient services from public health facilities and 40% from non-governmental facilities (private and missionary health facilities). The public health facilities had provided maternity care to 55 % of the households

of which 45 % was provided by the district hospital. The non-governmental provided maternity care to 20 % of the population and 25 % of deliveries took place at home. 89 % of the households obtain MCH care from government health facilities.

Socio-economic and epidemiological factors influenced utilization of health facilities. These includes economic status (particularly household income), type of disease and duration of illness.

The proportion of households that had incurred some out-of pocket expenditure on medical care was mainly on maternity services 74.6 %, outpatient care 41.0 % and self-medication 24.6 %. They were found to have spent a mean of Ksh.8.90 (S.D. 7.1) on self administered medicines obtained from the local shops, Ksh. 78.20 (S.D.72.0), on prescriptions bought from the chemist and Ksh. 43.70 (S.D.38.0) on routine laboratory investigations. The households that paid money for outpatient treatment in both public and fee-for services facilities, incurred a mean of Ksh.62.70 (S.D 72.50). Mean maternity cost was Ksh.199.50 S.D.297.70 and this was mainly in form of fees. Annual estimate of medical expenditure by households was as follows:

Self-medications	Ksh. 231.40 (S.D.187)
Prescriptions	Ksh. 2033 (S.D. 1872)
Laboratory	Ksh. 1630.20 (S.D. 1885)
Outpatient	Ksh. 1136.20 (S.D. 988)
Maternity	Ksh. 197.20

Expenditure on maternity services was highly skewed.

Income from regular household economic activities was found

to have a significant influence on the choice of the place of delivery of children (Chi-squared = 45.92589 D.F.8, P-value 0.0000 < 0.05). Expenditure on outpatient services was not influenced by salary or wage income. However there was a significant spending across the different income groups, that higher income categories spent more money for outpatient than those in lower income.

(Chi-squared = 17.15229 D.F 8 P-value 0.0286 < 0.05).

Only about 11.0 % of the households were enroled into a medical insurance scheme and these were mainly enroled with the compulsory National Health Insurance Fund (N.H.I.F.).

There was an overwhelming positive response (76.0 %) towards the health pre-payment scheme discussed with the respondent(s). Most household respondents did not favour the idea of cost-sharing (user-fees) in government health facilities. They expressed various reasons for not favouring cost-sharing. Among the prominent reasons was that the government should provide free health services (47.0 %), that people are paying taxes (19.1 %) and that drugs are always in short supply in these facilities (26.7 %). However on enquiry into what are the necessary conditions to be fulfilled for cost-sharing to be appropriate, it was observed that adequate drug supply was very crucial.

The study recommended that a Rural Health Insurance Fund can form the backbone for a viable long-term financing of the increasingly expensive health care to the rural community and thus supplement the government's effort in the improvement of public health services.

CHAPTER ONE

INTRODUCTION

1.1. INTRODUCTION

This chapter highlights background information on equity and access to health care, effects of increasing social and economic constraints on health care, aspirations of the government of Kenya in provision of health care, health pluralism and health care financing in Kenya.

1.2. BACKGROUND INFORMATION:

Access to health services for the majority of the population is a major policy goal for every country of the world. Inequitable access is therefore assumed to lead to inequitable health status. In furtherance of this objective, the W.H.O. Declaration of Alma Ata in 1978, promulgated the concept of Health for All by the year 2000 [1]. This was further reinforced with the launching of the "Global Strategy for Health for All" during the Thirty Second World Health Assembly in 1979 [2]. Primary Health Care was identified as the best strategy for achieving the objectives of the Health for All by the year 2000. The principles underlying the PHC concept have been used variously as the basis of formulating health policy in Kenya.

The provision of health service addresses one of the basic human needs and is an essential precondition of overall economic development. This is set in Sessional Paper No. 10 of 1965, the KANU Manifesto [4], the Constitution of Kenya and successive Developmental Plans since Independence [3-11]. In line with these provisions, the government's main objective for the development of health services since independence has been:

To strengthen and carry out measures for the eradication,

prevention and control of disease;

To provide adequate and effective diagnosis, therapeutic and rehabilitative services for the whole population and

To carry out biomedical and health services research as a means of identifying more efficient and cost-effective methods for the delivery of services.

Kenya inherited a skeleton of a health service system from the colonial administration. Since independence, the government of Kenya has sought to pursue policies which would quantitatively and qualitatively increase the capacity of its medical and health care delivery. This required substantial increases in the level of recurrent and investment expenditure and organizational measures to improve equity in the system. These issues have been variously expressed in some of the policy documents. Sessional Paper No. 10 (1965) [3] and KANU Manifesto [4] concerned the principal determinants of the health status of the people - thus improvement in economic status, access to education and health services for all people and provision of an adequate level of free basic social services to all citizens. This culminated in the introduction of free medical services for outpatients and all children in government health facilities in 1965. Subsequent development plans have stressed the supremacy of the importance of health to economic development. For example, the Development Plan 1966-70 [6] states in part "Human health has a major role to play in economic development...." and underlines the corresponding activities to promote the health of the people. The 1970-74 Development Plan [7] recognises the problems facing health services as that of acute shortage of trained staff and

inadequate and poor physical facilities. The objective of the plan was therefore to establish an effective and adequate network of facilities through which basic services with emphasis on public health care can be provided throughout the country.

To meet the rising demands of health, the 1974-78 Development Plan [8] responded by articulating a plan for a greatly expanded program in paramedical personnel and for an expanded training program focused mainly on rural areas. The plan institutionalized the role of the health centre as the "Linchpin of public health policy" while recognizing its importance as the coordinator of both curative and preventive medicine in rural areas. Through the health centre concept, health services could be brought to the rural populations and could thus, theoretically make government health services overall more equitably distributed. To reinforce the importance of the rural health services, a special unit was created at the headquarters (The Rural Health Unit) to carry out the responsibility of planning and implementing rural health projects. The 1979-1984 and 1985-1988 Plans have evolved their policy formulations based on WHO Primary Health Care strategies set forth by the 1977 WHA on " Health for All by the year 2000" whose strategies were adopted in the " Alma Ata Declaration" by the 1978 International Conference in which PHC is seen as the strategy for achieving "Health for All" and 1981 WHA of the "Global Strategy for "Health for All by the year 2000" [2] adopted by the WHO and which Kenya is a signatory viz.

(1) To increase coverage and accessibility in the rural areas;

(2) To consolidate further the urban and rural

curative,preventive and promotive services already in place;

(3) To further expand and consolidate MCH & FP services in order to reduce mortality and fertility;

(4) To strengthen the Ministry of Health management especially at the district level;

(5) To increase inter-sectoral coordination with other ministries involved in delivery of the health care system, for example, Agriculture, Water, Social Services and Information and with relevant Non-Governmental Organizations.

There is a huge demand for health services. This has resulted from the following factors:

(1) The rapid population growth rate (of about 4.0% per annum) with the absolute number of children, young and aging persons rising.

(2) Increased incidence of infections, communicable diseases, emerging chronic illness and health problems related to the environment, behaviour and lifestyle.

(3) Increased awareness of health problems through the mass media and improved literacy (especially among the females).

(4) Tremendous improvement of access to health services.

This has put a lot of pressure on the available government health resources to the extent of affecting their efficiency and effectiveness.

To cope with this situation and drawing on cumulative experiences of the past years, the GOK in her 1989-93 Development Plan in addition to the previous policy formulations underscored

the importance of evolving alternative mechanisms for financing health care programs and to improve and expand the National Hospital Insurance Fund [11]. It is against this background that the government introduced the policy of cost-sharing in the health service delivery from 1st, December 1989 [12].

1.3. PROVISION OF HEALTH SERVICES IN KENYA

Provision of health services in Kenya has adopted a pluralistic pattern, with four main complimentary sub-sectors, namely the Ministry of health, Local Authorities, Private Sector and NGOs. The traditional medicine sector which was put in the limbo during the colonial times is now gaining recognition and in some areas, traditional birth attendants and herbal practitioners have become significant health care providers.

The MOH or the public sector is the largest provider of health care services in the country. It is involved in the provision of all types of health care services, viz. curative, preventive and promotive, rehabilitative health care, environmental protection and pollution surveillance. The public sector provides services through a nationwide health facility infrastructure. These facilities provide health care at various levels with the basic care obtained from the dispensary and advancing to the health centre, the district, and provincial hospital, specialized care provided in special clinics and Kenyatta National Hospital. The MOH also has the legal obligation to supervise all the other providers of health care. Together with the MOH, the Local Authorities are the only other group of providers who are required by law to undertake public health activities, and are mainly financed through the exchequer.

The non-public sector can be divided into two categories viz., profit oriented private sector and non-profit private sector. The former category comprises private hospitals, nursing homes and the general practitioner clinics. These concentrate on curative care, and the general practitioner clinic has

particularly become a popular source of health care because of its convenience and accessibility.

The non-profit category is mainly operated by churches and religious groups. The history of church medical services in Kenya goes back to the beginning of the century. The churches were in fact the pioneers of medical and educational services in Kenya, and indeed in many parts of East Africa. The churches provide one third of all the hospital beds in the country, and some of these hospitals provide training facilities for nursing and midwifery staff. These facilities charge fees for their services, but their charges are below those charged by private sector.

Other agencies that provide health care include parastatals and private companies who provide health care for their staff and their dependents.

One other voluntary agency which plays a great role in the provision of health care, especially to the remote and isolated areas in Kenya and other East African countries is African Medical Research Foundation (A.M.R.E.F). A.M.R.E.F. operates mobile clinics and emergency medical aircraft rescue by its 'Flying Doctor'. This body has contributed a lot towards health education and research in Kenya and other Eastern Africa countries.

The government recognises the importance of the private sector health services and assists some of the non-profit making and voluntary agencies by subsidizing some of their operating costs through tax exemptions, and even in some cases by seconding medical personnel on public payroll to their health institutions.

1.4. HEALTH CARE FINANCING IN KENYA

Provision of health care has become an expensive undertaking to many countries. Health care costs and expenditures in developing countries have been growing markedly faster than their gross national products in the last decade. This has occurred in the face of high population growth in these countries. Faced with laudable but desperately ambitious aims in health care, a wider concept of the health sector and increasing financial pressures, many countries are trying to reorientate their health services and other health activities. An important aspect of this trend is by paying attention to economic and improved operational efficiency [13].

"Money fuels the health care delivery system, but the routes the dollars take from the consumer to the providers can be labyrinthine. Some money goes directly, some to the government, some through Insurance companies ....."[14]. This adage is as true in the United States as it is in Kenya. The government is the largest spender on health services, but the spectrum of possible sources of finance for health care is quite wide. Private spending on household care is the next largest. Households sources of funds derive from private insurance and out-of -pocket direct spending.

Since 1963 , goals of the Kenya national development plans and the subset of specific health sector goals have moved at least conceptually along parallel paths. In charting the course of development following independence, the government has endeavoured to bring health services to the largest proportion of the population possible, with a main objective of continuing

to promote and protect the health of each and every person. In pursuit of this, it has been noted that the achievements of the past have created the impetus for the future extension of health services to a wider sector of the population; however if the present trends continue, the evolving system will not only deny the benefits but breed more inequity and unnecessary cost to all Kenyans . The low income population in general will bear most of this burden, when the anticipated benefits of this natural investment in health care are not realized [15].

The proportion of resources allocated to health by the Kenya government in recent years has been distinctly lower in the development budget than it has been on the recurrent budget [16]. While the proportion of the recurrent budget devoted to health has slightly increased, it has correspondingly decreased on the development budget.

An examination of expenditure statistics presented in Table 1 indicates that the MOH has been consistent in the allocation of finances across the public sector health programs. However curative care has consistently taken the lion share of the recurrent expenditure of the MOH.

TABLE 1. Recurrent and Development Expenditure as a Proportion of Total Gross Expenditure in the MOH [17]

YEAR	RECURRENT EXPENDITURE PERCENTAGE	DEVELOPMENT EXPENDITURE PERCENTAGE	EXPENDITURE ON HEALTH AS A % OF GROSS EXPENDITURE
1980	80.26	19.74	7.0
1981	80.58	19.42	6.7
1982	84.11	15.89	6.3
1983	89.01	10.99	5.9
1984	84.88	15.12	5.9
1985	87.54	12.46	5.4
1986	88.17	17.83	6.0

Source: Ikiara (1988) From various issues of the Statistical Abstract, Central Bureau of Statistics, Ministry of Planning and National Development.

From the Table it is apparent that the financial allocation in the health sector has changed very little over the years. Since demand for public health sector services must be expanding with population increase, one of the obvious conclusions to be drawn is that there is chronic under funding of the activities in the public health sector. This situation needs to be corrected. Recurrent expenditure has been taking the 'lions' share probably at the expense of development finance, preventive and promotive programmes. Local sources of development funding must be dwindling relative to local funding requirements. The MOH policy, is to provide and sustain high quality health services, improve effectiveness and efficiency of the current programmes. In addition G.O.K. has proposed to generate more resources for the health sector in order to improve the quality of health care improve equity in the health service delivery system and control

public sector spending on curative care [11].

Several weaknesses in the health financing policy can be identified. These show that there is a 'generation crisis' in respect of meeting the country's goals for health for all by the year 2000. There is a growing gap between the financial resource requirement for the health sector and the proposed resource availability from public budgetary sources [17]. At the same time there is a drop in effectiveness and maintenance expenditure. These observations therefore identify the health financing problem as having the following components:

(1) A relative decrease and inadequacy of public revenue;

(2) An increasing demand for health service;

(3) Recurrent expenditure revenue gaps;

(4) Recognizable impact on services and service delivery.

The impact of resource deficits as identified by these components have manifested in the chronic problems that are afflicting the public health facilities. There are alarming reports of chronic shortages of drug supply, lack of linen and other health utilities, broken down medical equipment and vehicles.

Government expenditure on public services has been growing at a faster rate than revenue generation. New mechanisms for controlling public expenditure and financing public services have had to be evolved.

The following policy issues have been recognized by the government :

(1) The need to use non-governmental resources more effectively to achieve health sector objectives;

(2) The need to examine the possibility of restructuring and/or reorganizing the health sector as a whole, and especially, the public health sector, through decentralization of government health services;

(3) Sessional Paper No. 6 of 1981 recognises that it is now necessary for those benefitting from public services to be involved in cost-sharing;

(4) Health insurance and risk sharing are underdeveloped programmes in the Kenyan health sector as a potential sustainable source of health care financing [17].

With the financial support from the central government sources dwindling, alternative sources have been experimented successfully in many countries. Particularly communal self-help and cost-sharing have been found to be promising. These two mechanisms are implemented along the concept of primary health care - 'community participation in their own health'. Training local residents in health promotion and first aid skills is one type of communal self-help. The Chinese example of providing medical care through paramedical personnel recruited within the community has been very successful [18]. Training of Traditional birth attendants is already taking place in Kenya. Another type of communal self-help is in the form of community labour for construction and maintenance of local health facilities including clinics as well as water, sewerage and other environmental sanitation projects. Chogoria PHC project in Kenya can provide an example of a successful communal selfhelp [19]. Thus if well organized these can subsidize the already strained public budget.

Both cost-sharing and health insurance and risk sharing options have variously been adopted in several countries. The latter has been the backbone of health financing in the developed countries.

Cost-sharing is a new policy measure being adopted to create alternative financing and / or supplementary sources of financing social services especially in developing countries.

Both options are major policy decisions in health care financing systems. Their applications and implications to health services delivery and experiences gathered from several countries will be discussed in details in the section of literature review.

Cost-sharing was introduced in Kenya since 1st December, 1989 in various aspects of both outpatient and inpatient care. The following schedule for cost-sharing with some specific instructions was implemented in all government health facilities [20]:

OUT PATIENT SERVICES

Government dispensaries

No fees were to be levied for services in dispensaries.

Health Centres

The fees levied for services was to be Ksh 10 per month per patient while subsequent treatment was to be provided at no extra cost for the next thirty days. Payment at lower facility did not entitle the user to a reduced fee at a higher facility (i.e. District or Provincial hospital). However payment at a hospital

entitles the user for outpatient care in a health centre on production of a validly stamped receipt.

Hospitals

The charges were to be Ksh.20 for a period of 30 days while subsequent treatment at any hospital was to be provided at no extra charges for the next thirty days.

The Ksh.10 and 20 charged in health centres and hospitals for outpatient services were subsequently withdrawn with effect from

1st September,1990, through a government directive [21]. However the following schedule for inpatient and other services were retained.

INPATIENT SERVICES

Health Centres

The charges levied per day per admission was to be Ksh.10 for a maximum of five days, and any subsequent stay thereafter will be free. A patient transferred from a health centre to a hospital on referral basis would change to hospital level fees within the limit of five days for both levels of care.

Hospitals

The charges to be levied was to be Ksh.20 per day per admission for a maximum of five days. Any stay after five days would be free. An inpatient under N.H.I.F. Scheme would not be limited to five days payment. He or she would pay for the total number of inpatient stay in accordance with existing insurance

rule.

In both health centres and hospitals, no fees were to be levied at all for treatment of children under five years old, antenatal and postnatal care, family planing, treatment of tuberculosis, sexually transmitted diseases and AIDS, leprosy and psychiatric disorders.

MATERNITY CARE

Health centres

These would charge Ksh.50 per day after delivery.

Hospitals

These would charge Ksh.100 per day after delivery. The fee was later reduced to Ksh.20 per day after delivery until they left the facility for both health centre and hospital through a Presidential directive of 23rd January 1990 [22]

Amenity wards

Hospitals without amenity wards were requested to use available resources to provide some ward amenities. The fees to be levied was Ksh.200 and Ksh.300 for a single and shared room respectively.

Medical Examination

A fee of Ksh.100 would be levied on all patients.

Private Physiotherapy

A fee of Ksh.100 would be charged.

Radiological examination

A fee of Ksh 25 would be charged for routine X-ray examination and Ksh.100 for special X-ray examination, this to apply for both inpatient and outpatient.

Laboratory Examination

For routine laboratory examination of urine and stool,the fees was Ksh.10 and Ksh.20 for special laboratory tests.

Dental Treatment

Extraction and filling was charged Ksh.10 and Ksh.20 respectively. This is to cover for labour only. The materials will be charged appropriately.

Circumcision

A fee of Ksh.50 will be charged. This is in addition to any fee that my be paid to the surgeon performing the operation. However the total sum of money paid by the patient should not exceed Ksh. 100.

In order to ensure that the funds collected will have the anticipated effects, (to raise funds to bridge the gap between the exchequer funding of health services and the level required to meet the service need) the following guidelines were issued as regards the utilization of the revenue generated.

1. Seventy five (75%) percent of the revenue is to be spent to improve services in the generating institution. For this purpose, the following areas were identified for spending user charges:

(a) Procurement of adequate cleansing materials and detergents for use in the facilities in order to improve the hygienic conditions of institutions and to reduce the danger of cross infection in wards , theatres and other hospital departments.

(b) Provision of hospital linen, patients uniform and food.

(c) Maintenance/repair of diagnostic and therapeutic equipment, fixed plant and equipment, urgent repairs to buildings which pose risk to users.

(d) Renovation of toilets, bathrooms, wards and outpatient departments.

(e) Facelifting of the facilities to improve physical appearance, for example painting of buildings.

(f) Fuelling and maintenance of vehicles.

(g) Improvement of water supply and other services.

(h) Improve security of facilities by fencing or providing security lights etc.

(i) Purchase of general supplies.

(j) Modest expansion of existing facilities for example outpatient departments and construction of modest amenity wards.

. Twenty-five (25%) percent of revenue will be forwarded to the district account to finance preventive and primary health care activities in the district.

In order to ensure access to health care services in case f financial hardships, the following exemption guidelines were rovided:

When a person claims inability to pay , it is the discretion of the designated officer in each health institution to grant an outpatient exemption for a maximum of thirty days. An exemption stamp will be affixed on the health card. The patient will then be referred to the area chief or assistant chief with an exemption form for endorsement to certify his or her financial hardships. Additionally, known cases of hardship should be encouraged to seek exemption certificate in advance [23].

1.5. NATIONAL HEALTH INSURANCE IN KENYA

The National Hospital Insurance Fund (N.H.I.F.) was established in 1966, replacing the European Hospital Treatment Relief Fund and the Asian and Arab Hospital Relief Fund Authority. This is a compulsory health insurance fund for persons over 18 years old who are employed or are self employed and earning not less than Ksh. 1000 per month are required to contribute to the scheme.

Since its inception, members have been contributing Ksh.20. However due to escalating costs in health care, the contributions have been adjusted on a graduated scale according to ones earnings and with a minimum contribution of Ksh.30 since July 1990. Members pay about 2% of their income. N.H.I.F is designed to help workers in the country to meet their hospital bills. N.H.I.F maintains a list of health institutions where members can seek inpatient care. This list is reviewed constantly with a view to expanding it. Maximum fees to be reimbursed for each inpatient day is also set for the various health facilities registered with the N.H.I.F. [24].

CHAPTER TWO

STATEMENT OF RESEARCH PROBLEM

2.1. INTRODUCTION

This chapter describes the research problem.It states the hypotheses, objectives and justification and ends with a summary of the organization of the rest of the dissertation..

2.2. STUDY PROBLEM:

Health services absorb a significant proportion of the government budget. About 7% of GOK total expenditure or about 4% of the GNP goes to health sector. The government is not able to increase the health sector allocation due to resource limitations [25]. With the rising inflation and slow growth of GNPs experienced by many developing nations, many governments are trying to reappraise their health services and other health related activities in order to maximise the net benefits the community obtains from a health service system. To deal with this situation, therefore an economic strategy to fulfil the fundamental objectives and priorities in the health sector need to be adopted. This strategy needs to identify additional sources of finance, and effective methods of producing services so as to maximise the net benefit to society. Thus the required improvements in the health status is achieved without imposing undue barriers to access, burdens of cost or distortions in provision and use of health services [2,26].

The decision to seek medical care is attributable to numerous factors that appertain to individuals, households and the health care provider. Of the individual and household attributes, income, type of illness, age ,sex, education and size of the family have been observed to influence the health seekers'

behaviour especially in relation to utilization and choice of health facility viz. private and public. Among the factors attributable to the health care provider, quality of care (as perceived by the sick person) influence the decision to seek care from a particular facility and/or provider.

There have been alarming press reports on the condition of public health facilities, particularly the chronic shortage of drugs and other utilities, patients' uniform and linen, fuel, broken down equipment and vehicles. This indicates that funds allocated are inadequate.

While numbers and patterns of staffing have improved significantly since 1970, the MOH is now confronted with a situation where buildings and staff may lie idle because of lack of funds to run the facilities. This problem is further aggravated by low morale of the staff resulting in further deterioration of the quality and quantity of services provided.

The public sector has been offering services at no fee for outpatient services and some aspects of inpatient care until December 1989, when the MOH introduced some minimal user charges (cost-sharing). Outpatient fee was withdrawn eight months later while inpatient , maternity, laboratory and X-ray fees were retained.

The effects of user charges on utilization of health services have yet to be evaluated.

The decline in the quality of health services in public health facilities, coupled with the availability of alternative sources of health care, i.e. private, self-care , traditional or no care elicits several questions pertaining to utilization,

equity and access. These questions are:

(i) What is the pattern of utilization of the health facilities ?;

(ii) What is the pattern of health seeking or what influences the choice of the health care provider by a household in the event of an illness ?;

(iii) Is there equity in access to health care ?;

(iv) Are there barriers thereof existing that may characterise the pattern of utilization of all alternative sources of medical care ? and

(v) What is the current out-of-pocket expenditure on medical care by households ?

There is sufficient indication that households do spend a considerable amount of money to acquire medical care; often seldom on some ineffective drugs, or seek care from unqualified personnel. Survey done in Mali, Indonesia and Malawi indicates that traditional practitioners may take up to about 10 % of the annual income of a household [26]. Furthermore studies in Kenya and elsewhere indicate that people value the quality of care they obtain and that the question of the cost is not a sensitive deterrent [26-32]. There are reports of cases where relatives have organized 'harambee' to raise colossal amounts of money to pay for medical bills in high quality health facilities, both locally and abroad.

Although the factors that influence household expenditure and health seeking behaviour are known, the extent to which they do affect these two aspects have not been evaluated among the rural communities in Kenya.

2.3. OBJECTIVES OF THE STUDY

GENERAL OBJECTIVE :

To determine health seeking behaviour, utilization of various health care providers, expenditure on medical care and opinion on cost-sharing in a rural community.

SPECIFIC OBJECTIVES.

(1) To determine morbidity pattern as perceived by the community.

(2) To determine health care facility or provider choice by households for outpatient care, maternity and MCH services.

(3) To determine the influence of the following demographic factors: age, sex, household size and economic status in choice of health care facility and/or provider.

(4) To determine the influence of the following epidemiological factors: type of disease, duration, severity and the person affected in the choice of health care facility/and or provider.

(5) To determine the pattern of expenditure on medical care.

(6) To determine the relationship of household income on the utilization of medical care providers.

(7) To determine community's opinion about the quality of health care provided by public health facilities.

(8) To determine the community's opinion on a pre-payment medical scheme.

(9) To determine the community's opinion on user-charges (cost-sharing) in public health facilities.

2.4. STUDY HYPOTHESES:

(1) Utilization of a health facility or health care provider is determined by the following factors:

   (a) Perceived quality of health care based on availability of drugs,courtesy by health personnel and short queues.

   (b) Economic status of household.

   (c) Type of illness.

   (d) Distance to the health facility.

   (e) Type of health facility viz. private and public.

2.5. RATIONALE FOR THE STUDY

The relationship between health and social well being is reciprocal. It has been known that poverty causes disease, in so far as the conditions of diet, housing, occupation and behaviour associated with poverty contribute to the genesis of illness and disability or death. On the other hand disease has been known to be a cause of poverty. Chronic illness and its treatment may also sap the financial resources of a family, and subsequently leading to the sequelae of - poor diet, poor housing, low education and finally death. Depending on the circumstances, disease is a cause of poverty, or poverty is a cause of disease, and therefore the importance of good health cannot be overstated. Big strides have been made to provide equitable distribution of health services in Kenya in both human resources (medical and paramedical staff), outpatient health care facilities (hospitals, health centres, dispensaries and clinics). Access to health facilities in terms of distance has improved tremendously over the years . By 1977, about 5 % Kenyans were within one kilometre of health facility, 16 % within two kilometres ; 42 % within four kilometres ; 77 % within eight kilometres, while only 24 % were living eight kilometres or more from any health facility [33]. This state of affairs might have even improved since then.

In spite of these developments, scarce information exists on the pattern of demand and utilization of health services in Kenya. Utilization information exists only in outpatient attendance registers of the public sector health facilities and some of the organized facilities in the private sector. Although the GOK has articulated plans for the provision of health

services, one fundamental premise is lacking - i.e. demand and utilization of health services.

Some studies dealing with this issue include Mwabu [28] 1984, on household decisions to seek health care, Mwabu and Mwangi 1986 [29] a simulation study on the effect of user charges on utilization of public health facilities.

In order to improve the financial status plaguing the public health sector, various reforms have been suggested [25] such as increasing the number of amenity wards in government hospitals; raising inpatient charges; and introducing outpatient charges - the concept of cost-sharing. This was implemented on 1ST, December 1989 [12].

It has been noted that the second most important source of health financing in Kenya, next to government allocation is out-of-pocket expenditure [17]. Households spend considerable amount of money to receive medical care; not seldom on some ineffective drugs or seek care from unqualified personnel [26].

This study aims at providing an insight into the factors that affect or influence demand, utilization of health services, out-of-pocket expenditure on medical care, opinion on health prepayment and cost-sharing in public health facilities.

The rest of the text is presented in the following order: Chapter 3 - Literature review chapter 4 - describes the study area chapter 5 - describes methods and materials used in the study chapter 6 - results, discussion, conclusion and recommendation of the study is presented in chapters 6, 7 and 8 respectively.

CHAPTER THREE

LITERATURE REVIEW

3.1. INTRODUCTION

In this chapter relevant work on factors that influence decision to seek medical care will be reviewed. Alternative sources of health finances with particular attention to health financing reforms are discussed.

3.2. DEMAND, UTILIZATION, ACCESS AND EQUITY IN THE DELIVERY OF HEALTH SERVICES.

Health service researchers recognise that in the event of illness there are several options open to the patient as a means of coping with the illness. Such includes self treatment and lay consultation, seeking attention from a medical person or doing nothing at all [34-38].

Before a person decides to seek or use health services, he must perceive a need for doing so. He must be aware of his conditions and feel it to warrant medical intervention; appropriate services must be acceptable to him and he must have ability to obtain the services. The prerequisites comprise a potential determinant for demand, access and utilization of health services.

Demand in general describes the relationship between quantities of the goods or services purchased at the prices charged for them. Demand for health or medical care will therefore mean the quantity of health services the community is able to pay for in order to maintain a good health status. For effective planning of health services, it is essential that demand analysis should be conducted in order to determine the factors that need consideration if the right services to satisfy

the demand and need for health goods in any given community are to be provided.

The way prices, income and other variables influence household demand decisions have been analyzed by several authors. Using different methodological approaches, it has been found that the factors that influence demand can be divided into three broad categories - namely the health service price; facility specific attributes; consumer and environmental factors. These studies have also attempted to identify and measure the relative importance of these factors as they affect peoples' health care decisions [27,28,30,31,39]. Their findings are discussed elsewhere in the text.

Biltran observes that demand is determined by a number of variables. He identifies consumer's income; the prices charged for health services; the quality (as perceived by consumer); coverage by third party payment mechanisms and the distance that a consumer has to travel to obtain the health services available to them [27]. Demand for health care is also conditioned by demographic, biological, socio-cultural and institutional factors. Akin et al. have developed a model for determining health service demand in which they have identified the determinants for health care as price, income, time allocation, health needs, demographics, urbanization, knowledge and seasonality [39]. Other studies have shown that proximity to the health facility is an important variable in utilization of health care [27,40].

Waiting Time:

Waiting time is an important deterrent to the use of medical

services. Bamusaye et al. concluded that waiting time deters mothers from seeking health care especially for preventive and promotive care [41]. A similar conclusion is arrived at by Kloss et al., that for working poor especially mothers with heavy demands on their time for child care, other domestic chores and agricultural work, the opportunity cost of waiting time can be extremely high resulting in decreased demand and therefore reduced utilization [42].

Quality of health care:

Although quality of health care is an important explanatory variable for demand decisions, there is no general consensus as regards what constitutes good quality health care, or what is acceptable quality health care to the consumer. Various aspects of a health facility have been used in determining the quality of health care. Some of these aspects include the presence of a doctor which has been used by Akin et al [39], and the availability of drugs, equipment and laboratories which has been used by Mwabu [28,30]. In whichever way it is expressed, quality of health care is an important variable that determines demand and hence utilization. Biltran argues that by virtue of the strong preference for private sub-sector curative care, residents of Santo Domingo, who include low income group have demonstrated their willingness to pay for health services of good quality, and which are more efficiently provided. Charging fees will not significantly reduce demand. Consumers crowd themselves into institutions where personnel have more training, equipment and laboratories are more complete and hence better quality [27]. Mwabu and Mwangi in " A simulation analysis of preference for

health care providers" demonstrated that improvement in the quality of small scale health facilities would increase their utilization [29]. A similar conclusion was reached by Kloss [42]. A more recent study in Ghana concluded that, the higher attendance rate to mission health facilities following increase in prices in government hospitals was believed to be due to the better perceived quality of care in the mission facilities [43].

Price :

The relationship between " level of price" and "quality" of health care, income and utilization of heath care services has received a lot of emphasis in demand studies, especially when considering health financing reforms that call for introduction of fees where they did not exist, or raising them in order to generate additional revenue for financing health services [29]. From these studies various conclusions have been evolved.

Prices charged by different health care providers do not seem to have significant deterrent to utilization of health services. Evidence from surveys on household indicate that prices are not critical in determining health service utilization [27].

However this statement has been disputed in several studies. Sensitivity to price and quality differences from different health care providers was observed in one of the earliest health care demand studies in a developing country [31]. A study in Swaziland more recently showed that there was a substantial demand diversion in response to a policy decision to raise charges which was believed to result from a non accompanying quality increase as perceived by patients [44].

There are numerous characteristics of the household or population at risk that condition demand, access and utilization. These can be classified into three groups: predisposing; enabling and need conditions. There are family characteristics which exist independent of specific illness episodes, which may have a direct effect on utilization of health services, or serve as proxies for the factors that are.

Age:

There exists conflicting findings regarding the influence of age on demand ,access and utilization of health services.

Theoretically, there should be a 'U - shaped' relationship between health care use and age. Infants and preschoolers are usually more vulnerable to infectious disease because of their immature immunological systems and greater growth needs. Accordingly, infants and preschoolers would be expected to have a high level of use of health services. If children survive these years, the need for outpatient care would be expected to fall until degenerative diseases begin later in life, i.e. in old age. Biltran substantiated this argument in his observation that children under one year constituted the group with the highest proportion of those with a health problem who actually sought medical care, whereas children aged five to fourteen years constituted the age group with the lowest fraction of the reported illness seeking professional care [27]. Johnsen-N et al in their study on use of general practitioners' services by families with children found that age was not an important determinant of contacts and other factors such as the preference of chronic illness and psychological stability in parents were

more important [45]. Hortwitz et al observed a high utilization rate for younger children, but this rate was nearly identical to the scheme recommended by the paediatrician in the study group and therefore concluded that the pattern of utilization may as well be due to provider-induced demand [46].

Sex:

Although the biological differences between male and female could presuppose a distinct behavioral response to illness, there is no evidence to support this view. Several authors have demonstrated that adult females report more morbidity and disability and more frequent use health care services but have a significantly lower age-adjusted mortality rates. The obvious conclusion drawn from these conflicting findings is that there is a strong interplay of an underlying physiological difference with socially determined role perceptions and illness orientation which lead to greater reporting of symptoms [47-52]. Nathanson noted that the greatest difference in illness behaviour are observed in young and middle adulthood when traditional family roles of men and women are most divergent [47,48]. These sex differences during middle adulthood persist when the symptoms, disability and physician contacts associated with pregnancy are controlled for. This has also been demonstrated by Meininger using a multinomial logit analysis technique to determine whether men and women differ in the tendency to respond to their symptoms when behaviours other than the use of medical care are considered. Similar distributions of behavioral responses to symptom complexes for men and women were found and further that the female:male ratio for use of medical care was close to unity.

It was further demonstrated that the sex differences in seeking medical care arose due to other social factors such as social class and family composition [51].

Family size:

Family size might affect the predisposition of its individual members to use of medical services. A Large family size increases the probability of overcrowding, inadequate food intake, implying closer physical contact which tends to enhance the spread of infection and susceptibility to infection respectively. Thus one would expect a greater level of utilization of health services for larger families. However this view is challenged by Bamisaye et al. [41] and Fielden [53]. Fielden in a review of literature cites studies that indicate that grand multiparae under utilize various services because their large families simply make too many demands on their time. Hence other things being equal, individuals from large families tend to have less access and hence less utilization.

Education:

Investigation in many countries and even in Kenya have consistently shown that educated women lose fewer children during early childhood than those without education. Formal education for females if sustained until a socially recognized minimum threshold such as primary school is passed, is thought to produce a different attitude to the environment. The schooling experience is powerful because it is not confined to acquisition of specific knowledge but also increases capacity to take effective action in a multiplicity of situations [54]. Here in Kenya it has been demonstrated that acceptance of family planning methods and the

number of births is associated with the number of years of schooling [55,56]. Education of an individual may also have an influence on access and utilization. Osborn et al. demonstrated that increasing the level of education and income increases use of Mother and Child Health services [57].

Income:

The view of health problems associated with low income levels depicts income as a predisposing factor to poor health. The poor people suffer from all atrocities of poor health. Poverty is synonymous with vulnerability to disease [13]. Economic vulnerability may affect health in multiple ways. Variations in income are likely to have important implications to health through their effects on quality of diet and home environmental hygiene. Belgin demonstrated that richer households not only can afford to use such means as soap but also have piped water supply and more efficient disposal facility which encourages the use of soap. These households have more educated mothers [58].

Poverty is a chief determinant of the unique characteristic of rural health behaviour in developing countries. It is not enough that individuals or family predisposed to poor health is also predisposed to using health services. Some means must be available for them to actually enter the health market. Kloss et al. observed that one factor that promoted use of remedies for treatment of abdominal problems was lack of money to pay for transportation to modern health facilities [40]. Moreover it has been demonstrated that low income is a deterrent to utilization of medical care services. For example Newacheck demonstrated that

a low household income is a barrier to the use of modern primary medical services, even where they are publicly provided [59]. A similar observation was made by Frank et al, that a "significantly lower" percentages of uninsured patients are admitted to for-profit hospitals than to secular or church affiliated non-profit hospitals and public hospitals. Sharp differences in length of hospital stay and higher rates of transfer were also observed among this group [60]. The authors concluded that the continued shrinkage of the public health sector has serious potential implication for the overall supply of care to the poor which must be addressed by policy makers at all levels of government [59,60]. A similar observation was made by Shulman et al on utilization of medical services by hypertensive patients. Noting that a greater portion of earnings must be allocated by low income patients to blood pressure control, the study found that the financial factor is important in determining the numbers of uncontrolled moderate to severe cases of hypertension among the low-income persons in the population [61]. Other studies on pattern of health services access following a financing change provide further corroborative evidence that the use of services is more elastic with respect to price among the poor than in higher income groups [30]. In another study Fassin-D et al demonstrated that socio-economic level and social insurance (and education level for mothers) were associated with preference for private rather than public health systems [62].

Illness :

Fielden-A however, in considering the factors that

influence the utilization of health services, points that the availability of services and resources is not enough to account for entry to the system. One must consider the potential consumer's willingness to seek care which depends on his health attitudes and social and cultural definitions of illness [53]. Therefore, the techniques and management methods used in health facilities must be compatible with the cultural patterns of the community. Kloss et al. also notes that recognition of a disease as endowed with one's cultural perception of the disease is a critical determinant for the appropriate preventive and help seeking behaviour [40].

The characteristics discussed in this review provide an understanding of the patterns of demand and utilization of health services. This is crucial to any health policy developments. Any policy changes or health development plans should be critical to these issues such that while effecting any changes, equity to medical care is at all times maintained.

3.3. HEALTH CARE FINANCING

Health care costs and expenditures in developing countries have grown faster than their gross national products in the last decade. The increasing financial pressure has led many countries to reorientate their health services and other health related activities. Efforts to achieve a closer understanding between consumers, providers of services and contributors of finances are necessary in order to address the fundamental issues concerning health, that is - health objectives and priorities, sources and allocation of resources, and efficient and effective methods of producing services. Efficiency in the many existing health programmes can be improved. Improvements in the purchasing, distribution, and use of drugs offer opportunities for significant reductions in costs in many countries; even without changes in programs [26]. All this can be construed to address one basic issue - the economic efficiency of resources. This is a very broad subject which cannot be covered in the context of this dissertation. Therefore in this section I will delve only into the subject of alternative sources of health care financing, the rationale behind it and the experiences of a few countries.

Experiences in Kenya and elsewhere indicate that although levels of public health care spending through ministries of health have been maintained constantly, there are clear indications of gross underfinancing, especially considering the increased demand generated by high population growth. This reduces per capita health expenditures and more so a greater reduction especially in capital expenditure has a negative effect on health service expansion. Due to underfinancing, public

services may deteriorate as maintenance of hospitals and PHC facilities, as well as equipment repairs or replacement are postponed, with an overall deterioration of the quality of health care services.

In the face of a continuing scarcity of public resources, several studies have generally addressed the issue of community financing, insurance mechanism, the private sector sources of health and administrative decentralization of health services as policy directions to resolve the escalating health service costs [26,63-67]. In this section I will delve into two main issues, community financing featuring cost-sharing and health insurance, the rationale behind these policy options and the experiences of a few countries.

3.3.1. COMMUNITY FINANCING

Community financing has diverse interpretations. Often Community financing is interpreted to entail "some collective " directed at the creation of health facilities. In this case individual or household spending on medical care through ordinary free market purchase of health goods and services would not be regarded as community financing. The phrase 'Community financing' has often been used to express the contributions that are made to support part of costs of health care by individuals, families or community groups, both in kind, payments and/or in labour. Community financing has been documented in many cases to support either capital or operating costs of health activities or both. As capital contributions, donated time and purchase of raw materials by communities have produced community financed health

facilities which the government has then been asked to staff and supply with materials. There is widespread evidence even in poor countries of a willingness of communities to make sacrifices for the construction or upgrading of health amenities or even hospitals [8-11,66,69].

User fees (cost-sharing) and health insurance have aroused greater interest with regard to their potential to contribute to improvement of the financial base of the health sector.

USER FEES (COST-SHARING)

'User fees' refers to charges imposed at the time a service is provided. Despite the widespread conviction in LDCs that health services should be provided free of charge, user fees are widespread. Most private spending on health is in the form of user fees [64,65]

Cost sharing as a source of health funds has been the focus of many lively debates during the last few years. In an attempt by the governments to guarantee the availability of free medicines - unfortunately 'free' medicines all too often means no medicines - a number of schemes have been developed in the public sector under which the community is required to pay for drugs and/or other health services.

The argument behind most of these initiatives is that individuals already spend quite a large amount of their income on drugs, bought mainly by brand names at high costs in the private sector. It is argued that if the availability of essential drugs under generic names at low costs can be ensured in the health facilities, people would be willing to pay for

these at a price which would eventually permit the financing of other costs of health services.

Early studies on user fees have mainly addressed broadly 'willingness to pay' and examined various variables that affect demand and utilization such as quality and income. In such studies, Akin [39] examined the relationship between price and income on one hand and demand for health care on the other hand.He concluded that "Price and Distance" are not nearly as important determinants of demand as usually assumed, and he argued for a greater scope for the full or partial financing of outpatient services from user fees as a result of this conclusion. Mwabu [28,30] argued that the quality of health care is the sole determinant of demand and utilization of health care, while prices or user fees would be a lesser deterrent factor, hence implying a high potential of user fees for financing health services in Kenya.

Several studies [43,44,67,71] have been able to review the effect of policy changes in health system utilization patterns following a financing policy change. These have demonstrated contrasting views with earlier assumptions on demand, utilization patterns in the health provider sub-sectors and equity. Gertler et al in a study to examine the consequences of various specific policy options, found that increasing user fees charged in public health facilities would not greatly deter residents other than the poorest from seeking care, although it would affect two other choices - subsector choice and type of facility. This study concluded that increasing user fees for ambulatory care at public hospitals in Lima while maintaining the present fee schedule at

the city's public health centres and health posts would result in almost no change in the total number of outpatient visits to health care providers. But it would considerably increase visits to public health centres and posts as well as to private clinics, thereby reducing hospital use [70]. More recent papers provide corroborative evidence that the use of health services is affected by charging fees, where they did not exist or increasing the existing fees and that use of health services by the poor is more affected by price increases than use by the rich. A study in Zaire reported by Creese [67] showed that a rapid relative increase in the price of health care (in comparison to changes in price of standard food item - eggs) led to sharp falls in the demand for curative contacts - prenatal and under five clinic visits. The overall utilization fell from 37 % to 31 % in a defined population and the coverage rate for prenatal contacts fell from 95 % to 84 % . This study concluded that, at low income levels, the demand for health care (of constant quality) is more elastic with respect to price among the poor than in the higher income group. Also they found that the amount recoverable through user fees was not as large as had been expected. Over pricing may exert an unacceptable costs in terms of service accessibility and thus very likely also in terms of equity. In Ghana a retrospective study to compare utilization levels in government health facilities before and after a major increase of charges in 1985 demonstrated a similar drop in utilization [43].

Sensitivity to price and quality differences from different providers was observed in one of the earliest health care demand

studies in a developing country [31]. This has also been demonstrated in a more recent study in Swaziland. A substantial demand diversion was observed after raising charges by 300 - 400 % at government health units to the same levels charged by non-government (missions) providers of health care and with no accompanying increase in quality as perceived by patients. An abrupt and large scale shift in utilization away from government sources of care was observed. A 32.4 % drop in government facilities and towards mission hospitals a 10 % increase was observed. An overall drop of 17.4 % in utilization and a substantial number of patients moving away from modern medicine to unrecorded sources of care or 'no expressed demand' was also noted. One year after the initial price changes, there was a further decline in the level of use of government health facilities. The study also demonstrated a disproportionate drop in utilization by the poorest, and in particular decline in the use of government services for STDs and respiratory diseases, leading the author to conclude that "the wrong people have left the system"[44]. There thus seems to be some further validation of the experience in Banglandesh - that fees are likely to damage the health interests of the population at large by deterring patients with communicable diseases [66]. A 1989 study in Lesotho to monitor the effects of increasing fees at government health facilities from July 1988 concluded " attendances at all government facilities examined dropped appreciably after the increases in fees, particularly at mountain facilities. At lowland facilities, attendance levels began to creep back upwards again. The trends observed about the data from these facilities

suggest that attendance levels would be soon at their pre-fee increase levels. A second issue of concern is the impact on the 0-5 age group. This group, the most vulnerable, appears to have suffered the most as a result of the fee increase [71]. In another study in United Kingdom, after extending and raising the charges for certain services provided by the National Health Services, while comparing non-exempt and exempt patients, it was found that for dental care, the non-exempt was four times more likely to receive emergency care only; 340 times more likely to receive a check-up only; and that in receiving treatment receive 40 % less treatment [72]. The author also quotes a Canadian experience as having shown that the introduction of consultation fees in one province led to a reduction in attendances by the poor three times more than that of the population as whole. The findings of the Canadian study also imply that at least some of the services deterred by charges lead to adverse health outcomes.

The evidence in these reviews appear to confirm that whilst user charges for health care can generate additional income. They also deter the patients at greater risks from seeking care. The demand diversion effect of charges thus appears to be having important and sometimes deleterious effects. It is clear that a trade off between health status and revenue generation is being implemented, often unwittingly.

From the above experiences the following questions arise:

(1) How much should be charged?

(2) What are the specific services that fees should be levied?

(3) What use to which the revenue collected is to be put?

(4) What effects does it have on equity distribution on health

care?

The World Bank [26] has set forth guidelines to address these questions. With respect to the amount of fees to be levied, a carefully discriminating fee system is suggested such that revenue is collected from only those people that can afford to pay. On which services should user charges be levied, the most and obvious sector is the curative services, where it is easy to identify the direct beneficiary. People are willing to pay for private good rather than for public goods. As regards the use to which the revenue is to be put, user fees can be said to be a redistributive vehicle of resources. This is achieved by using the income to improve service quality and further subsidizing access to care for the indigent.

In a review of experiences in user charges, Creese concludes that there is little evidence as yet of success in redistributive role of access to health care by collection of user fees [67]. An illustrative case for such a conclusion is that of Ghana. Although the functioning of the local health units was improved by the possibility of making local purchases for maintenance and minor repairs etc.,the effect on service quality was too little or too slow to re-attract the patients deterred by the price increase [43].

In order to ensure equity, a carefully discriminating fee systems are necessary to ensure that revenue is provided only by those who can afford to pay. This entails a means-testing of patients in a way that does not jeorpadize their access and redistributing the funds to primary health actions at the peripheral level. The most promising potential location for

enforcing payments related to use would seem to be in the use of inpatient services in secondary and tertially care facilities such as the district, provincial hospital and Kenyatta National Hospital. However such a redistributive mechanism still poses a basic question of whether it is realistic to pursue such a selective revenue raising system and expecting a transfer of revenue collected away from the hospitals which yielded the bulk of the income, for quality improvements of the primary health care system.

HEALTH INSURANCE.

In this section, the concept of health insurance, type of health insurances and their potential as a source of health care financing is discussed.

Health care needs are random and unpredictable in individuals and families, and often unaffordable to individuals if they have to pay the full cost of treatment as it occurs.

The essence of health insurance is the sharing of risks. It is a mechanism designed so that those who are fortunate enough to be healthy pay for those who are at risk; with a clear understanding that should those who are well now fall sick later on, their costs will in turn be covered. Health insurance can be seen as a formalization of the mutual support system to be found in villages throughout the world, based on the notion that 'I will help you in your current need because this places a clear obligation in you to give me help; should I need it '. Helping others builds a capital of obligation, and in the village situation social control ensures that obligations are honoured. In the modern insurance model, careful calculation of risk against premium ensures that money is available to meet future obligations. Provision of medical services through pre-paid contracts with doctors was first started in 1910 in Washington.

There are two main types of health Insurance schemes which are applied generally in health care systems - private health Insurance and public (national) health insurance schemes. The former is a voluntary type of insurance whereby individuals and/or their employers remit a certain amount of premium to an insurance underwriter to cover for their own health needs. The

latter is a compulsory contributory fund developed by a state and all persons in gainful employment must contribute a certain amount of their income. In Kenya almost all private health insurance is linked to employment as the employer generally pays a substantial proportion of the members' contribution.

Where private health insurance is widely developed, it is obvious that it offends the principles of equity in health on the grounds of affordability by most of the citizens. It is against this background that its merits as a potential source of public health care is considered. There are several fundamental reasons why funding health care from private insurance or fee-for service reimbursement will lead to gross inequalities in health care [73,74]. First, such a source will only pay for health care of the individuals who contribute. This is likely to lead to the development of separate systems of health care; a luxurious and over-endowed private sector serving the priveledged few and an underfunded public sector providing inferior care for the majority of the population. This will lead to an excessive concentration of health care facilities and health care providers in those centres where the private contributors are concentrated. Secondly administrators of private medical insurance have an interest in excluding high-risk patients from membership. This occurs either because the insurance scheme is run by a profit making body that does not wish to pay the medical bills for high risk patients or because they wish to keep premiums as low as possible. Ginzberg-E notes, in the USA, this has led to the practice of insurance agencies competing for the lowest risk patients who they take at preferential rates. The result is that

high risk patients can only get care at considerably higher premiums. Equity is therefore discarded as each person seeking insurance is risk-rated and the lowest risks are 'skimmed-off',and any subsidy from the well to do to the poor is lost in the process [75]. Thirdly privately funded care is almost inevitably pays only for curative health care where benefits are more visible to the individual, therefore leaving the state to subsidize preventive care of the privately insured individual. Finally existence of competing multiple private insurance agencies will by itself produce more fragmentation, making it more difficult to develop and coordinate policies aimed at rationalizing the provision of health care.

With these drawbacks in private health insurance, it is deemed not to be an appropriate source of health care funding. A centrally co-ordinated funding mechanism may be a better choice. Such funds to pay for central funding must come from the general tax revenue available to the government, or from some additional contributory scheme. The most common such scheme is a national health insurance scheme. This is a compulsory scheme for persons in formal employment. Contributions by members are matched by employers. The money thus raised may be administered as a separate fund to pay the health care of contributors, or it may be pooled with other sources of revenue and used to pay for health care.

The merits and demerits of national health insurance versus general tax revenue as sources of health care financing have been argued by several authors. Abel Smith in his criticism points that insurance funds generated are mainly controlled by

departments of labour thus fragmenting health services or by some administrative structure that is not politically accountable. He further argues that because health insurance contributions in developing countries come largely from an employed urban elite, they pay for health care in which undue emphasis is put on curative care and thus developing a two-tier system with far better care available to those who contribute to the insurance system [68]. Mills- A. in her support for a national health insurance has advanced the argument that in the developing countries, there is usually a low ceiling on revenue that can be raised from income tax, and that other forms of taxation such as sales tax tend to be regressive, thus penalizing the poor more than the wealthy. She further asserts that it is easier to convince the relatively well-of to make additional payments earmarked specifically for health care, than to pay for expanded health services [76].

Application of this review of literature with respect to cost-sharing and health insurance in Kenya provides a useful guidance to any policy reforms with an aim of mobilizing community resources for supplemental financing of health care.

CHAPTER FOUR

STUDY AREA

4.1. INTRODUCTION

This chapter describes the study area both geographically and administratively. Importance of the ecological zones in the district on socio-economic status of the community and socio-economic infrastructures that have an influence on health status is highlighted. Figures 1, 2 and 3 shows the geographical and administrative details of the study area.

4.2. PHYSICAL DESCRIPTION

Kirinyaga District covers 1,437 square kilometres and is approximately 0.3 % of Kenya's total land area. It lies between latitude 0^{0} 8^{1} and 1^{0} 1^{1} South and longitude 37^{0} East. Kirinyaga is one of the five districts of Central Province . The others are Murang'a, Nyandarua, Kiambu and Nyeri. It is bordered on the west by Nyeri and Murang'a districts and Machakos and Embu districts on the eastern and southern parts. The northern part of the district is covered by Mount Kenya forest occupying 308 sq. km., which is about 21 % of the district.

(See Figure 1 - Map of Kenya showing location of Kirinyaga District).

Figure 1.

Map of Kenya showing the location of Kirinyaga District.



4.3. ADMINISTRATIVE AND POLITICAL UNITS

Kirinyaga district has three Divisions, Ndia, Gichugu and Mwea, fifteen Locations with seventy five Sublocations. For political boundaries, the district has three constituencies which have the same boundaries and names of the divisions. There are two Local Authorities in the district, Kirinyaga County Council and Kerugoya/Kutus Municipal Council. The Kirinyaga County Council covers the whole district and has sixteen wards, each represented by a Councillor. Kerugoya/Kutus Municipality covers the two urban towns named after it. Kerugoya Town is also the seat of the District's administration with all the offices of all government departments represented. The Kirinyaga District Hospital is also situated here.

The study was confined to Ndia division, with the study population selected from across the division and occupying all the agro-ecological zones of the district.

(See Figure 2 and 3).

Figure 2.

Map of Kirinyaga District Administrative and Political Boundaries.

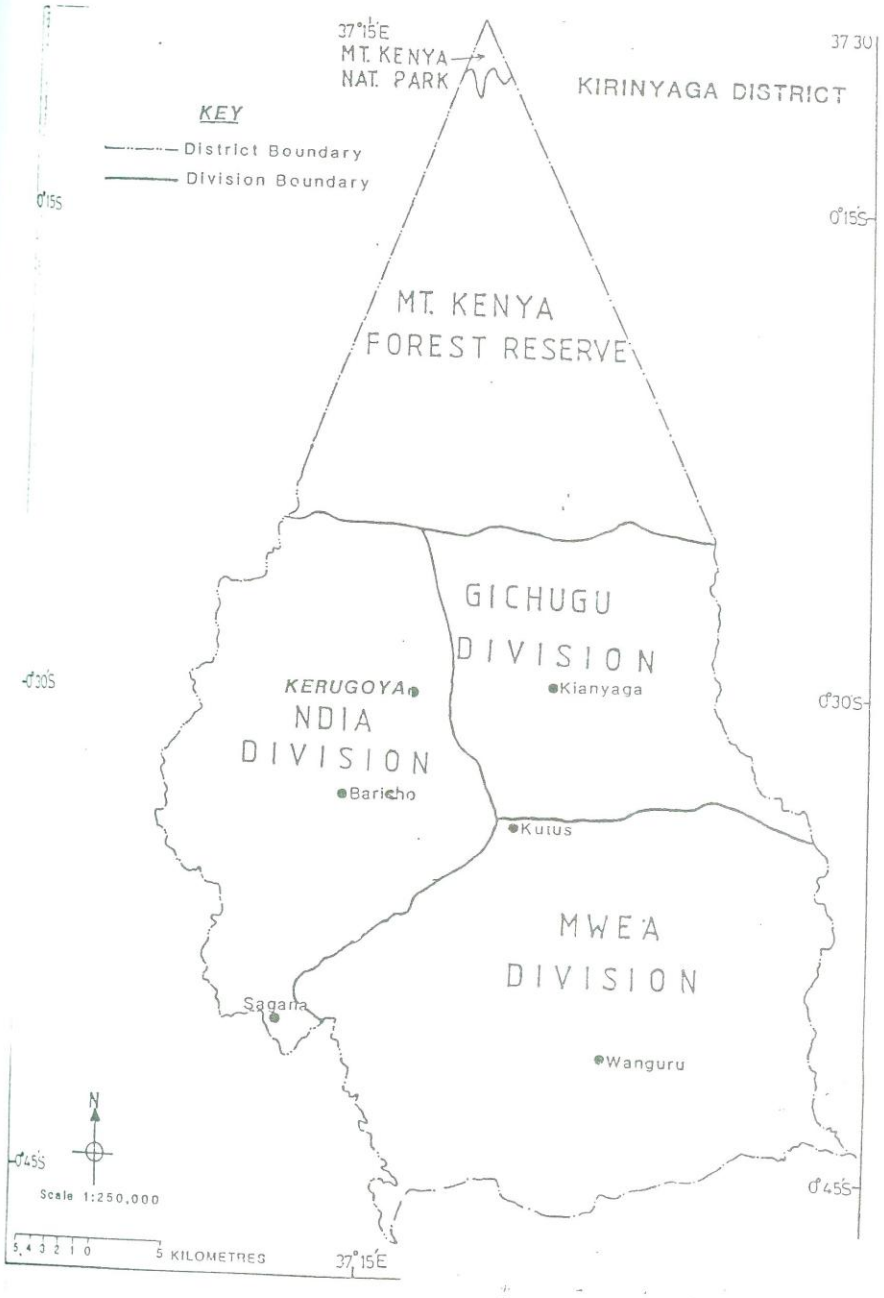
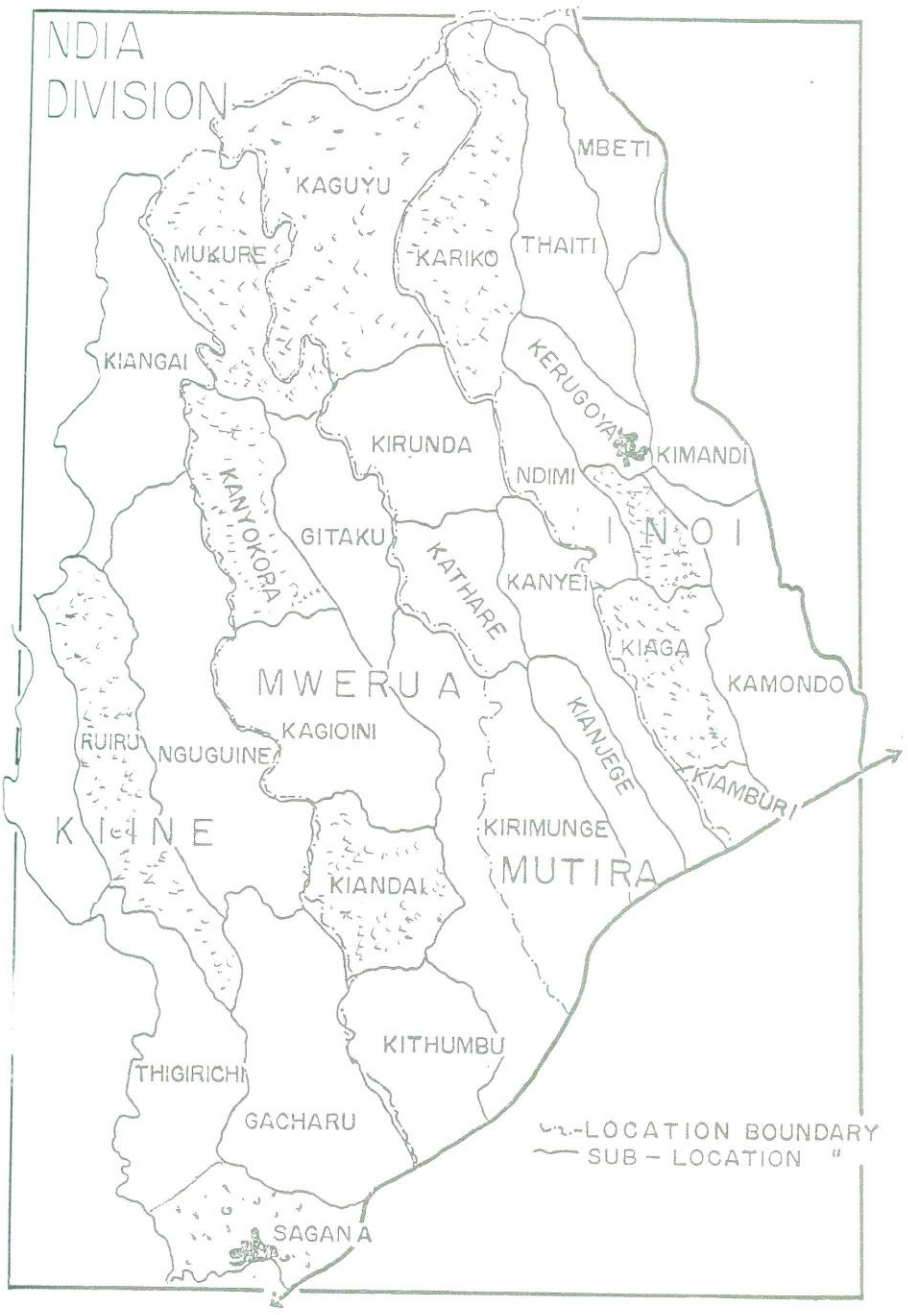


Figure 3.

Map of Ndia Division showing the study areas.



4.4. CLIMATE AND ECOLOGICAL CONDITIONS

The northern part of Kirinyaga is covered by Mount Kenya forest occupying 308 sq. km. which is about 21 % of the district. The district gets two rainy seasons, the long rains during March to May and the short one during October to December.

Most of the upper parts of the district, covering most of Ndia and Gichugu divisions receive rainfall of between 1015 mm and 1200 mm per annum. The lower zone, covering small areas of Gichugu and Ndia and almost all of Mwea division receive rainfall of between 700 mm and 1000 mm per annum. A small portion of Mwea bordering Machakos district receive less than 700 mm of rainfall per year. This difference in rainfall distribution do affect both the agriculture and ecological environment of the district.

The upper zone of the district is favoured with good moderate climate while Mwea has dry and hot temperatures.

4.5. SOCIO-ECONOMIC PROFILE

Kirinyaga district is essentially an agricultural district with most of its inhabitants being small scale mixed farmers.

The district is divided into distinct agro-ecological zones of varying agricultural potentials, with 60 % being situated in the high potential zone. The district is divided into four agro-ecological zones based on altitude and rainfall (See Table 2). Zone LM_1 and LM_2 located over 2000 m. above sea level and with a high rainfall. This area is favourable for coffee and tea. It covers 33.8 sq. km. of the study area. LM_3 zone is at an altitude of between 1800 and 2400 m. above sea level and covers

41.0 sq. km. Coffee is grown here to a small extent, and also the growing of horticulture starts here. Zone LM_1 covers only 6.0 sq. km. Here cotton, tobacco and sunflower are the main cash crops. Horticulture under irrigation is being introduced and is becoming an important source of income especially in the lower and middle zones. Food crops such as maize and a variety of pulses are dominant in the district.

The main occupation of the inhabitants is farming. The small holders cultivate coffee and tea as cash crops and keep dairy cattle. In addition they grow subsistence crops such as beans and maize. They derive their income from sale of the surplus food. Over 95 % of the population earn their income from farming. The population living in the high potential areas of Gichugu and Ndia division enjoy high income levels due to the presence of more stable cash crops like coffee, tea and dairy farming. The people living in low potential areas of Mwea division have low incomes due to the absence of any stable cash crops. It implies that the people living in high potential areas can afford better welfare facilities and services.

TABLE 2 Distribution of Agro - ecological Zones by Division in square kilometres.

	ZONES			
DIVISION	LH_1	LM_2	LM_3	LM_4
NDIA	16.0	17.8	41.0	6.0
GICHUGU	15.8	4.6	_____	_____
MWEA	_____	39.3	117.0	322.0

Source: Kirinyaga District Development Plan 1989-1993 [77].

The sample of the population studied was derived from each of the agro-ecological zones in Ndia Division.

4.6. DEMOGRAPHIC AND SETTLEMENT PATTERNS:

Currently the total population of the district is estimated to be 402,892 persons which is an increase of 29.11 % over the population of 291,431 recorded during the 1979 census. This reflects an average growth rate of 3.23 % per annum. Based on the 1979 census and a slight decline in both fertility and mortality levels, the population is projected to reach 484,691 by 1993.

Gichugu division which is the smallest in size is more densely populated than the other divisions

The study area has a population of 81054 person (1979 Census) but is now estimated at 123041 persons with a density of 506 persons per square kilometre [77].

4.7. INFRASTRUCTURE DISTRIBUTION

ROADS

Kirinyaga District is well served by a network of roads of various categories constructed and maintained by M.O.T.C.,

Kirinyaga County Council and Kerugoya-Kutus Municipal Council. Most of the roads in the district are concentrated in Ndia and Gichugu divisions and these lead to coffee factories, tea collection centres, factories and major towns. In Mwea the roads are concentrated in the north-west area bordering Ndia division. Most of the roads in the area leading to schools, health centres and grain storage facilities are passable. However, the roads are bad in the upper parts of the district during the wet season and due to poor maintenance.

HEALTH SERVICES

Health services in Kirinyaga District are provided by MOH, NGOs, private practitioners , traditional birth attendants and traditional healers. The extent of the latter practice is largely unknown just like in most of the country.

There are more health facilities in Ndia. Gichugu and Mwea come second and third respectively. The average distance covered to get to facilities is shorter in Ndia than either Gichugu or Mwea. Ndia is favoured in that it hosts the district headquarters, Kerugoya. More health facilities especially private ones are established in Ndia. Accessibility to the facilities is easy because of good roads connecting them. Gichugu division also has good health facilities which are accessible by various road networks. Mwea has the least number of health facilities, but the second hospital in the district is situated here. A family life centre is also based there. There are also mobile clinics in Mwea assisted by NGOs. There are numerous private clinics located in most of the market centres.

The distribution of health facilities in Kirinyaga District

is shown in Table 3 and Figure 4.

TABLE 3 Distribution of Health Facilities in Kirinyaga District

DIVISION	HOSPITAL		H.CENTRE		MOBILE CLINIC		DISPENSARY		MATERNITY	
	NGO	GOK	NGO	GOK	NGO	GOK	NGO	GOK	NGO	GOK
NDIA		1		2	1		2	9		1
GICHUGU	-			1	-			7		1
MWEA	1			1	6			11		1

Source : District Public Health Office.

The five major common diseases are malaria, upper respiratory tract infections, skin, diarrhoea and intestinal worms.

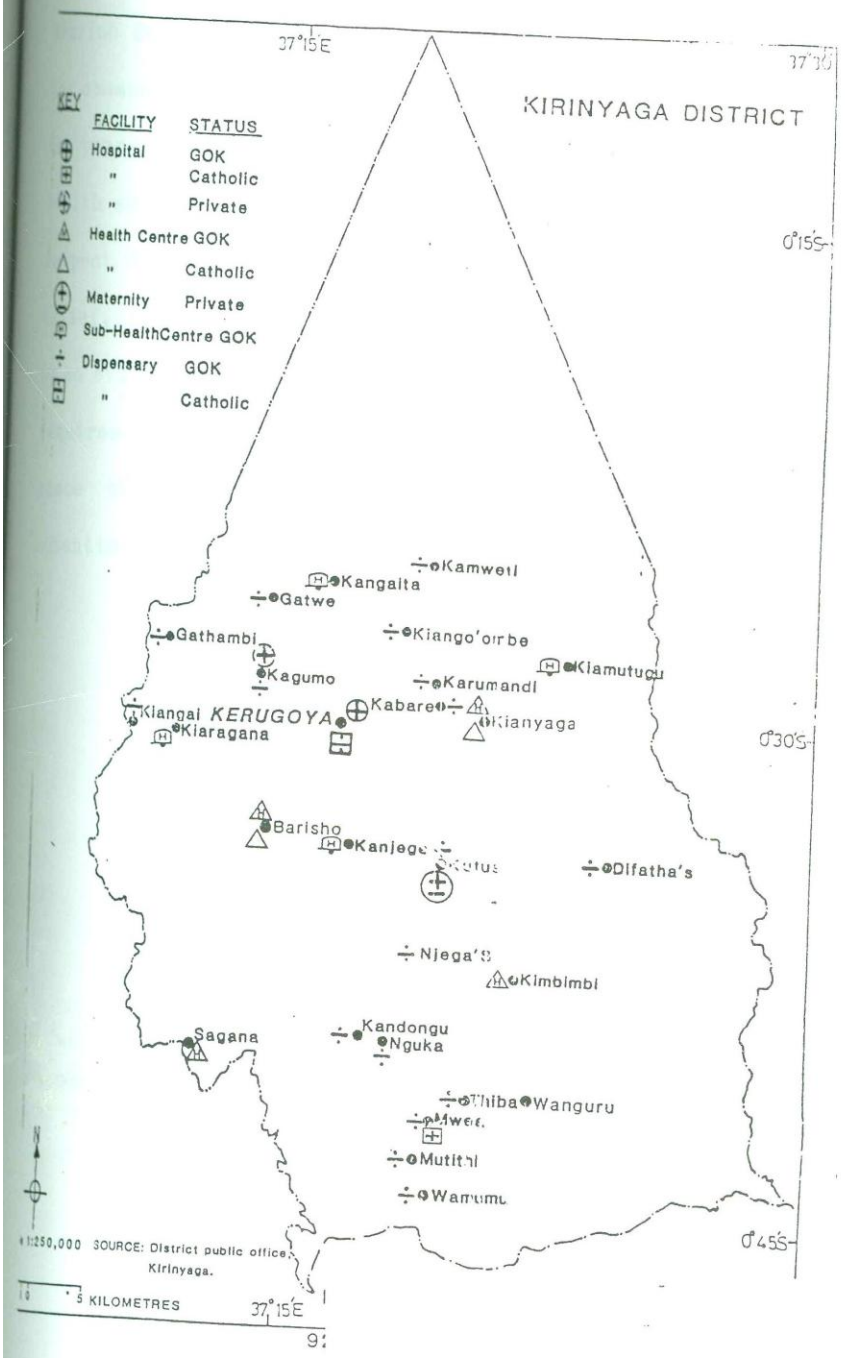
WATER FACILITIES

While most parts of Ndia and Gichugu are served with Government water schemes, most of Mwea division is not. Most parts of the two divisions have been boosted by the high level of self help water projects. Mwea has a smaller element of self-help due to low incomes, hence fewer water facilities. Ndia and Gichugu have an added advantage of being closer to sources of flesh water rivers flowing through the district whose waters become polluted by the time they get to Mwea.

Hospitals and schools in Gichugu and Ndia divisions have adequate safe piped water. Some parts of Mwea do not have adequate water supplies, especially schools, but health facilities are well served.

Figure 4.

Map of Kirinyaga District showing Distribution of Health Facilities.



4.8. SOCIO-CULTURAL FACTORS:

The ethnic group is basically Kikuyu and the major religions are Catholic, Anglican (C.P.K.), P.C.E.A., A.I.P.C.E.A.and Akorino sect. Witchcraft has been practised by some members of the community but this practice has diminished substantially over the years. There are generally no taboos with regard to use of health services except those practised by the Akorino sect with respect to medical care utilization. According to the sects' belief, illness occurs as a result of a person being possessed by an evil spirit or 'demon'. Therefore for recovery all what one requires is prayers to beseech God to cast away the evil spirit, hence therefore the sects' followers do not seek medical attention.

CHAPTER FIVE

METHODS AND MATERIALS

5.1. INTRODUCTION

This chapter describes the methods and materials used in the study. It highlights the plan of work, detailing the duration of the study, study design, sample size determination, sampling procedure, data collection methods and the approach to data analyses.

5.2. STUDY DESIGN

This is essentially a descriptive cross-sectional study with the household as the unit of sampling and analysis. A description of the behavioral response to illness is provided relating it to social, economic and demographic characteristics in a rural community. This relationship is further expounded to describe the pattern of health care provider utilization and determining the cost of medical care to a household with an aim of determining an optimum premium for a Rural Insurance Health Fund (R.H.I.F.).

5.3. SAMPLING PROCEDURE

A multistage sampling procedure was conducted to select the households for the study. First a random sample of eight sublocations was selected from a sampling frame of thirty one sublocations using a table of random numbers. A systematic random sampling method was conducted to select the households studied. This was conducted as follows: For every village the interviewer went to the entrance of the elder incharge and tossed a ballpoint. The direction pointed by the head of the nipple was taken as the path to be followed and every fourth household was sampled for the study. This tossing was also repeated when the

interviewer reached a junction until the number required was reached. The definite number of households studied in every sublocation was estimated using a 1989 draft report of the population of households in Kirinyaga District obtained from the District Statistics Office. This number was distributed equally among all the villages in the sublocation, excluding the village where pretesting of the questionnaire was carried out.

5.4. SAMPLE SIZE

The sample size was determined using the following formula:

$$n = \frac{(3.4\ p\ q)}{d^2}$$

Where p = 0.45 assumed that 45 % of population do have disease symptom at any time.

q = 1-p

d = 0.01, maximum error allowable at the 95% level of confidence. [79]

Therefore,

$$n = \frac{3.84 \times 0.45 \times 0.55}{(0.01)^2}$$

$$= 9504 \text{ persons.}$$

$$\frac{9504}{7^*}$$

= 1357 households.

In the study, 1370 households were surveyed.

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* It was assumed that the average household size was seven members.

5.5. STUDY POPULATION

The study was confined to Ndia Division of Kirinyaga District. This division has a population of 81054 person (1979 Census) and is now estimated at 123041 person and a density of 306 persons per square kilometre (Kirinyaga District Development Plan 1989-1993). The population consists of approximately 8889 households *. All the agro-ecological zones of the district and therefore the economic potential of the inhabitants are represented in this area.

5.6. STUDY VARIABLES.

The variables applied for assessing the objectives and testing the hypotheses and the analysis procedures are discussed below. The importance of the classifications are discussed where appropriate.

5.6.1. RESIDENCE OF HOUSEHOLD.

Location

Sublocation.

Kirinyaga district has a well delineated agro-ecological zones which has diverse economic activities especially farming and of varying potentials. Thus income generation from these activities also differ across the various agro-ecological zones. Therefore residents of location and/or sublocation with high potential for tea and coffee which are the major cash crops in the study area also commands a higher income. The location of the household in relation to the distance to a health facility is

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*Source: Draft report of Household Population - Kirinyaga District Statistics Office.

is crucial to utilization of health facilities.

5.6.2. AGE.

Age of household head and/or husband.

Age of spouse.

Most of the households in the study are composed of nuclear families. An age classification starting with under twenty five (less than 25 years) and a ten(10)year interval group was selected. This classification was useful in assessing the behaviours at different age groups with certain characteristics as shown below:

Under 25 Years.

Mostly these are families with no children or have very young children.

25-34 Years.

In this group most families are almost accomplishing the desired family size and have children at varying ages in both under five and over five years old. Ideally at this age the mothers have maximum household responsibilities both in the house looking after several young children and in the farm. The priorities of the mothers have therefore to be selective, not seldom that taking an older child to a health facility would not be a first priority. Moreover the choice of the facility attended will be a compromise between cost, quality and convenience. A trade-off between quality and convenience may occur.

35-44 Years.

Families in this age group have more older children than in the previous group. Prevalence of illnesses among household members start to be less.

45-54 Years.

The household is mainly composed of husband and wife, the siblings are mainly adults.

55 Years and above.

At this age, the couple may begin to encounter health problems associated with ageing.

5.6.3. HOUSEHOLD SIZE.

This is the number of persons in the household who have been staying together at least for three months. Any member who stays away, maybe at the place of work but joins the others regularly at intervals less than three months also belongs to the household.

In order to assess the behavioral responses, the household size was classified as follows:

2-persons household.

3-5 persons household.

6-7 persons household

8-9 persons household

Over 9 persons in the household.

5.6.4. EDUCATIONAL STATUS.

Head of Household and/or husband.

Wife.

Education status has been found to influence both social and economic status of individuals or households and has a marked influence on health in both morbidity and health services utilization. In order to asses the effect of education on

morbidity and health facility utilization, education status was categorized into four classes as shown below.

No Education (Illiterate)

Primary school Education level

Secondary .

Higher secondary level and above.

5.6.5. ECONOMIC STATUS.

Monthly Household income:

This is monetary income from the following sources : salary or wages, regular income from household income generating activities such as payout from cash crops, sale of dairy products, businesses (shop, hotel, posho mill, matatu etc.).

Income was classified into three categories :

Low : monthly income of less than Ksh. 300;

Middle : monthly income of Ksh 300 -2000

High : Monthly income of Ksh. above 2000.

Household income together with type of living house and possession of certain household items defines the household economic status. Economic status is categorized into three classes.

The way the household living house was constructed was found to be a valuable indicator of economic status. The following classes of method of construction were used to fit the households into the three economic status categories:

Low class : wall is made of mud, roof is either grass-thatched or iron sheets and floor is earth.

Middle class : Wall is made of timber , roof is iron sheets and floor is earth or concrete.

High class : Wall is concrete, roof is iron sheets or roofing tiles and floor is concrete.

5.6.6. MORBIDITY.

This variable describes the presence of an illness episode that a member of the household had ever suffered within two weeks of the time of the interview. An epidemiological description of morbidity is used: i.e. type of disease and distribution by age, sex and duration.

Type of illness.

The illness suffered are categorized into the following groups.

1. malaria
2. upper respiratory disease e.g cough. running nose; pneumonia, asthma.
3. gastro-intestinal disorder eg. abdominal pain, diarrhoea; intestinal worms
4. skin disorder eg. skin rush , fungal lesions;
5. headache;
6. accidents eg. burns, soft tissue injuries, fractures;
7. others - under this category falls illnesses such as elevated blood pressure, generalized body pains, myalgia, ear aches.

Age of ill person

This was classified into five categories:

Under 5 years; 5-14 ; 15-24 ; 25-34 ; 35-54 ; 55 years and over.

Duration of illness

This describes the period that the person had suffered from the illness before he sought attention of any kind. The period was given in days grouped as follows:

1-2 days; 3-5 days; 6-7 days and over 7 days.

5.6.7. RESPONSE TO ILLNESS.

This variable describes what action was taken in response to the illness suffered by a member of the household. The type of actions that were taken were as follows:

Self-Medication.

These are medicines and medicaments which the person who was sick was self-administered without seeking advice from a health care provider. The source of such medicines is either from the shop or chemist, or those that were kept at home. These medicines were classified as follows:

Attended by a health care provider.

This describes the persons that sought help from a health care provider facility such as a private clinic, dispensary, health centre, mission health facility, district hospital or a traditional medical practitioner.

Admitted to hospital.

This describes the person in the household that was admitted to a hospital during the illness episode.

No action was taken.

No action was taken with regard to the illness suffered by a member of the household.

5.6.8. REASON FOR NO ACTION.

This describes the reasons why no action was taken regarding the illness that was suffered by a member of the household. These reasons were categorized as follows:

Illness was not serious

Health care provider is too far;

No money to pay for treatment;

Too much work in the shamba

It is against our religion to seek treatment

5.6.9. SELF MEDICATION.

This variable describes the medicines that were self-administered without consulting a health care provider facility.These medicines were classified into the following categories.

analgesics - eg. aspirin, panadol, cafenol, apc, hedex etc.

anti-malarials - eg. chloroquine. camoquin, fansidar, metakelfin.

cough mixtures - eg.cofta, vicks,

antacid preparations - actal , philips.

decongestants - vicks vaporub, chestone, actifed, piriton;

antihelminthics - ketrax, mintezol,zentel, flagyl;

others - these belong to other categories not included above such as herbal preparations,

5.6.10. HEALTH CARE PROVIDER CHOICE.

This variable describes the particular health care provider and/or facility that were attended by a member of the household that ever got sick within the last two weeks of the interview.

These facilities were as follows:

Private medical facility (clinics, hospitals,nursing homes

Government Dispensary.

Government health centre.

District hospital.

Mission health facility (dispensary,Clinic, Hospital)

Traditional healer.

Other health facilities - under this is included Kenyatta National hospital and provincial hospital.

5.6.11. REASON FOR THE CHOICE OF HEALTH CARE PROVIDER ATTENDED.

This variable describes the reasons which were given by the respondent as regards the health care facility that was attended. These reasons were categorized in the following groups:

health services are free;

health care services are cheap;

you get better treatment;

medical personnel are good;

the facility is well equipped with both laboratory and x-ray equipment.

5.6.12. DISTANCE TO THE HEALTH FACILITY .

This describes the distance travelled by the member of the household to reach the health facility that was attended first during the illness episode.

the distances are classified into the following categories:

0 -3 kms.

4 -5 kms.

6 -8 kms.

over 8 kms.

This classification was used in order to assess the variation of utilization rates with distance and also to determine whether bypass of facilities existed. This was to be corroborated with the reasons given for the choice of the health facility.

5.6.13. POLYCLINIC ATTENDANCE.

This variable assesses whether there is polyclinic attendance of health facilities during an illness episode. The reasons for attending and the facility attended during the same illness episode are given as follows:

Reasons.

illness became serious;

no enough facilities for investigations such as laboratory and x-ray equipment;

person was referred;

Health facility attended

Private medical clinic;

Government dispensary;

Government health centre;

District hospital;

Mission health facility;

Provincial general hospital.

5.6.14. MEANS OF TRANSPORT TO HEALTH FACILITY.

This variable describes the mode of transport to the health facility that was attended by a member of the household and the time taken to reach the health facility by walking is also described as follows:

Means used.

walked;

used motorised transport;

used both walking and motorised transport.

This classification was used to assess the accessibility of health facilities to household and this was corroborated with the distance to the health facility and utilization rates.

5.6.15. PRESENCE OF A CHILD OF AGE 0-12 MONTHS.

This variable was used in assessing the utilization of mother and child health (MCH) facilities and who provides such facilities. The place where the child was delivered, the reasons given for choosing the maternity facility and duration of stay in the facility are described as follows:

Number of children of age 0-12 months.

Place of delivery

home;

private maternity facility;

missionary hospital;

government health centre;

district hospital.

Duration of stay in the maternity facility.

1-2 days;

3-5 days;

over 5 days.

Reason for choosing the maternity facility attended

near home;

maternity fees are affordable;

recommended by a friend or neighbour;

you get good care.

5.6.16. UTILIZATION OF MOTHER AND CHILD HEALTH SERVICES.

This variable assesses the number of mothers in child bearing age (15-39 years) that were utilizing both promotive and family planning services. These services were categorized as follows:

Services utilized.

This describes the type of services that was sought.

antenatal care;

child welfare;

family planning.

Facility attended.

This describes the facility that was attended for provision of the above services. These facilities were categorized as follows:

private;

government health facility (health centre or district hospital) and mission health facility.

5.6.17. PERCEIVED PROBLEMS WITH GOVERNMENT HEALTH FACILITIES.

This describes problems that were perceived by mothers who attended government health facilities for the provision of promotive and family planning services. The problems were categorized as follows:

long queues;

poor attention by medical personnel;

services are poor (with respect to availability of drugs).

other reasons - included being told to buy

paraffin, needles etc.

5.6.18. EXPENDITURE ON MEDICAL CARE.

This variable assesses the expenditure that the household incurred during the illness suffered by a member of the household. This expenditure was incurred on the following activities:

cost of medicines for self-medication;

cost of prescriptions;

cost of treatment in a fee-for-service health facility;

cost of x-ray investigation;

cost of laboratory investigations.

Fees paid in maternity facilities.

The households that incurred expenditure are cross- matched with economic status in order to determine whether there is any predisposition for any economic status category to spend on medical care. This is used as a proxy determinant as to who is willing to pay for health services.

5.6.19. ENROLMENT IN ANY HEALTH OR MEDICAL INSURANCE SCHEME.

This variable describes the number of households that are enroled in any health or medical insurance scheme. In order to assess how effective such schemes are operating, the amount of money reimbursed to the household as payment of medical bills was assessed. The responses were categorized into the following groups:

Number of households enroled in such schemes.

Amount of money reimbursed.

The amount of money reimbursed was grouped as follows:

Nil - no money was reimbursed by the scheme.

Ksh.100-300;

Over Ksh 300.

5.6.20. RESPONSE TO A HEALTH PRE-PAYMENT SCHEME.

This variable describes a simulation of the functioning of a health prepayment scheme was discussed with the respondent(s) and then asked about their opinion on joining such a scheme and reasons for not joining. Responses are:

Positive - Those who wish to join such a scheme.

Negative - Those who do not wish to join such as scheme.

Those who do not wish to join such a scheme were questioned on the reasons they attribute to their negative answer.

The respondents were also questioned on whom they would prefer to take the administrative responsibilities of the scheme.

5.6.21. OPINION ON COST-SHARING IN PUBLIC HEALTH FACILITIES.

This variable describes the household's respondent opinion about cost-sharing in government health facilities with respect to acceptability, and necessary conditions that need to be met prior to implementing cost-sharing.

3.7. INTERVIEW AND DATA COLLECTION

3.7.1. EXPLORATORY VISIT

The study area was visited in the first week of September 1990. The purpose of the visit was to acquaint the principal investigator with the study area, and to seek consent from the District Officer, the Chiefs and particularly the Assistant Chiefs and the village elders in the selected areas for the study. Further, the boundaries of the selected areas were delineated using the maps of the last Census (1989) obtained from the Districts' Statistics Office. This was done together with the Assistant Chiefs and the Village elders.

3.7.2. COMMUNITY SENSITIZATION

The purpose of this was to prepare the community for the survey thus requesting their cooperation. This was carried out during the months of October and November 1990 and was achieved through public barazas and special meetings arranged through the assistant chiefs and village elders. Coincidentally there was a new District Officer who had been posted to the division and was holding his introductory barazas in every location. I took this opportunity to address the people on the intended study. Meetings with the assistant chiefs were held in conjunction with the routine village Kiama (Elders' Meeting) held weekly in every sublocation. In every occasion when there was a public baraza organized by any other department/ministry such as agriculture and livestock, this opportunity was used to address the people. Discussions with individual household heads were held during all my visits to the study area. The issues discussed mainly touched

on the contents of the intended survey on morbidity, health facilities sought and general expenditure on health. The people were informed that a brief enquiry on their source of income would also be included and this should not arouse any suspicion as to any subsequent ill motive, especially on taxation which the community seemed to be very wary of.

4.7.3. TRAINING OF INTERVIEWERS

Two interviewers were selected from each sublocation. The following criteria was used to identify the interviewers:

1. Form 1V and above standard of education.
2. Previous participation in community survey. i.e. had worked as enumerators in the last census (1989)
3. Identified by the Assistant chief in the area as an honest and responsible person.

Two training sessions each lasting a day were held for all the interviewers - before and after pretest.

The issues that were thoroughly studied during the training were the following:

1. Contents of the questionnaire i.e questions and the expected responses.
2. Procedure for administering the questionnaire : i.e.
   (a) Courteous approach to household members, first explaining the purpose of the visit as preceding what had been announced during the public baraza and communicated by the assistant chief and the village elders - a survey of health problems and health facilities sought etc.
   (b) Selection of the households to be studied. i.e.

systematic random sampling.

3. Completion of the questionnaire i.e.entering the responses correctly.
4. Need for reliable information was emphasized. Interviewers were advised to avoid leading answers that may create bias in the responses.

The Principal investigator had intensive discussions with each interviewer to identify any problems being encountered and gave suggestions on alternative approach.

3.7.4. PRETESTING OF THE QUESTIONNAIRE.

During the pretesting of the questionnaire, ten households were selected from one village in each sublocation and the questionnaire was administered. The results were discussed by the principal investigator and each interviewer regarding any difficulties encountered during administration of the questionnaire. Any queries were explained.

There were very slight modification on the pretest questionnaire and this draft was adopted for this study.

Final interviews were carried out in the rest of the villages.

3.7.5. DATA COLLECTION

Several types of data items were collected from each household and entered on the appropriate section of the questionnaire (See Appendix 1 - Questionnaire for details). The following data items were collected:

Name of household head and other persons belonging to the household and their ages, sex and relationship to the head;

Level of education of both head of household and spouse;

Health status - presence or absence of illness among any member of the household in the last two weeks preceding the interview;

Type of illness encountered if any;

Duration of illness;

Actions undertaken for recovery and reasons for not taking any action;

Mode of action taken if any i.e. health care provider sought or medicines used for self medication;

Monetary expenditure related to the illness i.e. payments to health care providers, cost of medicines, fare to reach such health care providers etc.;

Distance to health facility attended and time taken to reach if the person walked to the same;

Utilization of maternity services - if there was a newborn in the household who was about one year old;

Utilization of promotive and preventive health services - e.g. child welfare , ante-natal and family planning facilities;

Opinion about MCH and Family services rendered by public health facilities;

Enrolment to any health pre-payment scheme i.e.health insurance;

A model of a health pre-payment scheme was introduced to the respondent and opinion response was sought concerning willingness to join such a scheme and reasons for and against and preferred administrators of such a scheme;

Issue of cost-sharing in government health facilities was discussed and opinion was sought from the respondent concerning appropriateness, reasons for not levying charges and on exemption from paying such charges;

Finally household income and economic status was assessed by both enquiry into source of income and possession of certain household items. For the latter, observation by the interviewer substituted direct inquiry.

5.8. RELIABILITY OF DATA AND MINIMIZATION OF BIAS AND ERRORS.

In order to collect reliable information, several actions were taken:

1. Aims, objectives and need for reliable information were discussed with the interviewers.
2. The questionnaire was studied in English, Kiswahili and Kikuyu languages to ensure thorough understanding of the questionnaire by the interviewers.
3. The principal investigator accompanied each interviewer during actual interview in several households in every village.
4. The work load was restricted to a maximum of eight households per interview day.This was controlled by only availing not more than sixteen questionnaires being in possession of the interviewer in any two days, assuming that these will be distributed equally in the two days.

Recall period on issues concerning morbidity was restricted to two weeks.

Interviewers were instructed to interview the head of the household, and/or spouse or both and if possible in the company of any other member to facilitate recall. This was especially important in households with elderly heads or spouses.

The principal investigator checked the completed questionnaires as often as possible in key areas. Any important omissions or contradicting responses were discussed with the interviewer and correction done as early as possible.

5.9. APPROACH TO DATA ANALYSIS.

The questionnaire had been pre-coded as noted earlier. However further re-coding was necessary in order to accommodate the open-ended responses and reduce some categories of some variables. A code book was prepared in order to facilitate data interpretation.

Code sheets were used to summarise the data and also to facilitate entry into a LOTUS 123 computer file*. The data in this file was then translated into an SPSS/PC ** file.

Cross-tabulation and Chi-square tests have been applied where necessary. Further classification of the variables was done after running the frequencies of the variables studied. This was necessary since in some cross-tabulations it was noted that some empty cells were likely to distort data interpretation.

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* LOTUS 123 — This computer package was found not suitable for this study since it does not allow variable label entry.

** SPSS/PC — Statistical package for social scientists.

CHAPTER SIX

RESULTS

I have often had occasion to point out to him how superficial his own accounts are and to accuse him of pandering to popular taste instead of confining himself rigidly to facts and figures.'Try it yourself, Holmes!' he has retorted, and I am compelled to admit that, having taken my pen in my hand, I do begin to realise that the matter must be presented in such a manner as may interest the reader.

The Adventure of the Blanched Soldier [80]

1. INTRODUCTION.

In this chapter, results of the variables applied for ressing the objectives and testing hypothesis and analyses rocedures are presented. The results are presented in the llowing manner.

ction 6.2 - Summary statistics of the households studied,

ction 6.3 - Descriptive analysis of morbidity in the population,

ction 6.4 - Descriptive analysis of response to illness,

ction 6.5 - Descriptive analysis health facility utilization,

ction 6.6 - Descriptive analysis of Maternity and Maternal and Child Health (MCH) facility use.

ction 6.7 - Descriptive analysis of expenditure on medical care

ction 6.8 - Descriptive analysis of medical prepayment schemes.

4.2. SUMMARY STATISTICS OF THE HOUSEHOLDS STUDIED.

4.2.1. Distribution of the households studied by Location and Sublocation.

TABLE 4. Distribution of households studied by location and sublocation.

LOCATION	SUBLOCATION	ESTIMATED HOUSEHOLD POPULATION*	No OF HOUSEHOLDS STUDIED
NOI SOUTH	KAITHERI	740	130(17.6)
NOI NORTH	KARIKO	1837	315(17.1)
UTIRA	KAGUYU	780	134(17.2)
	KIANGAI	636	129(20.3)
WERUA	MAITHARUI	736	119(16.2)
UKURE	KANYOKORA	1069	184(17.2)
I-INI NORTH	KIBINGOTI	1031	192(18.6)
I-INI SOUTH	SAGANA	2060	167(8.1)**
TOTAL	8	8889	1370(15.4)

Number of households studied constituted 15.4 % of total households in the division.

* Draft population estimate 1989 Census.

** Only the households outside Sagana Township locality were included in this study hence the relatively smaller population sampled.

5.2.2. Distribution of Household size.

TABLE 5. Distribution of Household size.

NUMBEROF MEMBERS	FREQUENCY
1	51(3.7)
2	84(6.1)
3-4	398(29.1)
5-6	443(32.4)
7-8	295(21.6)
OVER 9	97(7.1)
TOTAL	1370

Mean Household size was 5.2 S.D. 2.3.

5.2.3. Age distribution of head of household and/or wife.

TABLE 6 Age distribution of head of household and/or wife.

AGE GROUP	FREQUENCY HEAD OF HOUSEHOLD	FREQUENCY WIFE
LESS THAN 25 YEARS	55(4.0)	189(17.1)
25-34	433(31.7)	377(34.2)
35-44	308(22.5)	256(23.2)
45-54	285(20.8)	178(16.1)
OVER 55	287(21.0)	103(9.3)
TOTAL	1368	1103

Mean age for head of household = 41.8 S.D 12.1 years.
Mean age for wife = 36.1 S.D.12.0 years.

5.4. Education status of head of household and/or wife.

Table 7. Distribution of Education status of household head and/or wife.

CATION LEVEL	FREQUENCY	FREQUENCY
	HEAD OF HOUSEHOLD	WIFE
EDUCATION	346(25.31)	638(46.71)
MARY	673(49.23)	534(39.09)
CONDARY	315(23.04)	174(12.47)
GH SCHOOL	23 (1.68)	3 (0.22)
VERSITY	5 (0.37)	2 (0.15)
HER COLLEGES AD ULT CLASSES	5 (0.37)	15 (1.10)
TAL	1367	1366

5.5. Distribution of economic status of the households by sublocation.

There were very few households earning salaries or wages. erefore this criterion was not used to assess the general sehold income. It is only regular income from household income tivities that is presented in this section.

nomic status was assessed using two criteria as discussed in tion 5.7. The categories of income were classified as follows:

LOW : Monthly income of less than Ksh 300.

Middle : Monthly income of Ksh. 300 - 2000.

High : Monthly income of Ksh. above 2000.

e results are presented in Table 8(A) and Table 8(B).

BLE 8 (A) Distribution of household income by sublocation.

SUBLOCATION	INCOME LEVEL			
	LOW	MIDDLE	HIGH	TOTAL
AITHERI	49(38.3)	74(57.8)	5(3.9)	123(100.0)
ARIKO	99(32.1)	110(35.7)	99(32.1)	308(100.0)
AGUYU	32(24.4)	75(57.3)	4(3.1)	131(100.0)
IAGA	96(75.0)*	32(25.0)	-	128(100.0)
ANYOKORA	62(34.1)	116(63.7)	4(2.2)	182(100.0)
AITHARUI	85(6.3)	32(26.9)	2(1.7)	119(100.0)
IBINGOTI	95(71.4)*	95(49.5)	2(1.0)	192(100.0)
AGANA	138(83.6)*	22(13.3)	5(3.0)	165(100.0)
	656(48.5)	657(48.6)	40(3.0)	1353(100.0)

BLE 8 (B) Distribution of economic status of households by sublocation.

SUBLOCATIO N	LOW	MIDDLE	HIGH	TOTAL
AITHERI	52(40.6)	66(51.6)	10(7.8)	128(100.0)
ARIKO	10(3.2)	253(81.0)*	49(15.7)	312(100.0)
AGUYU	11(8.6)	102(79.7)	15(11.7)	128(100.0)
IAGA	109(85.7)*	16(12.6)	2(1.6)	127(100.0)
ANYOKORA	39(21.3)	134(73.2)	10(5.5)	183(100.0)
AITHARUI	85(76.6)*	25(21.0)	9(7.6)	119(100.0)
IBINGOTI	147(76.6)*	43(22.4)	2(1.0)	192(100.0)
AGANA	65(39.2)	45(27.1)	56(33.7)	166(100.0)
	518(38.2)	684(50.5)	153(11.3)	1355(100.0)

mber of missing observations = 19

ble 8(A) and Table 8(B)

Kiaga, Maitharui, Kibingoti and Sagana are located in agro-ecological zone LM_3. This zone does not have a favourable climate for coffee and inhabitantants more less obtain their income from sale of

subsistence crops.
Kariko Sublocation is wholly located in the agro-ecological zone LM_1. It is a main tea growing area which is a major source of regular income.
Sagana - A large number of households had concrete living houses and therefore these households were classified into a higher economic status. This placement is illusive since these households were able to construct such houses because of the location being close to a quarry and therefore it is cheap to obtain this type of building material.

It has been noted in Section 3.4. that the climate and soils ...ide the district into distinct agro-ecological zones of varying ...icultural potential and therefore economic status.

Households with better regular income can afford to purchase ...perior materials for construction of their living houses. The ...stribution of the types of homestead was found to be almost ...ilar to the distribution of regular income across the ...locations with the exception of Sagana. Therefore this ...stribution could also be used as a criteria for classifying ...sehold economic status.

...3. MORBIDITY

...3.1. Morbidity experienced by households.

605 (44.2) households reported an illness episode on a member ... members of the household within two weeks prior to the day of ...terview. The morbidity rate (i.e. number of illness episodes per ...rson per year) was estimated to be 2.2.*. The distribution of ...rbidity across the different age groups, sex economic status and ...e of illnesses experienced is presented in this section.

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*Total number of persons in the households studied was estimated as follows:
Number of households studied x mean household size = 8220
(1370 x 5.2) = 8220 persons)
...ber of illness episodes reported in two weeks = 605.
...timated number of illness episodes in a year = 153730
(605/2 x 52 = 153730)
where 52 is the number of weeks in a year.
...refore, estimated number of illness episodes per person per year = 2.2.
(153730/8220 = 2.2).

1.2. Disease incidence and distribution.

Households reported several perceived disease symptoms perienced by a member of the household. These disease symptoms re categorized into five major diseases and one symptomatic ndition. The distribution of these diseases is presented in the llowing tables and diagrams.

BLE 9. Distribution of diseases.

EPORTED ILLNESS	FREQUENCY
alaria	171(28.3)
espiratory tract disease	167(27.6)
astro-intestinal disorder (diarrhoea, vomiting, pain- elminthic infections)	113(18.7)
kin Diseases(dermatophytes,- ashes)	20(3.3)
ccidents(traumatic injuries,burns)	30(5.0)
eadache	15(2.5)
ll others	89(14.7)
OTAL	605(44.2)

The results indicate that malaria, respiratory diseases and gastro-intestinal disorders are important causes of morbidity in the study area.

The distribution presented in this table does not differ much from the disease incidence reported for the district [77] and that of the whole country [55].

3.3. Distribution of illness by age.

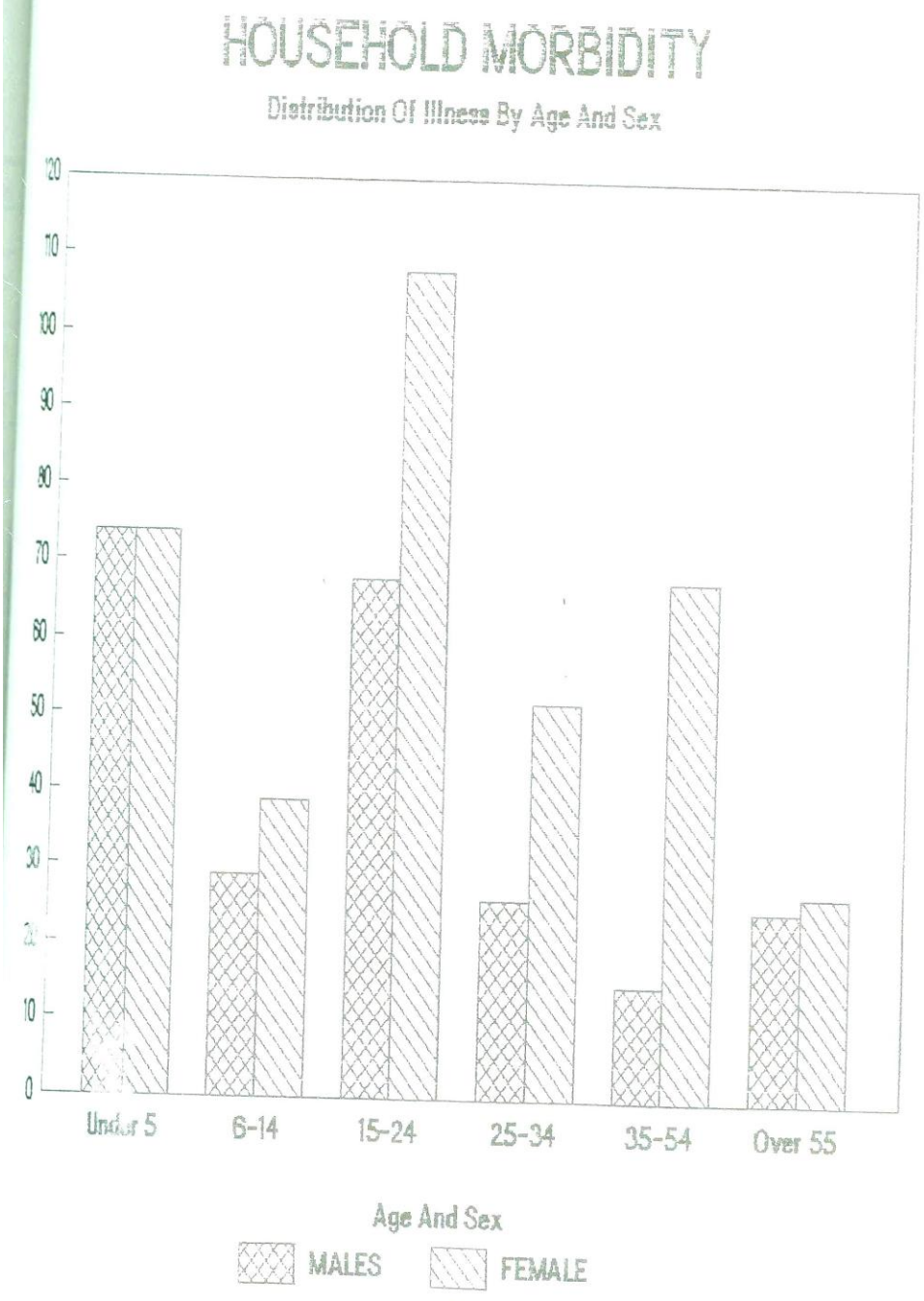
Distribution of illness by age is shown in Figure 5 and Table 10.

TABLE 10. Distribution of disease by age.

	AGE GROUP IN YEARS						
	<5Yrs	5-14	15-24	25-34	35-54	>55 Years	TOTAL
	39(22.8)	16(9.4)	53(31.0)	25(14.6)	26(15.2)	12(7.0)	171(100.0)
	19(11.4)	65(38.9)	32(19.2)	20(12.0)	19(11.4)	12(7.2)	167(100.0)
	21(18.6)	13(11.5)	38(33.6)*	15(13.3)	16(14.2)	10(8.8)	113(100.0)
	8(40.0)	2(10.0)	8(40.0)	1(5.0)	1(5.0)	0	20(100.0)
	6(20.0)	4(13.3)	10(33.3)	5(16.7)	4(13.3)	1(3.3)	30(100.0)
	0	2(13.3)	9(60.0)	2(13.3)	1(6.7)	1(6.7)	15(100.0)
	9(10.1)	12(13.5)	26(29.2)	10(11.2)	16(18.0)	16(18.0)	89(100.0)
	148(24.5)	68(11.2)	176(29.1)	78(12.9)	83(13.7)	52(8.6)	605(100.0)

Chi-square = 61.74621 d.f.30 P-value =0.0006< 0.05).

IGURE 5


HOUSEHOLD MORBIDITY
Distribution Of Illness By Age And Sex
120
110
100
90
80
70
60
50
40
30
20
10
0
Under 5
6-14
15-24
25-34
35-54
Over 55
Age And Sex
MALES
FEMALE

The different diseases experienced had a distribution pattern which was preponderant in different age categories.

Distribution of the diseases reported across the various age groups was found to be significant,

(Chi-square = 61.74621 d.f.30 P-value 0.0006 <0.05).

The results show a distinctly higher incidence of respiratory tract disease, malaria and gastro-intestinal disorders among the under five year age group. The incidence observed is close to that reported for the country [55]. The three diseases are a major cause of morbidity and mortality among this age group. These diseases are in most cases acute and require a fast and effective management. Delay in treatment may result into serious complications or even death. Some of the respiratory diseases are preventable through immunizations and the government has a well established programme on immunization. However any policy measures (for example charging user-fees in government health facilities) would not deter this group from seeking medical care promptly. There are indications that some financing changes especially those that involve payment of fees have resulted in a decrease in use of the facilities. This is discussed elsewhere in the text.

4.4. Distribution of disease by sex.

Among the households that had reported some illness, there were 368 (60.8) female members and 237 (39.2)males. For every disease except skin disease, there were more females than males. This difference was noted to be slightly significant,

Chi-square 13.28773 d.f.6 P-value= 0.0387 <0.05).

distribution and its pattern is illustrated in Table 11 and
ure 5.

BLE 11 Distribution of disease by sex.

DISEASE	SEX		TOTAL
	MALE	FEMALE	
laria	64 (10.6)	107 (17.7)	171 (28.3)
spiratory tract ease	69 (11.4)	98 (16.2)	167 (27.6)
stro-intestinal sorders	52 (8.6)	61 (10.1)	113 (18.7)
in disease	12 (2.0)	8 (1.3)	20 (3.3)
cidents (trauma, rns)	9 (1.5)	21 (3.5)	30 (5.0)
adache	2 (0.8)	13 (3.5)	15 (2.5)
others	29 (4.8)	60 (9.9)	89 (14.7)
TOTAL	237(39.2)	368(60.8)	605 (100)

Chi-square=13.28773 D.F 6 P-value 0.0387 < 0.05)

1.5. Duration of Illness.

This was the time period that the member of the household had
ffere from the disease before an intervention was initiated.This
as classified into four categories. The frequency distribution is
esented Table 12

12 Distribution of duration of illness in days.

ATION IN DAYS	FREQUENCY
	80(13.2)
	148(24.5)
	123(20.4)
er 7	253(41.9)
TAL	604(100.0)

Mean period of illness before any measure were taken was 5.3 3.2 days. Thus the longer the illness, the more likely that a ision had to be made such as attending a health facility.

4. RESPONSE TO ILLNESS

Various actions were taken by households in response to lness suffered by a member of the household. 42 (6.9) of the useholds did not take any action and gave various reasons for not king any action. These reasons are presented in Table 13. Among e other 563 (93.1) households that had reported illness,191 1.6) administered some self remedies either bought from the shop d/ or chemist or kept at home. The medicines that were used are esented in Table 14. 372 (61.5) of the households had their sick r seeking attention from a health care facility /and or ovider. Only 16 (2.6) were admitted to a health facility.

TABLE 13 Distribution of Reasons for no action.

REASON	FREQUENCY
Illness not serious	24(57.1)
Health care provider is too far	5 (11.9)
No money to pay for treatment	8 (19.0)
Too much work in the shamba	4 (9.5)
Against religion	1 (2.4)
TOTAL	42(100.0)

From the above reasons the major reason for not taking any action was that illness was not serious. Therefore, perception of the seriousness of an illness is a precondition to seeking intervention.

TABLE 14. Medicines commonly used for self medication.

TYPE OF MEDICINE	FREQUENCY
Analgesics	96 (51.06)
Anti-malaria drugs	28 (14.9)
Antitussives	17 (9.04)
Antacids	12 (6.38)
Decongestants	9 (4.78)
Anti-helminthics	3 (1.6)
All others	23 (12.2)
TOTAL	188 (100.0)

Analgesics were the most preferred home remedy applied for the illnesses experienced followed by anti-malarials. This is quite obvious since most of illnesses presents with some degree of pain.

HEALTH FACILITY UTILIZATION.

1. Health care facility choice.

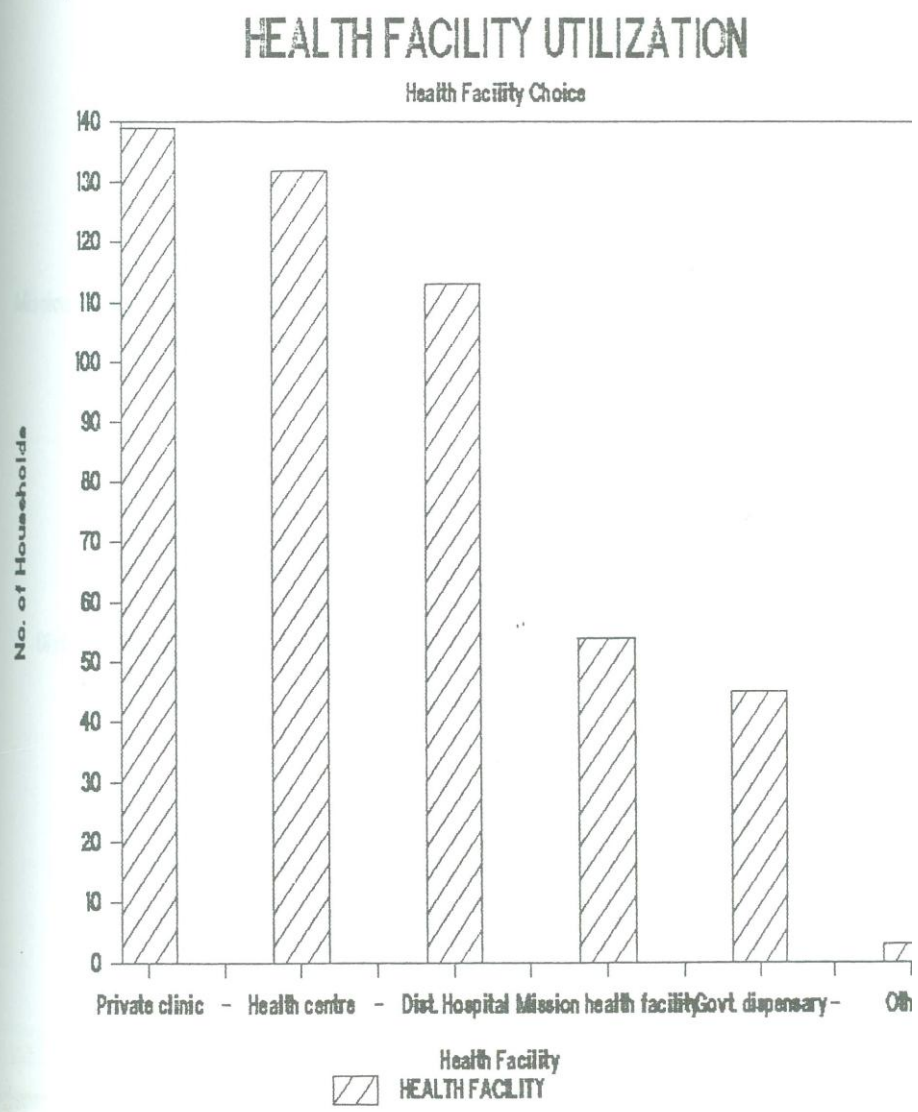
372 households who had a member afflicted with illness sought from the available health care facilities. 16 (4.4) households their members admitted to hospital while the rest were treated utpatients. 91 household had a member attending more than one lth care facility during the same episode of the illness. The tribution of all health care facilities ever attended by the seholds are presented in Table 15. and Figures 6(a), 6(b) and

LE 15. Distribution of health facility choice.

TYPE OF HEALTH FACILITY	FREQUENCY
Private clinic	139 (28.7)
Health centre	132 (27.3)
District Hospital	113 (23.3)
Mission health facility	54 (11.2)
Government dispensary	45 (8.7)
All other health facilities(provincial hospitals, Kenyatta National hospital)	3 (0.6)
Traditional healer	1(0.2)
TOTAL	484(100)

These results show that among the health care facilities available to the community, the public health facilities provide care to most of the population (60.0) with the health centre providing the bulk of medical care (27.1).

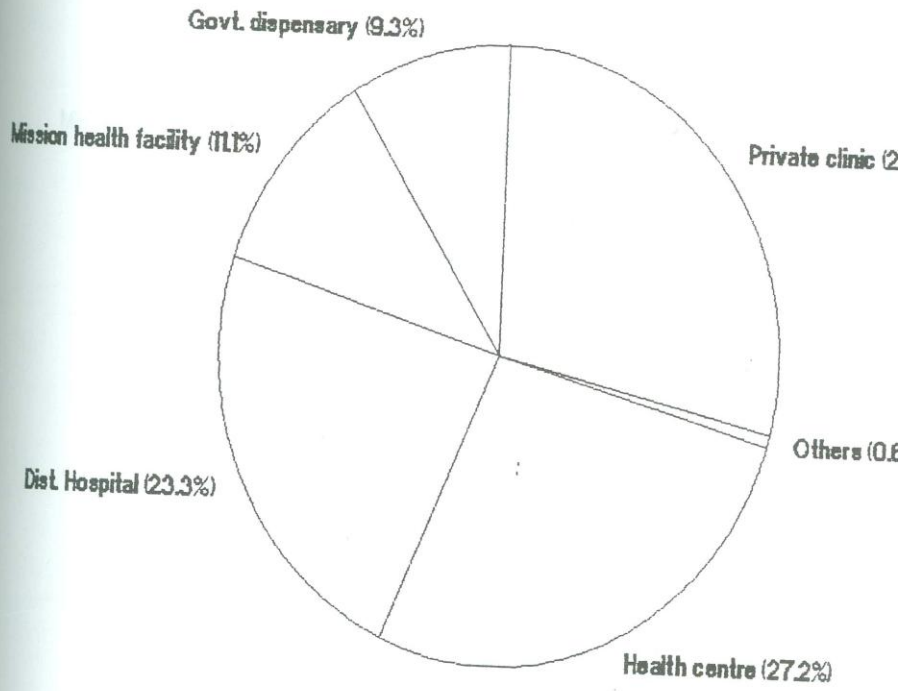
FIGURE 6(a)


HEALTH FACILITY UTILIZATION
Health Facility Choice
No. of Households
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Private clinic
Health centre
Dist. Hospital
Mission health facility
Govt. dispensary
Oth
Health Facility
HEALTH FACILITY

URE 6(b)

HEALTH FACILITY UTILIZATION

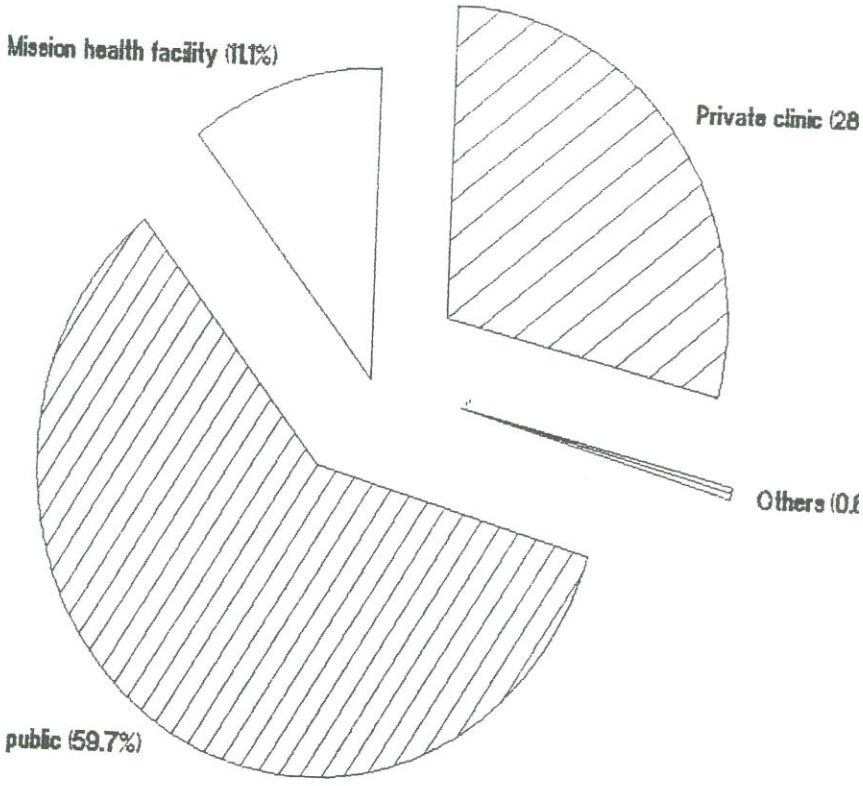
Health Facility Choice



URE 6(c)

HEALTH FACILITY UTILIZATION

Distribution of health facility choice



6.5.2. Distance to Health care facilities.

In Section 6.5.1. it was reported that 372 households had a member that sought attention from a health facility and/or health care provider. Some members visited more than one facility and/or health care provider all situated at different places. In this section, the distance travelled to each of these facilities and/or health care provider is presented. This was the perceived distance travelled by a member of the household to a health facility that was ever visited during the illness episode experienced. The distance to each of these facilities is presented in Table 16.

TABLE 16 Distribution of Distance to a Health Facility by Household member.

HEALTH FACILITY	DISTANCE TRAVELLED IN KİLOMETRE							
	Less 1	1-3	4-5	6-8	Over 8	MEAN*	S.D*	TOTAL
District Hospital	5	27	8	6	69	6.6	3.2	115
Health centre	0	51	49	20	7	4.1	2.1	127
Government dispensary	12	9	8	6	2	3.2	2.7	37
Private health facility	7	48	15	14	40	5.0	3.2	124
Mission health facility	0	12	11	5	29	6.5	2.9	57
TOTAL	24	147	91	51	147	5.2	3.1	460

MEAN*, S.D.* - This is the mean distance travelled by household's member to each of the health facilities.

6.5.3. Factors that affect health facility utilization.

Several factors were examined in order to determine whether they have an influence on the health facility that was attended by any of the household members. Statistical analyses was carried out to study the degree of such influences. The factors examined and the results of statistical tests applied are presented in the following section.

6.5.3.1. Education of head and/wife of household.

Four levels of formal education were considered in order to determine influence of education on health care facility choice:

no education

primary education

secondary education

higher secondary and above.

Education level of head of household was found not to have any influence on the choice of any of the health care facilities.

However education level of the wife/mother in the household did however have some influence on health care facility attended, that households with a wife who had a higher education had a tendency to seek care from private health facilities,

(Chi-square 21.99747 D.F.12 P-value 0.0375 <0.05).

6.5.3.2. Household size (number of members in a household).

The categories used to determine whether household size had an influence on health facility choice were : 2 members; 3-4 members;

members; 7-8 members and more than 9 members. House size did have any influence on choice of health facility choice,

(Chi-square = 10.33012 D.F 12 P-value 0.5870 >0.05).

5.3.3. Type of disease.

Type of disease was examined in order to determine whether this had any influence on health care facility choice. The diseases were categorized into six major groups and a symptomatic illness (5.7.6). The result of facility choice by type of disease reported is presented in Table 17.

TABLE 17 Distribution of facility choice by disease *.

	HEALTH FACILITY					
	Private facility	G.dispensary	Health centre	Dis.Hospital	Mission facility	TOTAL
	23(24.0)	6(5.3)	50(44.2)	26(23.0)	8(7.1)	113(100)
tory disease	27(29.3)	17(18.5)	23(25.0)	1(20.7)	6(6.5)	92(100)
inal	21(25.0)	5(6.0)	21(25.0)	25(29.5)	12(14.3)	84(100)
ssions	6(35.3)	1(5.9)	8(47.1)	0	2(11.8)	17(100)
	4(17.4)	6(26.1)	10(43.5)	2(8.7)	1(4.3)	23(100)
	1(14.3)	1(14.3)	1(14.3)	3(42.7)	1(14.3)	7(100)
bers	16(28.6)	6(10.0)	12(21.4)	21(37.5)	1(1.8)	56(100)
	98(25.0)	42(10.7)	125(31.9)	96(24.5)	31(7.9)	392(100)

* The values given are for first visit only and does not include polyclinic attendance.

These results show that the choice of facility was influenced by the type of disease suffered.

For example, almost twice as many malaria cases were treated at the health centre as compared to those treated at either the District hospital or private health facility. Similar distribution of choice was observed with accidents. It is further observed that over 60% of the households chose the government health facilities for the commonest acute illness (malaria, respiratory and gastro-intestinal diseases).

Type of disease perceived had a significant influence on the choice of health facility,

(Chi-square = 53.21569 D.F.24 P-value 0.0005 <0.05).

Thus if equity in health care delivery is to be achieved, these facilities should provide an 'acceptable quality' of care both as perceived by the patients as well as by the health personnel. This is defined elsewhere in this study.

5.3.4. Duration of illness.

The duration was categorized into 1-2 ; 3-5; 6-7 and over 7 days. The mean duration of illness before seeking treatment from each of the facilities was calculated. These means are presented in

BLE 18 Mean duration of illness before a health facility attended.

EALTH FACILITY	MEAN	S.D.
rivate health facility	5.9	1.9
overnment dispensary	5.8	1.7
ealth centre	5.7	2.2
istrict hospital	6.1	2.0
ission health facility	5.0	2.0

These results indicate that the longer duration lasted prior to seeking treatment from the district hospital imply that this facility is sought for an illness perceived to be more serious.

4.5.3.5. **Sex and Age.**

It had been noted earlier that there were more female members than male members of households who had experienced some illness. In every facility except the mission health facility, there were more females attending as shown in Figure 7.

However this pattern was not significant. The choice of a health facility by both sexes for all facilities was almost similar.

(Chi-square = 9.46833 D.F.4 P-value 0.0504).

No significant difference was noted for health care facility choice across the different age groups.

(Chi-square = 21.01204 D.F. 20 P-value 0.3964).

However for the different diseases experienced the choice of

ealth facility was influenced by the sex of the sick member of the ousehold. For males, there was more influence on the choice of ealth facility for males than with females.

or males

(Chi-square =48.98618 D.F. 24 P-value =0.0019 <0.05),

nd females

(Chi-square =36.63625 D.F.24 P-value = 0.0476 < 0.05).

FIGURE 7

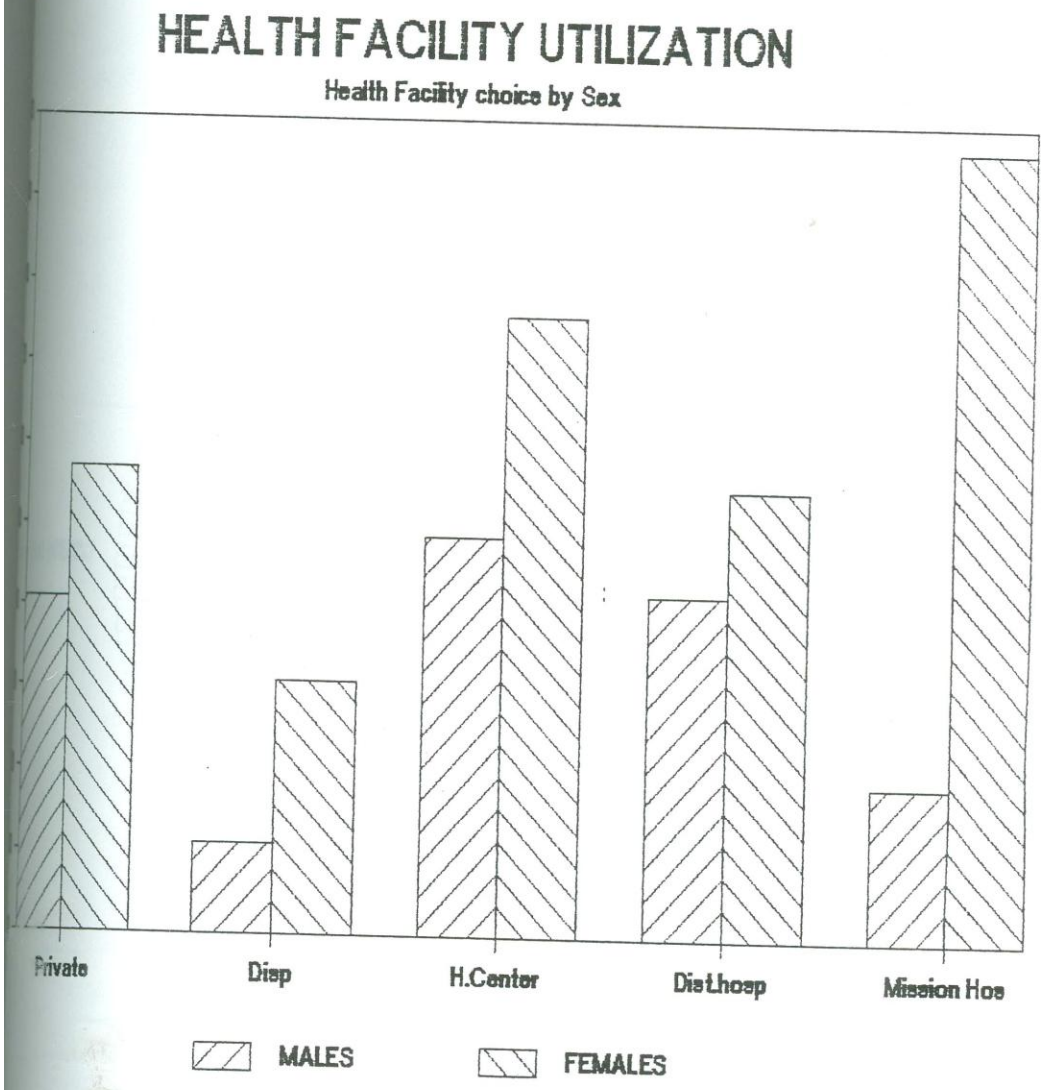
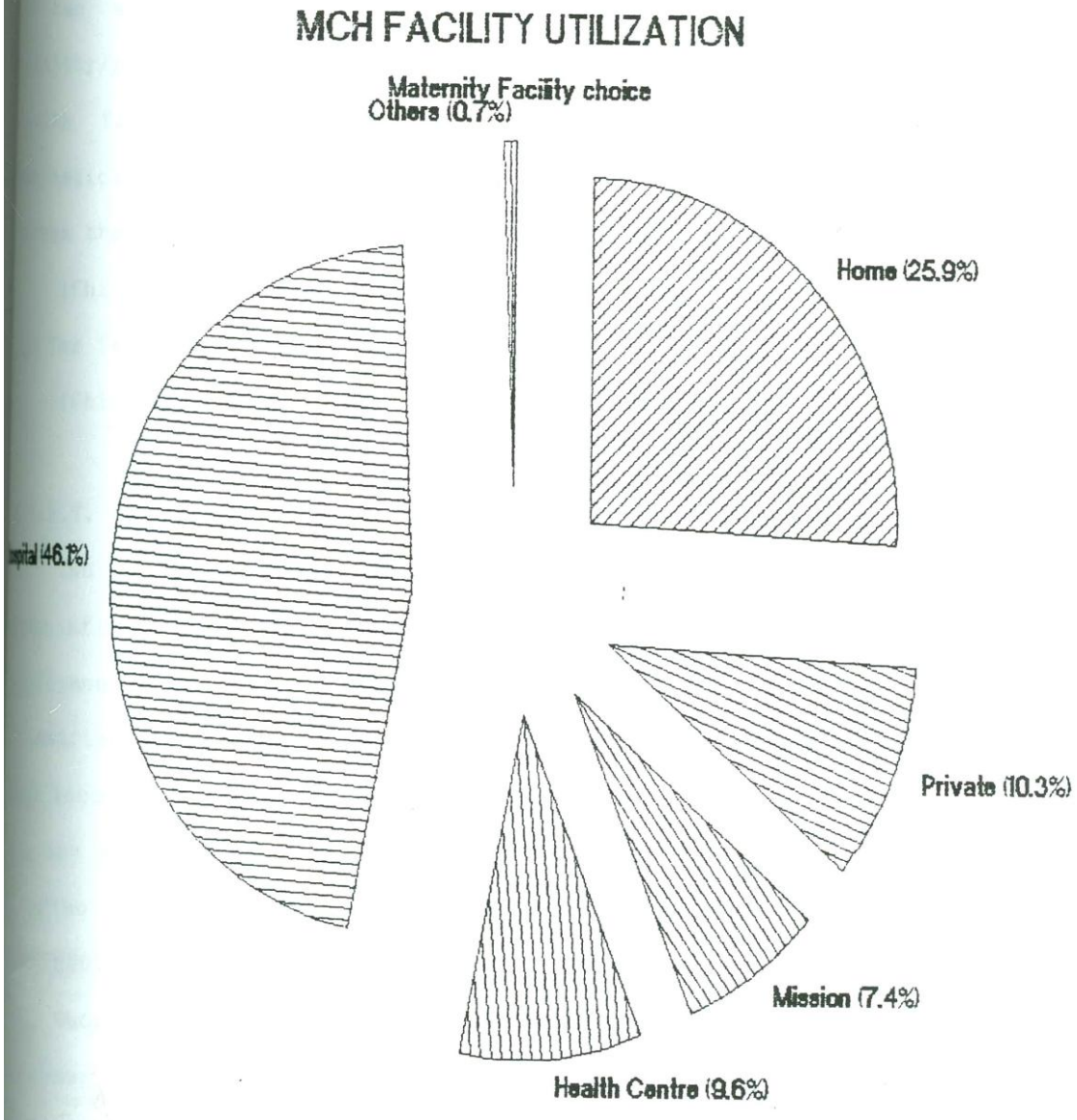

HEALTH FACILITY UTILIZATION
Health Facility choice by Sex
Private
Disp
H.Center
Dist.hosp
Mission Hos
MALES
FEMALES

FIGURE 8


MCH FACILITY UTILIZATION
Maternity Facility choice
Others (0.7%)
Home (25.9%)
spital (46.1%)
Private (10.3%)
Mission (7.4%)
Health Centre (9.6%)

4.5.3.6. Age.

Age of the household member was examined to determine whether it has any influence whatsoever on choice of health care facility/provider. Although there were more females attending a health facility at any age group, however there was no statistically significant difference in health facility choice across the different age groups. For males

(Chi-quare=29.91013 D.F.20 P-value 0.0713)

and for females

(Chi-square = 25.62006 D.F. 20 P-value 0.1787).

4.5.3.7. **Economic status.**

Two aspects of economic status were used to assess whether they influence the use and choice of health care facilities. First employment status of the head of household was examined. This was classified into two categories :-unemployed (not on salary and/or wage income);and employed (receiving a monthly salary/and or wage). For the salaried heads of households the income was categorized into two classes : earning less than Ksh.1000 and earning more than Ksh.1000.

Secondly regular income from household activities was examined in order to determine whether it did have any influence on health care facility choice. The income categories were grouped into three classes : low (regular income of less than Ksh.300) middle (income of Ksh.301-2000) and high (income of over Ksh 2000). These income categories were also related to the type of construction of the

ving house of the household. The pattern of distribution of alth care facility choice was similar when both criteria were ed. The results for health care facility choice using both iteria are presented in Table 19

BLE 19 Distribution of health care facility choice by regular household income from household activities.

	HEALTH FACILITY CHOICE					
INCOME (KSH)	PRIVATE	DISPENSARY	H.CENTRE	D.HOSPITAL	MISSIONARY FACILITY	TOTAL
(A) Regular Income from household activities						
LOW LESS -	36(17.6)	21(10.3)	94(46.1)	40(19.5)	13(6.4)	204(100
MIDDLE - 301-2000	43(32.8)	12(9.2)	21(16.0)	44(33.6)	11(8.4)	131(100.0)
HIGH - OVER 2000	17(30.9)	8(14.5)	10(18.2)*	13(23.6)	7(12.7)	55(100.0)
TOTAL	96(24.6)	41(10.5)	125(32.5)	97(24.9)	31(7.9)	390(100.0)
(B) Standard of living house						
LOW	33(20.5)	15(9.3)	68(42.2)	39(24.2)	6(3.7)	161(100.0)
MIDDLE	56(30.8)	23(12.6)	41(22.5)	45(24.7)	17(9.3)	182(100.0)
HIGH	7(15.2)	4(8.7)	15(32.6)*	12(26.1)	8(17.4)	46(100.0)
TOTAL	96(24.7)	42(10.9)	124(31.9)	96(24.7)	31(8.0)	389(100.0)

This disparity is due to illusive placement of households in higher economic status when standard of living house criterion is used. This is discussed elsewhere in the text.

Although the number of the unemployed (291) who had attended health facility was larger than that of employed (97) their choice for the different health care facilities was not statistically different and had similar choices

(Chi-square = 9.26230 D.F. 4 P-value 0.0549).

Also among the two classes of earning, the choice of the different health care providers was not different

(Chi-square = 9.48141 D.F. 5 P-value 0.0913 >0.05).

Thus employment status of the head of household does not have any influence on the choice of the health care facilities.

From the above results, it is observed that for fee paying health facilities i.e. private and missionary health facilities there was increased use as you move from low to high income households. A higher percentage of households in the low income category used the health centre (free service) more than the other two categories which are observed to have preferred the private health facility (fee-for service). It should also be noted that the apparent low use by the high income group is due to the fact that there is also less illness among the high income, probably due to better health practices. The facility choice was statistically significant across the income groups. For criteria (A)

(Chi-squared = 44.45681 D.F. 8 P-value 0.0000 <0.05).

and for criteria (B),

(Chi-squared = 26.29021 D.F. 8 P-value 0.0009 < 0.05).

6. MATERNAL AND CHILD HEALTH FACILITY UTILIZATION.

In this section results on utilization of maternal and child ...lth facilities are presented. First a utilization profile is ...lined and secondly factors that influence choice of the ...ilities by household are analyzed.

Among the 1370 households studied, 287 had children of less ...n twelve months. The place where the child was delivered viz. ...e or a maternity facility was inquired into. For mothers who ...livered in maternity facilities, reasons for the choice and fees ...t were charged were obtained. History of use of other maternal ...d child health services and where they obtain them from, and ...pinion regarding any perceived problems in government health ...cilities was sought. A Chi-squared test was carried out to ...etermine the factors that may be associated with the choice of any ...articular facility by the households.

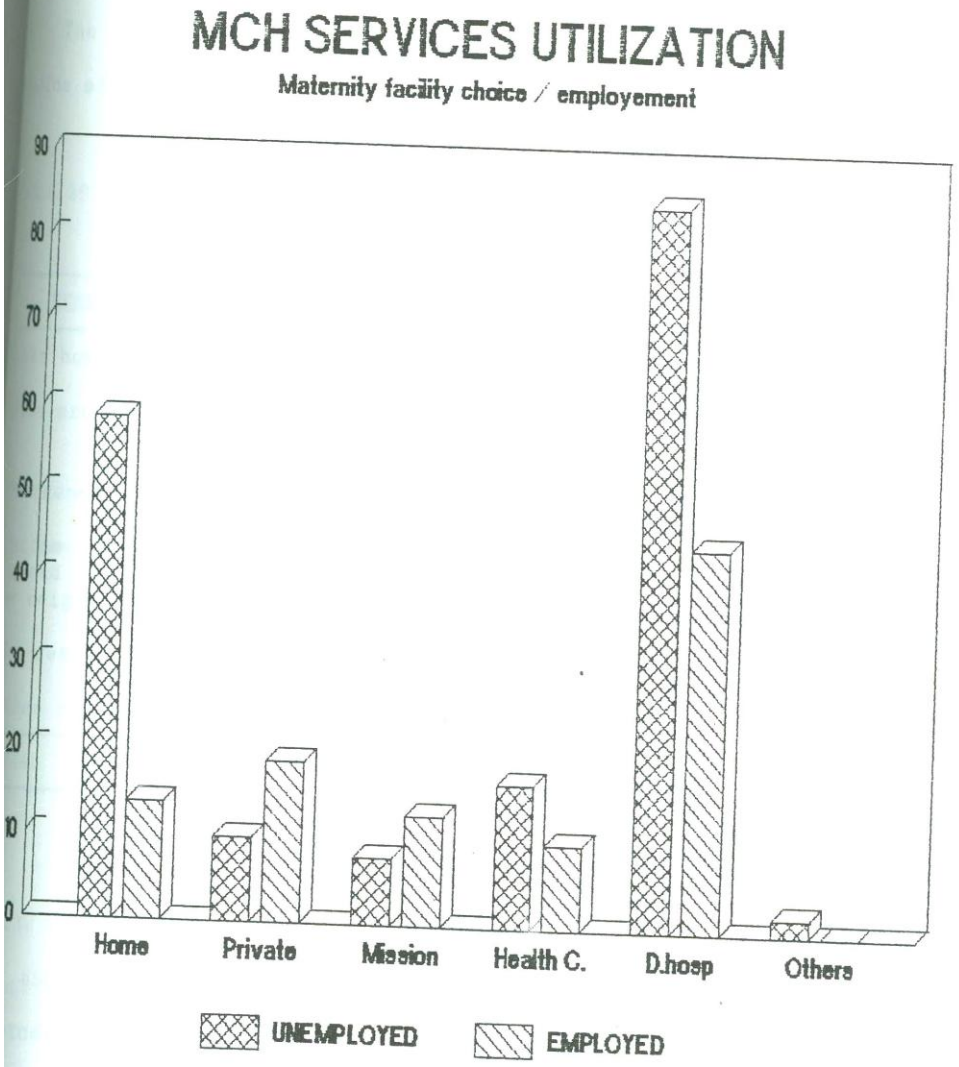
6.6.1. Place of delivery.

The most preferred place of delivery by mothers in the ...ouseholds was the district hospital. Although for other health ...ervices (post- and antenatal) the health centre was a very popular ...facility and closer to the community it was not as much utilized for maternity services. Distribution of the facilities used for child delivery is presented in figure 8.

It was observed that over fifty percent of the mothers delivered in public health facilities and most of them used the district hospital.

However these results may not be conclusive since there are not many choices of health facilities offering maternity services within the study area. Although all the health centres provide maternity care, there are many reasons why the community does not prefer them. These reasons were not considered in this study but there are indications that among the causes of low use are poor communication to these facilities and lack of some utilities.

FIGURE 9


MCH SERVICES UTILIZATION
Maternity facility choice / employement
90
80
70
60
50
40
30
20
10
0
Home
Private
Mission
Health C.
D.hosp
Others
UNEMPLOYED
EMPLOYED

4.6.2. Reasons for choice of maternity facilities attended.

The respondents gave various reasons that influenced their choice of maternity facility, Table 20

TABLE 20 Distribution of reasons given for choice of maternity facility.

REASONS	FREQUENCY
Near home	85 (40.9)
Fees are affordable	26 (12.5)
Emergency	35 (16.8)
Recommended by a friend or neighbour or neighbour	12 (5.8)
You get good care	46 (22.1)
Other reasons	4 (1.9)
TOTAL	208 (100.0)

4.6.3. Utilization of mother child health services.

696 women of child bearing age reported to be using MCH services. The distribution of the services sought and the places where these services were sought are presented in Table 21

FIGURE 10.

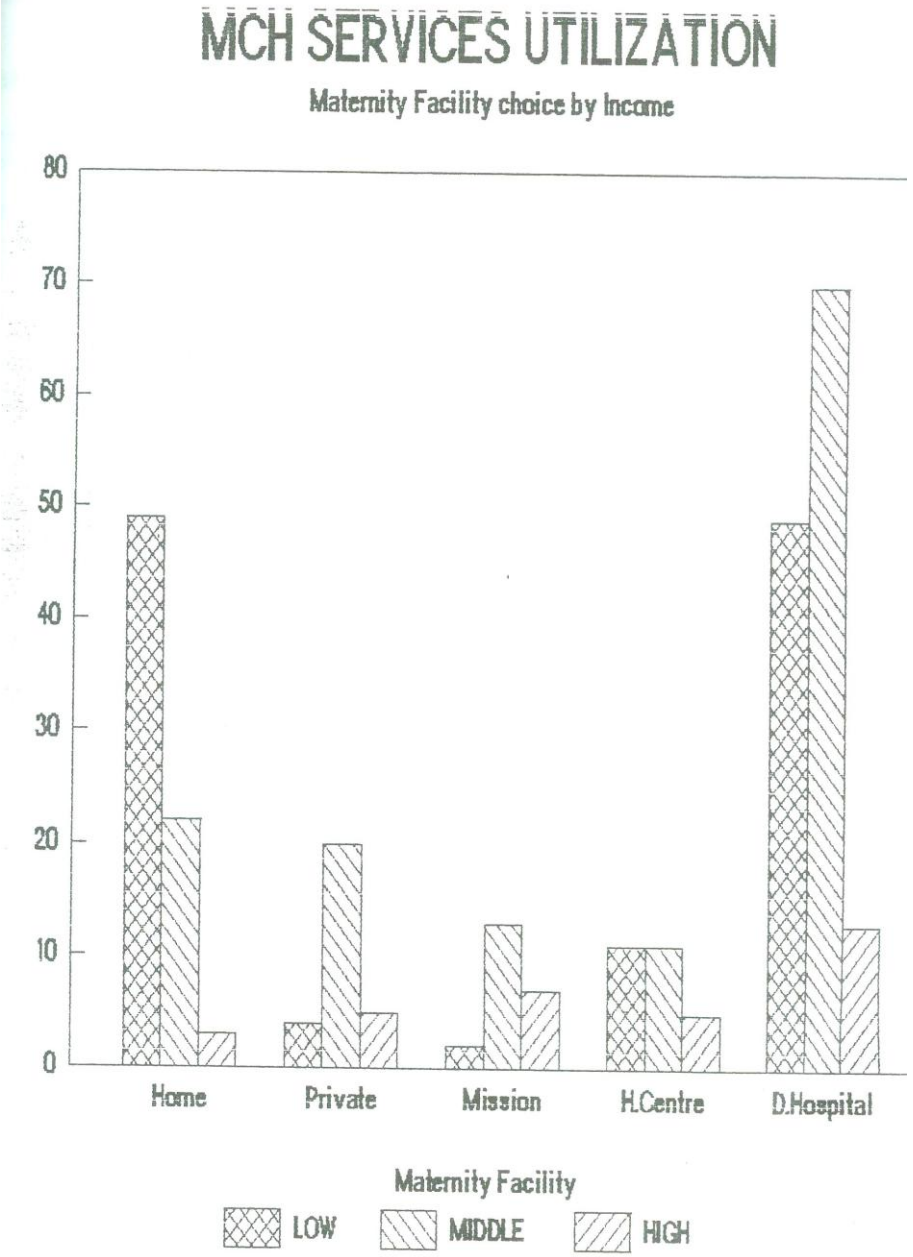

MCH SERVICES UTILIZATION
Maternity Facility choice by Income
80
70
60
50
40
30
20
10
0
Home
Private
Mission
H.Centre
D.Hospital
Maternity Facility
LOW
MIDDLE
HIGH

Table 21 Distribution of health facilities sought for MCH service

MCH SERVICES	HEALTH FACILITY			TOTAL
	Private facility	Govt. facility	Mission facility	
Antenatal	8(1.1)	105(15.0)	3(0.4)	116(16.6)
Family planning	23(3.3)	279(40.0)	9(1.3)	311(44.6)
Child welfare	10(1.4)	238(34.1)	23(3.3)	271(38.8)
TOTAL	41(5.9)	622(89.1)	35(5.0)	696(100.0

These results show that the government health facilities provide the bulk of MCH care to the rural community.A significant difference between the facilities attended by the women for each of the services is quite apparent.

(Chi-squared = 14.39192 D.F. 4 , P -value 0.0061 < 0.05).

In order to determine whether women were satisfied with the MCH services provided by the public health facilities, a question on whether they do perceive any problems with these facilities was asked. The responses given are presented in Table 22

TABLE 22 Distribution of perceived problems in public MCH health facilities.

PERCEIVED PROBLEM	FREQUENCY
Long queues	380 (44.6)
Poor attention by staff	216 (25.4)
Services are poor	253 (29.7)
Other reasons	3 (0.4)
TOTAL	

4.5.4. Factors influencing choice of Maternity and MCH Facilities.

The economic status of the household was examined to assess whether it does influence the choice of a maternity and MCH attended by a member of the household. Two aspects of economic status were considered : employment status of the head of household and regular income from household activities.

The results are presented in Tables 23, Table 24, Figure 9 and Figure 10.

TABLE 23 Distribution of place of delivery by employment status of head of household.

	EMPLOYMENT STATUS		
E OF DELIVERY	NOT EMPLOYED	EMPLOYED	TOTAL
	59(20.9)	14(5.0)	73(25.9)
vate maternity ility	10(3.5)	19(6.7)	29(10.3)
ion health ility	8(2.8)	13(4.6)	21(7.4)
lth centre	17(6.0)	10(3.5)	27(9.6)
trict hospital	85(30.1)	45(16.0)	130(46.1)
other ility*	2(0.7)	0	2(0.7)
AL	181(64.2)	101(35.8)	282(100.0)

-squared = 26.14, D.F. 4, p-value 0.00002957 < 0.05).

* Other facilities was omitted in order to give a valid Chi-squared test.

LE 24 Distribution of maternity facility by household income.

	REGULAR HOUSEHOLD INCOME			
ATERNITY CILITY	LOW	MIDDLE	HIGH	TOTAL
ome	49(17.3)	22(7.7)	3(1.1)*	74(26.1)
rivate maternity acility	4(1.4)*	20(7.0)	5(1.8)	29(10.2)
ission facility	2(0.7)	13(4.6)	7(2.5)	22(7.7)
ealth centre	11(3.9)	11(3.9)	5(1.8)	27(9.5)
istrict Hospital	49(17.3)	70(24.6)	13(4.6)	132(46.5)
OTAL	15(40.5)	136(47.9)	33(11.6)	284

* Cells with less than 5 values = 20%
Missing cases = 3.

(Chi-squared = 45.92589 D.F. 8, P-value 0.0000 < 0.05)

The type of construction of living house had been reported in ther sections of this dissertation to be a proxy indicator of ousehold's regular income and is used to assess the choice of aternity facility by regular households income. This together with he employment status of the head of the household were used as the conomic indicators and their influence on the choice of maternity acility by the mothers was examined.

The results show that employment status and level of regular household income had a significant influence on the choice of where to go for child delivery.

Thus for mothers in the households where the household head is not employed or with low household income, there were more cases of home deliveries than where the household is employed or with middle

higher household income.

a relatively higher number of mothers where head of household employed or household income was in the middle or high level observed to have used private maternity facility than those households where the head was not employed or the household come was low. This pattern was also found to be almost similar ith the mission facilities.

7. EXPENDITURE ON MEDICAL CARE

In this section, results and findings on the direct costs of dical care to households is presented.

e costs assessed is cost of self remedy drugs, cost of escriptions bought from the chemist, fees paid for treatment in tpatient facilities and fees charged in maternity facilities. cept for maternity fees the figures given are for the money pended on direct cost of services. For maternity fees, the igures given are fees paid in a maternity facility attended ithin the last twelve months prior to the date of the interview. here were very few households that incurred expenditure on x-ray vestigation and therefore this aspect is not included in the nalysis.

summary of pattern of expenditure and an annual estimate of edical care expenditure is given at the end of this section.

7.7.1. Cost of self-remedy medicines.

191 households reported to have used some self remedies for e illness experienced by a member of the household.The remedies

were either obtained from the shop or were kept at home. For the households (149) that bought these medicines from the shop, the prices paid are shown in Table 25

TABLE 25 Distribution of cost of self-medication medicines.

Amount in Ksh.	Frequency
Less than 10	101
10 - 20	25
Over 20	23
TOTAL	149

The mean cost of self-remedy medications was Ksh.8.90 S.D.7.50. There was no statistically significant difference on expenditure on self remedy medicines for both the employed and unemployed,

(Chi-squared = 6.89054 D.F. 2 P -value 0.6407 > 0.05).

6.7.2. Cost of Prescriptions.

34(9.1) households whose members had sought intervention from a health care facility bought part of the prescription from the chemist. The expenditure incurred by the household is presented in Table 26.

MEDICAL LIBRARY * UNIVERSITY OF NAIROBI *

TABLE 26 Distribution of cost of prescriptions.

COST IN Ksh.	FREQUENCY
Less than 10	2
10 -20	5
21 -50	11
51-100	7
101-200	6
Over 200	3
TOTAL	34

Mean expenditure on prescriptions was Ksh.78.20 S.D.72.

6.7.3. Cost of outpatient treatment.

248 (41.0)households gave information on expenditure for out patient treatment in both government and non-governmental health facilities. The amount of money incurred is given in Table 27.

TABLE 27 Distribution of expenditure for outpatient treatment.

Expenditure in Ksh.	Frequency
0-20	84 (33.9)
21-50	83 (33.5)
51-100	38 (15.3)
101-200	23 (9.3)
Over 200	20 (8.1)
TOTAL	248

Mean expenditure on outpatient care in both government and non government health facilities was Ksh.62.70 S.D.72.50.

Table 28. Distribution of expenditure on outpatients treatment across the income group:

	INCOME CATEGORY			
EXPENDITURE IN Kshs	LOW	MIDDLE	HIGH	TOTAL
Less than Ksh20	42(43.8)	28(23.9)	14(42.2)	84(34.1)
21-50	24(25.0)	45(38.5)	14(42.2)	83(33.7)
51-100	15(15.6)	21(17.9)	1(3.0)	37(15.0)
101-200	9(9.4)	10(8.5)	3(9.1)	22(8.9)
Over 200	6(6.3)	13(11.1)	1(3.0)	20(8.1)
TOTAL	96(39.0)	117(47.6)	33(13.4)	246(100)

CHI-Squared = 17.15229, D.F.8 P - Value = 0.0286

Missing cases 2 : Cells with E.F <5 3 of 15(20.0)

The table results presented in the above table indicates that expenses incurred by households on outpatients care differed significantly across the different income categories

Statistical test was applied to test whether employment status has some influence on expenditure on outpatient care. No significant difference was observed for those earning salary or wages and those who do not,

(Chi-squared = 3.03243 D.F. 4 P-value 0.5524).

However economic status had a significant influence on expenditure on outpatient care,

(Chi-squared = 17.15229 D.F. 8 P-value 0.0286).

6.7.4. **Cost of laboratory investigations.**

33 households incurred some expenditure on laboratory investigation. The amount of money spent is presented in the Table 29

Table 29 Distribution of expenditure on laboratory investigations:

Amount in Ksh	Frequency
10 - 20	16
21 - 50	7
51 - 100	6
Over 100	4
TOTAL	33

The mean expenditure on laboratory examination by households was Ksh.43.70. S.D. 38.0

6.7.5. Maternity fees.

The fees paid by the women who gave birth in a maternity facility are presented in the following Table 30.

The mean fees paid in a maternity facility was Ksh.197.20 S.D. 290.90. These results shows a very high degree of skewness on fees paid for maternity services.

TABLE 30 Distribution of amount of money paid by women as maternity fees.

Amount in Ksh.	Frequency
Less than 50	115(54.5)
51 - 100	17(8.1)
101 - 200	20 (9.5)
201 - 400	23(10.9)
401 - 600	18 (8.5)
601 - 800	8 (3.8)
801 - 1000	2 (0.9)
1001 - 1200	5 (2.4)
1201 - 1400	5 (2.4)
	211

Fees paid in maternity facilities were highly skewed. This was due to the fact that most of the households had attended government health facilities which charge very minimal fees.

6.7.6. Summary statistics of medical care expenditure.

The table below shows the pattern of out-of pocket expenditure on medical care incurred by households within two weeks prior to the day of the interview except for maternity services. These figures are extrapolated to provide an estimate of annual expenditure on medical care.

TABLE 31. Summary statistics of medical care expenditure.

TYPE OF SERVICE	PERCENTAGE OF H/HOLDS	MEAN	S.D	ANNUAL MEAN	EXPENDITURE S.D
Self-medication	24.6	8.90	7.10	231.40	184.60
Prescriptions	9.1	78.20	72.00	2033.20	1872.00
Lab. Investigation	5.5	62.70	72.50	1630.20	1885.00
Out-patient services	41.0	43.70	38.00	1136.20	988.00
Maternity services	74.6	197.20	290.60	197.20	290.90*

6.8. HEALTH PREPAYMENT SCHEME.

In this section results of household participation in any kind of health insurance scheme , responses to the simulated prepayment scheme in this study and opinion regarding cost-sharing in public health facilities are presented.

6.8.1. Enrolment into Health Insurance Scheme.

Only 155 (11.3%) households were enroled into a medical insurance scheme and 150 (10.9%) of these were enroled in the compulsory National Health Insurance Fund (N.H.I.F.).Of the households enroled into medical insurance scheme, only 29 households had received some reimbursement for expenditure incurred on health within a one year period.

6.8.2. Response to the proposed health prepayment scheme.

A simulation of a typical health pre-payment scheme was discussed with the respondents. In such a scheme members contribute some money yearly. The scheme is managed by the members and meets the cost of medical care to the members, both adults and children.

1046 (76.4) households had a positive response (would like to join such a scheme) to the proposed health prepayment scheme. The 313 (22.8) households that gave a negative response (cannot join such a scheme) gave several reasons why they cannot join the scheme. The major reason given (by 78.8 %) was that they cannot afford pay their contribution. The other common reason was that the head of household have another medical and/or life insurance (8.8 %). These results indicate that households are willing to contribute money for their own medical care.

6.8.3. Opinion on Cost-sharing .

Of households respondent interviewed only 40 (2.9 %) gave a positive response towards acceptability of user-fees in public health facilities (whether it is okay to charge fees in public health facilities). The rest 1302 (95.0 %) did not favour user-fees in these facilities while 28 (2.0 %) did not respond. The reasons cited as to why user fees should not be introduced in public health facilities are presented in Table 31.

TABLE 32 Distribution of reasons why user-fees should not be introduced in public health facilities.

REASONS	FREQUENCY
Government should provide free health services	619 (46.8)
People are paying taxes	253 (19.1)
Drugs are always in short supply	353 (26.7)
Medical staff are not cooperative	13 (1.0)
Not all can afford	47 (3.5)
Other reasons	39 (2.9)
TOTAL	1302

CHAPTER SEVEN

DISCUSSION

7.1. INTRODUCTION

In this section the findings of this study are discussed. First a brief summary of the objectives of this study are highlighted.

This was a cross-sectional household survey on medical care cost and health seeking behaviour in a rural community. 1370 households were studied to assess morbidity, utilization of health facilities for outpatient, maternity and mother and child health services and expenditure on medical care and maternity services. Several socio-economic and epidemiological factors were examined in relation to health care facility utilization.Opinion regarding health prepayment schemes and cost-sharing was also sought.

7.2.MORBIDITY.

605 (44.2 %) households reported an illness episode that had inflicted a member of the household within a two-week recall period. The following diseases and incidence were reported(as perceived by the respondent) malaria (28.3%), respiratory diseases (27.6 %), gastro-intestinal diseases (18.7 %), accidents-burns and traumatic injuries (5.0 %), skin diseases (3.3 %) and headache (2.5 %) as symptomatic illness and all the other diseases and symptoms (14.7 %). The incidence observed differs very slightly from the diseases incidence records in the district [78] and therefore morbidity survey was accurate. Distribution of diseases across the different age groups was found to be statistically significant,

(Chi-squared = 61.74621 D.F.30 P-value 0.0006 < 0.05).

The disease incidence pattern followed the expected distribution. For example there was higher incidence of respiratory diseases amongst the under five- year old group. This is related to the lower immunity to infectious diseases at this age.There was a general decline in morbidity with increasing age with the exception of the age group 15-24 years. The high morbidity at this age can be explained by both social and biological factors. Socially, this group may be exposed to several social activities that may predispose them to infections. For example the males in the rural areas may be staying outside the houses in places infested with mosquitoes. Biologically, this age group is undergoing several changes such as transformation from adolescence, the females may experience menorrhagia. The latter may have contributed to the relatively higher incidence of gastro-intestinal disease. Quite often, menorrhagia is reported as "stomach pains" and then categorized under gastro-intestinal diseases.

There was generally more females reporting each disease than males, and this variation was found to be statistically significant.

(Chi-squared 13.28773 D.F. P-value 0.0387 <0.05)

The mean duration of illness was 5.3 S.d. 2.2 days.

7.3. RESPONSE TO ILLNESS.

Different patients have different desires and expectations related to their symptoms. At some basic some hesitate before consulting medical opinion while others see a doctor with the

slightest symptoms. Some patients prefer an interventionist approach while others expect the opposite. The response to illness is conditioned by the patient preferences for particular outcomes, conditioned by availability of an intervention and personal priorities which can be both social and economic.

In this study, of the 605 households that reported an illness, 42(6.9 %) did not take any action, 191 (31.6 %) used self-remedies obtained from local shops or kept at home and 372 (61.5 %) consulted professional medical care. These results concur with findings that professional health care providers are not consulted for all symptom episodes. There are numerous other methods of coping with illness such as self treatment and lay consultation [34,35,36,37,38].

7.4. HEALTH FACILITY UTILIZATION.

In this section facility choice for outpatient care, maternity and mother and child health care is discussed.

Among the households that sought professional medical care the choices were distributed across the available health facilities both government and non-governmental health facilities. Polyclinic attendance (seeking care from more than one health care facility during the same illness episode) was also reported. This phenomenon was exhibited by 91 (21.5 %) of the households. The distribution of choices among these facilities provided information which has important policy implication. It was observed that about 60 % of the households use government health facilities with the health

centre providing medical care to a substantial proportion of the population (27.1 %). The dispensary was only sought by 9.2 % of the households. The non-governmental facilities provided care to about 40 % of the households, with the private facility serving 28.5 % and the mission facilities 11.1 %.

For maternity care, the government facilities provided care to 35 % with the bulk having had to attend the district hospital with only 9.4 % attending the health centre. 25.4 % of the deliveries took place at home probably assisted by traditional birth attendants(TBAs). It has been demonstrated that TBAs has a significant role in mother and child health care in Kenya and elsewhere in the world. The non-governmental health facilities provided maternity care to a relatively small proportion of the households (13 %).

The government health facilities (district hospital and the health centres) was found to be the major provider of mother and child health care services (antenatal, family planning and child welfare services) and served 89 % of the households. The non-governmental health facilities only provided MCH care to only 11%.

Several factors were analyzed to determine whether they have any influence on utilization of health care facilities:

Distance travelled for outpatient care.

It was observed that the least mean distance travelled to the health facility for outpatient care was to the health centre (3.2 S.d.2.7 kilometres) and dispensary in order of magnitude, however

the distance to dispensary may be even smaller but due to a lesser use by the households, this contributes to the slightly higher distance travelled. The longest mean distance travelled was that to the mission health facility (6.5 S.d 2.9 kilometres). Overall the mean distance travelled was 5.2 S.d 3.1 kilometres. This implies that health care facilities were fairly accessible to most of the population and hence distance was not an obstacle to obtaining medical care. This fact was complimented by the observation that 55 % of the households walked to the health facility. The households that used motorized transport had a mean expenditure on fare of Ksh. 55.30 S.d. 35.50. Facility use showed a sharp distance decay up to a distance of eight kilometres. For distances of more than eight, there is a sharp reversal for the district hospital, the mission health facility and private hospital, thus,whereas the number of households using a facility decreased with the distance, there is a rise in number attending the district hospital, the mission and private facility inspite of the increasing distance. The higher mean distance to the district hospital, and mission facility can be explained in two ways. First, the district is being used as a referral facility by the peripheral health facilities (health centre, dispensary or even by private clinics). Secondly the district hospital is perceived to provide superior care especially for illnesses perceived to be more serious. In this respect, it shares similar regards with the mission and private health facilities. For polyclinic attendance (household member(s) seeking treatment from more than one health care provider), the

rivate facility and the district hospital are the most sought gain reinforcing the notion that the district hospital can be iewed in perspective to have capability for handling complicated ases. In this respect the district is apt to become an important eferral facility for primary health care operations.

Education status.

Education status of head of household did not influence choice f health facility for outpatient care,

(Chi-squared = 13.77714 D.F. 12 P-value 0.3152 >0.05),

however education status of wife had significant influence on facility use (Chi-squared 21.99747 D.F.12 P-value 0.0375 < 0.05).

Similar observations were made by Caldwel-J.C.[54] in Nigeria.

Household size.

Theoretically household size should have an influence on health facility choice for outpatient care. Due to many demands on their time, large families would be expected to attend facilities that minimise their use of time. In this case private facilities would be the facility of choice. In this study household size was found not to have any influence on choice of a health facility,

(Chi-squared 10.33012 D.F.12 P-value 0.5870 >0.05).

Type of disease.

There was a notable discrimination in selection of the health

acility visited for every disease and this was statistically ignificant,

(Chi-squared = 53.21569 D.F. 0.0005 <0.05).

uration of illness.

The duration of an illness may be proxy indicator of the everity of an illness. More often an illness lasting longer than as expected may become worrisome and hence some kind of an intervention is sought. The duration of illness was taken as the ime lapse before the person afflicted seeks for treatment from a ealth care provider/and or facility. The mean duration of illness rior to consulting each of the facilities differed significantly,

(Chi-squared 29.45019 D.F. 12 P-Value 0.0034 <0.05),

ith the highest duration for the district hospital. The longer uration of illness associated with use of this facility can be onstrued to mean that it is more often sought for diseases erceived to be more serious and this therefore again reinforces its use as a more superior facility in handling serious illnesses.

Sex.

Although there were more females than male members that had suffered from an illness that had attended each facility, there was very slight difference in choice for each of the facility by each sex,

(Chi-squared = 9.46833 D.F. 4 P-Value 0.0504).

Economic status.

It has been noted in other sections of this dissertation that economic status does influence the health of a community in several aspects. Income is generally an enabling factor especially with respect to purchasing of health care and does contribute to desirable practices that are crucial to maintenance of a good health status. Income from regular household activities and employment status of the head of household had significant influence on choice of the health facility attended,

(Chi-squared = 44.45681 D.F.8 P-Value 0.0000 < 0.05)

for household income level and

(Chi-squared=9.26230 D.F.4 P-Value 0.0549 < 0.05**).

However the amount of salary earned did not affect the choices,

(Chi-squared = 9.48141 D.F. 5 P-Value 0.0913 > 0.05).

The study revealed that the place where delivery of babies (maternity services) was influenced by both employment status and household income . The difference in choice for those earning salary or wages and those not earning was very significant,

(Chi-squared = 26.15 D.F. 4 P-value 0.00002957 < 0.05).

Also a very significant difference in choice of place of delivery across different levels of regular income from household activities was observed,

(Chi-squared 45.92589 D.F.8 P-value < 0.05).

5. HEALTH CARE EXPENDITURE.

Expenditure on commodities is conditioned by both availability of the commodity itself and availability of financial resources and priorities.

Expenditure was incurred by the households on the following aspects of medical care:

- purchase of self remedy medicines from the shop (24.6 %), medicinal and drug prescriptions from the chemist (9.1 %),
- laboratory investigation charges (5.5 %),
- payment of outpatient services in both government and non-government health facilities (41.0 %) and
- maternity fees (74.6 %).

The mean cost of self-remedy medicines was Ksh.8.90 S.D. 7.1. Mean costs of self remedies for some common ailments such as malaria was Ksh 9.90 ; Respiratory tract disease Ksh.9.40 ; Gastro-intestinal disturbances Ksh.9.30 ; headache Ksh.7.10 and skin problems Ksh.15.0. These mean costs do tally with the average shop price for some disease management regimes. For example the media advertised regime for relief of malaria is Malariaquin 4:2:2:2: a total of ten tablets which cost Ksh.7.50 and if combined with an initial dosage of two Panadol tablets costing Ksh.1.80,an adult will therefore spend Ksh.9.30.

The mean expenditure on prescriptions was Ksh.78.20 S.D. 72. The number of households buying prescriptions may be very much underestimated. Although the question of how many members of households were prescribed drugs to buy from the chemist especially

from the district hospital, it was note that there were persons who could not afford. I did enquire from the private pharmacies in Nerugoya town which have given a direction on this aspect. The notion is that some patients were unable to buy the whole prescription in case of a prescription with multiple drugs due to financial handicap, variously sought advice from the pharmacist as to which component of the prescription to purchase. In some instances, the person can only buy the prescription in divided portions, for example, for two days; one week and so forth depending on the duration of the therapy. In some cases, he will plead with the pharmacist to be allowed to take essential commodity such as a catheter, intravenous fluids, plaster of paris etc. on the premise that he will bring the money immediately he goes back home. But this may take several weeks or months and sometimes he never comes back. In order to minimise this evasion the proprietors of these pharmacies have at times asked for a kind of security and in most cases these patients can only deposit their national identity cards. This inability to afford cost of prescriptions has been noted elsewhere [82].

Fees for laboratory investigations were paid in both government and non-government facilities.

The mean expenditure on laboratory investigations was Ksh.43.70 248 (41.0) households reported to have incurred some expenditure on outpatient services and had a mean expenditure of Ksh. 62.70. Expenditure on outpatient services was however highly skewed. Income from employment did not influence expenditure on outpatient

services and there was no difference in expenditure between households with head of household earning a salary or wage and those not earning,

(Chi-squared = 3.03243 D.F. 4 P-value 0.05524 >0.05).

However income from regular household activities did have a significant influence,

(Chi-squared = 17.15229 D.F.8 P-value 0.0286).

Amount of money paid as fees for maternity fees was highly skewed. This is due to the fact that most women attended public health facilities and specifically the district hospital (54.5 %). This facility charges a very minimal fee of Ksh.20 per day. The mean duration of stay in a maternity facility was 2.9 S.D. 1.7 days. Hence on average women who delivered their babies in the district hospital paid Ksh.58.

This study has revealed that households may be spending colossal sums of their incomes on medical care. Such money if well harnessed, can supplement the financing of public health facilities.

7.6. MEDICAL PREPAYMENT SCHEME AND COST SHARING.

This study revealed that very few household heads are enroled in any kind of health prepayment scheme (medical insurance). Of those who are enroled, 10.9 % of household heads are enroled in the compulsory National Health Insurance Fund (N.H.I.F.). These are the heads of households who are on salary employment. Thus although N.H.I.F. does have a voluntary component for the self employed, it

apparent that the scheme is not popular in the rural areas.

Enrolment of members of a community into a scheme or project rely depends on what the people do perceive as the benefits or rivileges they will receive. Several benefits that the members uld get from such a scheme were highlighted (See details in ppendix 1 - Questionnaire). There was an overwhelming positive sponse towards the medical prepayment scheme discussed with the spondents. 76.4 % of the respondents found the scheme to be vourable. The 22.8 % of the household respondents who did not vour the scheme cited inability to afford the premiums as their jor reason. This fact had been noted by proponents of cost-aring and compulsory health insurance as health financing reform. n order to maintain equity in health, there should be a clear echanism for determining who are unable to afford.

Cost-sharing or user-fees in government health facilities was ech detested and only 2.9 % of the respondents were positive on ts acceptability. The main reason cited why user-fees should not e levied was that government should provide free services to all people (46.8 %) and drugs are always in short supply..

The conception that the government should provide health care to her people is common to the community, especially if confounded with the fact that people feel that the taxes levied are adequate to finance health care. The other notable reason given was that drugs are always in short supply. Response to the necessary preliquisites to be fulfilled prior to introducing user-fees in public health facilities, suggest that adequate supply of drugs to

ublic health facilities was cited in 63.2 % of the responses. rom these results it is apparent people equate better medical care ith availability of drugs and they are willing to pay part of the ost.

CHAPTER EIGHT

CONCLUSION AND RECOMMENDATIONS

5.1. INTRODUCTION.

In this section, the conclusion of the results and recommendations drawn from this study are presented.

5.2. CONCLUSION AND RECOMMENDATIONS.

Utilization of health services is a function of their availability, accessibility and acceptability. Several factors have been identified which influence these conditions. Such factors as distance to health facilities, socio-economic status, morbidity, demographic and quality of care have been found to have varying influence on the utilization of health services. Quality of care in relation to expenditure on both time and money spent and the results are among the factors that influence the decision to seek for medical care. Language, empathy and mode of treatment (e.g.injection, tablets and capsules) used in a health facility are some of the factors perceived by the community which determine quality of care. The professional considerations on what constitute quality care include the following factors:

(i) Basic training and continuing education of staff;

(ii) Permanence of staff and continuity;

(iii) Supervision of staff;

(iv) Proper management of resources;

(v) Regular supply of drugs and other utilities;

(vi) Appropriate and functional laboratory facilities and equipments and their maintenance and

(vii) Standardized disease management guidelines.

The study revealed that most of the population in rural areas ...ely depend on government health facilities for outpatient (60 ..., maternity (55 %) and mother and child health care (90 %) ...rvices. These revelations have very important policy ...plications. If equity is to be assured, these facilities should ...ovide "an acceptable quality of care" This is the acceptable ...andard of quality of service as perceived by the patient and not ...cessarily as judged by the health professionals. In this respect, ...herefore the results of the study suggest that in order for the ...ealth professionals and planners to be successful in their ...ttempts to maximise the health benefits of a given community, they ...eed to know among other factors what patients believe wrongly or ...ightly to be the determinants of quality of health services.

It has been noted elsewhere in this study that the quality of ...ealth care delivery has deteriorated over the years. This ...situation is largely contributed by inadequate resource supply. The ...government is looking for alternative sources of financial ...resources.

Health financing authorities (governments, the World Bank, ...W.H.O. , U.N.I.C.F.) and health economists have indicated that ...community resources, if mobilized, will provide a sustainable ...source of health care financing.

The merits and demerits of both cost-sharing and health ...insurance has been discussed elsewhere in this study.

This study has revealed certain facts about the two health ...financing alternatives in Kenya.

It has been observed from this study that households at even e lowest income levels spend a proportion of their incomes on dical care when such a need is serious. In case of such a need, ch expenditures may be a very large proportion of disposable comes and displace expenditures for other basic necessities. though it is important to avoid use of heavily subsidized public alth services, low income households may not afford to spend much re on health than they already do. Thus, the principal means of aking health services financially accessible to low income ouseholds is through publicly supported health services or by ncluding them under a social insurance scheme whose premium regime an be adapted to their range of affordability.

The study provides sound information on community attitudes owards a prepayment scheme and cost-sharing(user-fees). The facts re that people are willing to participate in such schemes and also iling to pay user fees, however not without some conditions. A prominent condition is regular availability of drugs which is perceived to be the "acceptable quality medical care" by the community.

The study has further demonstrated that households may be using substantially large sums of their incomes on medical care. Such money can be harnessed to supplement financing of public health facilities.

The modalities of mobilizing community resources through a health prepayment scheme constitutes the main features of my recommendations in this study.

User charges for health service are currently being introduced, increased or considered by many countries. Evidence already suggests that user fees can effectively be employed to generate health sector support. In Ghana in 1986, 15.4 % of the total Ministry of health expenditure came from user fees, although this was not without consequences of utilization, especially in rural areas [43]. User-fees at the time of consumption of health services can cause an undesirable impact on health care utilization in the rural areas.One of the sentiments noted during the interviews was that people do not have money at all times, taking in consideration the unpredictability of illness. The rural communities mainly dwell on farming activities for their income and this source is usually seasonal. Therefore any scheme which anticipates to mobilise financial resources from the rural people should tap this money during the period the farmers are selling farm produce or when they are receiving their payout for the cash crops grown. A decentralized health prepayment scheme is the most ideal for such a process.

These are my suggestions for a health prepayment scheme in Kenya.

The current voluntary option for N.H.I.F.membership should be promoted to recruit people from the rural areas and be renamed Rural Health Insurance Fund (R.H.I.F.).

Enrolment of members to such a scheme can only occur if members can verify positively the benefits that can be obtained.Some of the direct benefits should include - availability of drugs and other utilities at the health stations and an

fficient referral system.

The health centre was found to be an important health facility the community. Therefore this facility should bee used as the try point for the scheme. A list of members of should be aintained at the health centre and the district hospital should ave a unit conducting health centre operations to cater for the ommunity living around the hospital so that the district hospital ill solely operate as a referral hospital. Thus this facility is lready being regarded by the community as a referral facility. his is an important observation especially with respect to the nticipated implementation of the PHC concept. Thus the District ospital could be spared to carry out its other roles such as raining of health workers and for bio-social research [81]. lready most of the district hospitals are having specialist Master of Medicine in the fields of Surgery, Medicine, Paediatrics nd Obstetrics and Gynaecology)in most of the fields.

Money collected through the R.H.I.F. should be used solely to finance part of the recurrent expenditure in these facilities and part to promote primary health care projects within the district.

The premium per year should be paid in two instalments according to the number of seasons, and collected during the period the farmers are selling their produce or receiving their payments. For the farmers who are members of Farmers' Cooperative Societies, (in the district where this study was conducted, all coffee and rice farmers belong to these societies) their premiums can be deducted directly from their payouts and remitted to the R.H.I.F..

The fund should operate like a savings account for the contributor and be debited every time a member of the household uses a health facility under the scheme and earn a cumulative interest on the balance of members saving every year. The interests earned by the account can be used to offset an overdue payment of the premiums. Such an operation will, in addition to providing an inceptive for joining, reduce frivolous consumption of health services.

Household premium should be based on a calculated cost of delivering a unit of health to a household a year. This can be computed using the following formula:

Premium (P) = Mean cost of prescription of the commonest illness (d) x Expected population morbidity per year (m) x Average household size (s) x administration cost (p) size.

This can be assumed to be

$$P = s \{ d \times m \} + 0.1p.$$

(m can be assumed to be 2.2 - number of times a person requires medical treatment in a year).

The premiums can be stratified according to the level of benefits or further according to a 'risk-rating' of households. For example the level of benefits can be in the following categories:

Level 1: Low Premium - Subscribers will receive treatment 'free' in all government health facilities;

Level 2: Middle Premium - Subscribers will receive

'free'treatment in government health facilities and other approved health institutions and

Level 3: <u>High Premium</u> - Subscribers will receive 'free' treatment in any available health institution.

Households can be 'risk rated'as follows:

Group 1: Households with children under five year old. These will be expected to use both medical and maternal and child health services;

Group 2: Households requiring medical care only and

Group 3: Households with members requiring special care. For example a member may be suffering from a chronic disease requiring frequent medical attention or special devices.

In either category the community should be involved in all decisions in line with the Primary health care concept of 'community participation for their own health'.

To ensure that access to health care is not denied to the households that cannot afford,a criteria for exemption can be

developed by the community which totally evaluates a household capability of affording.

The axiom "Saving for a Rainy Day " can be used as R.H.I.F. promotion slogan. The success of such a scheme can form the backbone of viable long-term financing of increasingly expensive health care to any rural community.

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