REPUBLIC OF KENYA

MINISTRY OF HEALTH

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Household Health Expenditure and Utilisation Survey Report

2003

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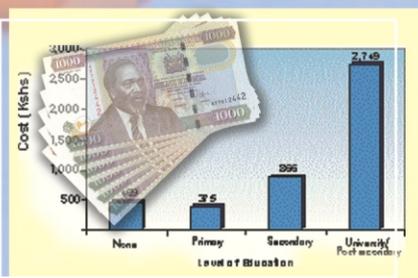
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Abbreviations and Acronyms

ASAL	Arid and Semi Arid Lands
CBS	Central Bureau of Statistics
EA	Enumeration Area
DFID	Department for International Development
GDP	Gross Domestic Product
GoK	Government of Kenya
HLSP	Health Life & Sciences Partnerships
IMPS	Integrated Microcomputer Processing System
MOF	Ministry of Finance
MOH	Ministry of Health
MoS	Measure of size
MTEF	Medium Tern Expenditure Framework
NASSEP	National Sample Survey Evaluation Programme
NGO	Non-Governmental Organization
NHA	National Health Accounts
NHIF	National Hospital Insurance Fund
NHSSP	National Health Sector Strategic Plan
PHR	Partners for Health Reform
PRSP	Poverty Reduction Strategic Paper
SPSS	Statistical Package for Social Scientists
STI	Sexually Transmitted Infections
USAID	United States Agency For International Development
WHO	World Health Organization

Acknowledgements

Executive Summary

Introduction

Kenya Household Expenditure and Utilization Survey was carried out in February/March 2003. The central issues addressed by the Survey were the utilization, expenditure levels and the principal determinants for health care use as well as health insurance coverage.

The survey was partly funded by the NHIF and partly by the United States Agency for International Development. Fieldwork, data entry and analyses were carried out by the Ministry of Health (Division of Planning) in conjunction with the Central Bureau of Statistics (Ministry of Planning and National Development) with technical inputs from the PHR*plus* Project.

The goal of the survey was to provide essential data describing the use of health care services, choice of provider, spending on health care, and the demographic and socio-economic determinants of health care use. Specific objectives of the survey and its analyses were to:

- Estimate the utilisation rates of health care services by those reporting illness by specific subgroups in the population;
- Analyse the pattern and choice of providers used for outpatient and inpatient health care by various socio economic and demographic variables;
- Estimate the amount spent on health care services at the per capita levels;
- Obtain the perceptions of quality of care for different types of providers; and
- Estimate the extent of health insurance coverage in the population.

This Report begins with a brief discussion of the health care framework in Kenya while a comparative analysis of selected countries in the Eastern and Southern African Region is made.

Kenya has multiple sources of financing and provision of health care services. In order to meet its obligations, the government through the Ministry of Health has an extensive network of hospitals, health centres and dispensaries. Services at these facilities are heavily subsidized, with minimal user fees. The health goals of the Ministry of Health include emphasis on access to good quality health care and the elimination or reduction of a variety of important public health problems. At the same time, Kenya has a vibrant private health care sector. Altogether, there are close to 4,500 health facilities. Lack of reliable information on health care use has been identified as a major constraint by the Ministry of Health in identifying health needs, access and in estimating the burden on household of their efforts to meet health needs. The purpose of the survey was to fill this information gap. However, this was a multi-purpose survey whose data permit a wide variety of different analyses and uses.

The Survey Design and Response Rates

The population sample was drawn to represent Kenya's population at the national as well as the provincial levels. The sampling frame consisted of 737 clusters (505 rural and 232 urban) covering 8,844 households. A household questionnaire was used in data collection. However, a total of 8,423 households were actually covered giving a response rate of 95.2 percent. There were nearly 38,000 individuals living in the interviewed households. Four-week and one year recall periods were used for outpatient illness events and hospitalisation respectively.

The survey collected data on the socioeconomic and demographic characteristics of the household, the health status of each household member, insurance coverage, factors affecting the decision to seek care, utilization of outpatient and inpatient services, choice of provider, and out-of-pocket expenditures on health care, individual's perception of his or her health status and on perceptions of quality of health care.

Key Findings

Outpatient Analysis

Overall, 17.5% of all individuals surveyed reported being ill during the four-week recall period. Of those reporting being ill, 77.2% sought health care service. This leaves 22.8 % not seeking care.

During the four weeks recall period, we estimate that Kenyans who were reportedly sick made 4,753,592 visits to providers of health care. This gives an average utilization rate of 14.8 visits per 100 people and 84.5 visits per 100 sick people. Using these figures and assuming that the seasonal variations in the level of utilization were not marked, the annual utilisation rate was 1.92 visits per person per year. However, utilization rates differed among genders, age groups, wealth index quintiles, and other categories.

Individuals in urban households were more likely (19.5%) to report being ill than their rural counterparts (16.9%).

The urban population when sick was also more likely to visit a provider (81.5%) compared to 75.9% of the sick rural individuals. Residents in urban areas tended to make a higher number of outpatient visits (2.2) per capita compared to their rural counterparts (1.8).

Females made 1.2 times as many outpatient visits per capita (2.1 visits per year) as males did (1.7).

The relationship between age and prevalence of illness and reported visits per capita was roughly U-shaped: children aged less than 5 years and adults aged 50 years and over had higher prevalence rates of illness as well as higher per capita outpatient visits than other population groups.

For example, children under 5 years of age and those aged 65 years and over were reportedly ill most frequently (28% and 32%, respectively, in a four-week period) . Other age groups had prevalence rates of illness ranging from 13% to 24%.

Young children and those in the older age groups (50+) were the highest users of outpatient services. Children younger than five years made nearly four visits per child per year while those age 65 years or older made nearly 3 annual outpatient visits per capita. The use rates for outpatient care for the other age groups lie between these two rates.

Persons in the poorest and richest quintile made 1.7 and 2.3 visits per capita per year respectively suggesting that inability to pay for the services may have been a contributing factor to under-utilization by the former group. Analysis showed that while a third of those in poorest quintile reporting being ill did not seek care, only 16% of those in the richest quintile who were sick did not seek care.

Government facilities were overwhelmingly preferred for outpatient health care and accounted for 51% of the visits. Private and mission health facilities accounted for 27% and 8% of the visits respectively while traditional healers attracted a negligible proportion (1%). Pharmacies/chemists accounted for the remainder.

Overall, the annual cost of outpatient visits per capita was KSh 508. However, there were large differences in health care spending across the provinces. In Nairobi, the per capita expenditure was KSh 1,436 per year in comparison to KSh 255 in Western province (about 6 times).

In urban areas, the annual cost of outpatient visits per capita was KSh 912 compared to KSh 387 for the rural areas. This means that urban individuals spent about 2.4 times as much annually on outpatient health care compared with their rural counterparts. Overall, given that public health facilities charge minimal fees for services whereas private facilities rely on user fees to cover most of their operational costs, the choice of health care provider would, no doubt, reflect impact on household health expenditures.

Analysis of per capita expenditure on outpatient health care by age group showed that health care spending tended to increase positively with age from KSh 353 per capita among children aged under 5 to nearly KSh 1,000 for those aged over 50 years.
There were disparities in per capita expenditure on outpatient visits by wealth index. Individuals in the richest quintile spent nearly four times (KSh 1,234) as much as individuals in the poorest quintile (KSh 333).

Most Kenyans who were ill and never sought treatment were hindered by cost (44%) or the long distance to a health facility (18%). Only 10% said that the illness was not serious. Some patients who sought treatment bypassed the health facility nearest their home because services were too expensive (28%) or medicine was not available (16%).

Out-of-pocket expenditures were positively associated with education. Those individuals with no education tended to spend less (KSh 468) compared with those with university/post secondary education (KSh 2,749). Drugs accounted for 69.4 percent of total outpatient health care expenditures.

In- patient Analysis

Kenyans had an average of 15 admissions per 1,000 population per year. The hospitalisation rate was 50% higher in urban (21) than in rural areas (14).

Females had 18 admissions per 1,000 population, 1.5 times as many as the males.

Individuals over 50 years of age had more hospitalisations (22 per 1,000 population) than the 5-14 years age group (7 per 1,000 population), producing a high cost of care for services required by the older age group.

Demand for inpatient health care services appeared to increase with income. Households in the poorest 40% of spending had about 10 admissions per 1,000 persons, compared with 19 per 1,000 for the richer 60%.
Retired people had the highest utilization rates (41) while those seeking work had 11 admissions per 1,000 population annually.

The most important considerations for individuals seeking admission to a health facility were "*proximity*" -17%, "*less cost*" - 16%, "*qualified staff*" - 15.7% and "*was referred*" - 11.5%.

Overall, Kenyans spent KSh 111 out-of-pocket per capita annually for hospital admissions. Females paid twice as much as males, KSh 153 against KSh 70 per capita respectively. Out-of-pocket expenditures per capita were positively associated with age (KSh 72 per capita for those aged under 5 years to KSh 187 per capita for those aged 65 years and over). Individuals in the richest quintile spent 3 times as much as those in the poorest quintile. Public health facilities were the preferred choice when seeking admission (72% of admissions) while private and mission/NGOs health facilities accounted for 16% and 11% of admissions, respectively.

Admissions of the young and the uninsured were likely to take place at public health facilities. Half of insured patients used public facilities, compared with 76% of the uninsured.

Insurance Coverage

Approximately 10 percent of Kenya's population was reportedly having at least one kind of health insurance. While in urban areas about 18 percent were insured, coverage in rural areas was only 7 percent reflecting differences in the levels of formal sector employment and incomes.

Males were slightly (10%) more likely to have health insurance than females (9%). Individuals in the richest quintile were 18 times more likely to be covered by health insurance (25.6%) as those in the poorest quintile (1.4%). NHIF is the largest health insurance provider (88% of the population with insurance cover)

Chapter 1. Introduction

This report presents a wide range of tabulations and analyses from the Household Expenditure and Utilization Survey carried out in 2003.

The report primarily aims to provide information for the National Health Accounts as well as analyses of utilization of both outpatient and inpatient health care services. However, the results are multi purpose, providing invaluable evidence-based information to inform health policy reforms initiatives.

The survey was conducted as a collaborative effort between the Division of Policy Planning of Ministry of Health, the Central Bureau of Statistics (Ministry of Planning and National Development) and Partners for Health Reforms plus (PHRplus), a USAID-funded project. This report is the product of the collaboration.

1.1   Health status

Much like other developing countries, Kenya faces a major challenge in improving the health status of its population. Poverty contributes to the poor health status of the population. Consequently, Kenya's health indicators are not encouraging. Kenya is faced with continued high infant, child and maternal mortality levels, high birth rate and increasing re-emergence of diseases, particularly tuberculosis. The onset of HIV/AIDS has had a profound negative effect on the health of the population (6.7% HIV prevalence rate[1]). Other problems in the health sector include the high cost of drugs, inadequate funding and high cost of health care.

1.2   Cross country Comparative Analysis

Kenya has the largest GDP of the eight Eastern and southern African countries (ESAC) (Table 1.1), and the second-highest GPD per capita. Lower fertility, infant and child mortality rates are evident in Kenya. Total fertility rate (TFR) in Kenya is one of the lowest after Zimbabwe, standing at 4.7 children per woman as compared to 7 in Uganda.

[1] KENYA Demographic and Health Survey, 2003.

Table 1.1: International Comparison of selected health and Economic indicators

Indicator	Zimbabwe	Kenya	Uganda	Rwanda	Tanzania	Malawi	Zambia	Ethiopia
Population (2001/2) million	12.8	31.2	24.2	8.1	35.6	11.6	10.6	67.3
GDP(US$) Billions (2001)	9.1	11.2	5.7	1.7	9.3	1.7	3.6	6.2
GDP per capita US$- 2001	706	362	249	196	271	166	354	95
Infant mortality Rate (IMR) per 1000 births (2001)	76	74	79	96	104	114	112	116
Under five mortality rate (U5MR) per 1000 births [2001]	123	112	124	183	165	183	202	172
Maternal Mortality Rate (MMR) per 100,000 live births [1998]	700	590	510	1100	530	1100	650	870
Total Fertility rate (2000)	3.9	4.7	7.1	5.7	5.1	6.1	5.6	6.1
Literacy rate (2000)	89.3	74	68	68	76	61	79	40.3
Life Expectancy (1999) (years)	35.4	56	44.7	38.2	44	38.5	39	45.7
Contraceptive Use (%) [1998]	54	39	23	13	25	31	25	8

Sources:
UNDP-Human Development Report 2003
Kenya- Multiple Indicator Cluster Survey, 2000
Kenya Demographic and Health Survey, 1998
Kenya: Population and Housing Census 1999

1.3   National Health System

1.3.1 Organization and structure

The health sector comprises the public and private health system, with the major player being the Ministry of Health. Health care services are delivered through a network of about 4,500 facilities with the public health system accounting for 52% of total facilities.

Public health care services are delivered through a hierarchical structure. The hospital system is the backbone of care provision. A network of these facilities ranging from the National referral and specialised Provincial, District and Subdistrict hospitals provide integrated curative, rehabilitative care and supportive activities for peripheral facilities.

A network of health centres and dispensaries provides basic care to the rural areas where a majority of the population live. These are normally the first contact points with the community.

1.3.2 Financing the National Health System

On attaining independence in 1963, the Government of Kenya (GoK) committed itself to providing "free" health care services as part of its development strategy to alleviate poverty and improve the welfare and productivity of the nation.

However, in the 1980's the government felt it was no longer able to provide unlimited free health care. Lack of adequate resources for the health sector was identified as a major problem. The resource gap - with severe impact on the financing for the health sector - was as a result of:

- significant high demand for health services,
- constraints on the resources available from all sources,
- complex epidemiological and demographical profiles;
- economic pressures and subsequent implementation of structural adjustment programmes (SAPs) and;
- donor fatigue.

It was imperative that some health care financing policy measures had to be instituted to address the problem. Thus, the health financing reform was introduced in late 1989 in government hospitals and health centres to supplement government financing through the introduction of user charges.

No country has limitless financial resources to expend on health. Thus, while arguing for an increased share of funding for health, (the Ministry of Health expenditure as a share of the total budget stands at about 8%, a figure well below the Abuja Declaration target of 15%), a major focus is to obtain maximum returns on health for the available resources.

The private sector (both for-profit and not-for-profit) provision of health services is well developed, accounting for a substantial share of overall provision of health care. Private sector health services are mainly concentrated in the urban areas essentially providing curative services. Pharmacies/chemists are responsible for substantial distribution of pharmaceutical goods, which are mainly paid for by households' out-of-pocket spending.

Commercial heath insurance is increasingly available, but only a small proportion of the population is covered. Large employers provide medical benefit schemes to their workers. Kenya has the National Health Insurance Fund (NHIF), which provides health insurance coverage.

1.4 Health Policy

In 1994, the Government approved the Kenya Health Policy Framework (KHPF) paper as a blueprint for the development and management of health services in the country. The document spelt out the long-term strategies and agenda for the health

sector reforms process. This process revolves around two critical issues, namely: how to deliver a basic package of quality health service to a growing population and how to finance and manage those services in a way that guarantees their availability, accessibility and affordability to those most in need of them.

The policy agenda presented in the KHPF is broad and ambitious considering the fact that Kenya has high levels of poverty and a majority rural population. 52% of Kenyans lived below the poverty line in 1997 [2] compared to the 1994 level of 40%. 80% of the population live in rural areas. The relative poverty of the population means that it would be difficult for many to finance their own health care. The rural nature of the population means that it will be difficult to make health care equally accessible to everyone. These issues are meant to be addressed through the strengthening of the District Health Management Boards (DHMBs) and Hospital Management Boards (HMBs) to ensure that guidelines on fee waivers and exemptions are followed.

To operationalize the policy, the Ministry developed the National Health Sector Strategic Plan (NHSSP) 1999-2004 aimed at translating the policy objectives into an implementable programme by involving other key stakeholders in the health sector. Subsequently, policies and strategic objectives in the two policy documents have been downloaded into the Poverty Reduction Strategy Paper (PRSP) and into an implementable budget within the Medium Term Expenditure Framework.

1.5 Role of Households in Health Care Financing

Several studies done in Kenya to quantify household health expenditures suggest that the level of out-of pocket expenditure is substantial and growing.

The National Health Accounts (NHA) analyses of 1998, provided estimates of the sources and uses of funds in the health sector. This assessment of health care expenditures showed that, the role of households in health financing was far larger than previously thought. Estimates from the 1998 NHA indicated that more than 50 percent of health care expenditures came from households in the form of out-of pocket payments.

In another study[3], it was estimated that in 1983/84, the household out-of pocket health expenditures accounted for 41% of total financing of recurrent health expenditure. Yet in another study[4], medical care accounted for 1.3% of total urban household consumption expenditure.

1.6 Objectives of the Household survey

The goal of the Survey was to provide essential data describing the use of health care services, spending on health care, and a variety of socio-economic determinants of health care use and spending in Kenya. The importance of such information lies in the high priority given to the promotion of equitable access to quality health services under health reforms in Kenya. Information on consumer behaviour is critical to a better understanding of who benefits from what type of health care services.

[2] Central Bureau of Statistics, Welfare Monitoring Survey III, 1997 the Medium Term Expenditure Framework.
[3] IDS Study No 9 (1993): Expenditure and financing of the Health Sector in Kenya, G Bloom , M. Segall and C. Thube
[4] Republic of Kenya, Ministry of Finance and Planning: Basic Report- Urban Household Budget Survey, 1993/94, (January 2002)

Specific objectives of the survey were to:

- Estimate the utilisation rates of health care services by those reporting illness within specific sub-groups in the population;
- Analyze the pattern and choice of providers used for outpatient and inpatient health care by various socio-economic and demographic variables;
- Estimate per capita spending on health care services;
- Obtain the perceptions of quality of care for different types of providers; and
- Estimate the extent of health insurance coverage in the population.

However, this was a multi-purpose survey whose data permitted a wide variety of analyses. The population sample was drawn to represent Kenya's population both at the national as well as the provincial levels. In addition, the data were disaggregated to urban/rural areas.

1.7 Rationale for the Survey

Information on health care use and spending is essential for documenting differences in health care needs and access, and for estimating the burden on population of their efforts to meet their health care needs.

In addition, data on related socioeconomic characteristics of population collected in the survey could be used to develop predictive models to new interventions.

1.8 Organization of the report

Chapter Two Methodology describes the methodological issues relating to the survey with a focus on sampling approach and survey implementation.

Chapter Three Housing and Household Amenities presents the population distribution by housing characteristics, sources of cooking and lighting energy, water and sanitation coverage and household assets.

Chapter Four presents the Household Demographic and Socio-economic characteristics

Chapter Five presents levels of health care service utilization, information describing the health status of the population while household out-of-pocket health expenditures by different characteristics are analysed.

Chapter Six presents health insurance coverage.

1.9 Principal questions addressed

The analyses of the Survey data addressed several questions, which included:

- **Equity**
  - Does use of outpatient care vary with standard class demographic variables?
  - Do out-of-pocket expenditures on outpatient care vary with standard class demographic variables?
  - Does use of inpatient care vary with standard class demographic variables?
  - Do out-of-pocket expenditures on inpatient vary with standard class demographic variables?

- **Access**
  - Are there groups at risk of deficient access to inpatient or outpatient care?
  - If there are such groups, what explains their deficient access?
  - What are their reasons for not seeking care?
  - Are they prevented by finances, geographical distribution of health care facilities (i.e. distance) or some other reasons?

- **Efficiency and distribution of services by type of provider**

  - Is consumption of health care efficient? For example, are there groups that use significantly more than average inpatient or outpatient care despite having no greater than average need for such care?
  - How are use and expenditures on health care distributed by type of provider;
  - How are use and expenditures distributed between public and private providers?

Chapter 2. Methods and Data Sources

This chapter describes the sampling approach and the implementation of the survey. The survey was carried out between February and March 2003 and was designed to provide national and provincial estimates including health expenditures by households as well as utilization patterns of health care services.

2.1 Survey Methodology

2.1.1 The Sampling Frame

Kenya is divided into 8 administrative provinces. The provinces are in turn subdivided into 70 districts. Each district is subdivided into divisions while the divisions are split into locations and finally each location into sub-locations.

During the 1999 population census, each sub-location was subdivided into smaller units called Enumeration Areas (EAs). Kenya has about 62,000 EAs. The EAs provided census information on households and population. This information was used in the design of the National Sample Survey Evaluation Programme IV (NASSEP) master sample with 1,800 selected EAs. The cartographic records for each EA in the master sample were updated in the field, one year preceding the NHA survey.

The frame covered all the 70 districts of the country and the 1,800 clusters were distributed into 540 urban and 1,260 rural clusters. The frame extended to the rural areas of the North Eastern Province and other areas of the Arid and Semi Arid Lands (ASAL) in Rift Valley Province, which earlier sampling frames (NASSEP I-III) did not cover. At the same time, the urban segment that was covered by these earlier frames constituted very few clusters which did not provide adequate coverage of nomadic populations that predominate in these areas.

2.1.2 Stratification

The province provided a natural stratification of the population. The six major urban centres namely: Nairobi, Mombasa, Kisumu, Nakuru, Eldoret and Thika, were further sub-stratified into five socio-economic classes based on incomes to circumvent the extensive socio-economic diversity inherent in them as follows: upper, lower upper, middle, lower middle and lower, and thus improving the precision of estimates due to reduced sampling variation.

2.1.3 The Sample Size and Allocation to the Provinces

It was estimated that 8,844 households would provide reasonable estimates for the Survey at both provincial and national levels as well as disaggregation to urban and rural components of the country.

This sample was to yield 6,072 interviews in the rural and 2,772 in the urban clusters (Table 2.1). This was to be achieved through coverage of 737 clusters (506 rural and 231 urban clusters). Twelve (12) households were to be covered in each cluster. The method of proportional allocation was used in assigning the sample households to the provinces and districts.

Table 2.1: Distribution of clusters and households in the sample by Province, Urban/Rural, Kenya, 2003

Province	Clusters			Household		
	Rural	Urban	Total	Rural	Urban	Total
Nairobi	0	90	90	0	1,080	1,080
Central	82	18	100	984	216	1,200
Coast	53	37	90	636	444	1,080
Eastern	85	15	100	1,020	180	1,200
North Eastern	34	11	45	408	132	540
Nyanza	82	18	100	984	216	1,200
Rift Valley	98	21	119	1,176	252	1,428
Western	72	21	93	864	252	1,116
TOTAL	506	231	737	6,072	2,772	8,844

2.2   Data Collection

Data were collected in February/ March, 2003 in all provinces using face to face interview method. In each household included in the survey, information was collected on demographic and socio economic characteristics of the members. Other information collected included household access and utilization of health care services for both outpatient and inpatient health care; cost of treatment and health insurance coverage.

In order to minimize non-response, interviewers made up to three call backs on households which were difficult to contact. Completed questionnaires were reviewed for completeness as well data quality.

2.3   Data processing and Analysis

All completed questionnaires were delivered to Nairobi for data entry. Questionnaires were edited before entry. Data were entered into Integrated Microcomputer Processing System (IMPS) data entry programme by a team of data capture clerks and the process overseen by Data Entry Supervisors. The IMPS files were then converted into SPSS, the software used for data analysis. Much of the analyses were replicated using STATA software.

2.4 Weighting the Sample

The sample based on NASSEP IV is not self-weighted. It was, therefore, necessary to weight the data to enable expansion of the sample results to the population. Weighting was done using the cluster design weights from the NASSEP IV sampling frame. Necessary adjustments for population change and non-response were done. The selection probabilities were based on the measure of size (MoS) and the sampling interval of the clusters within the district. Adjustment of the weights was done upon completion of the data entry.

2.5 Sample Coverage and Response Rates

Table 2.2 shows the sample coverage and household response rates. A total of 8,844 households were selected for the survey. Of these 8,423 were successfully interviewed giving a response rate of 95.2 percent. The survey reported observations on 38,121 individuals living in the 8,423 households.

Table 2.2: Household Response Rates by Province and Place of Residence

Province/District	Urban		Rural		Total		% Response		% Response
	Selected	Responded	Selected	Responded	Selected	Responded	Urban	Rural	Total
Nairobi	1,080	940	0	0	1,080	940	87.0	NA	87.0
Central	216	215	984	976	1,200	1,191	99.5	99.2	99.3
Coast	444	401	636	537	1,080	938	90.3	84.4	86.9
Eastern	180	174	1,020	997	1,200	1,171	96.7	97.7	97.6
North Eastern	132	127	408	385	540	512	96.2	94.4	94.8
Nyanza	216	208	984	964	1,200	1,172	96.3	98.0	97.7
Rift Valley	252	244	1,176	1,158	1,428	1,402	96.8	98.5	98.2
Western	252	245	864	852	1,116	1,097	97.2	98.6	98.3
NATIONAL TOTAL	2,772	2,554	6,072	5,869	8,844	8,423	92.1	96.7	95.2

2.6 Technical Notes

2.6.1 Allocation of the sample

This section presents a brief illustration of the strategy used in allocating the sample to the provinces.

If N is considered to be the total number of households in the country, Nh the number of households in the *h-th* province, n_h the total number of households allocated to the *h-th* stratum such that:

$$\sum n_h = n$$

then

$$n_h = \frac{Nh}{N} \; n$$

Within each province, the allocation of households to the districts as well as rural/urban areas was done proportionately.

2.6.2 Selection of the Clusters for the survey

Within each district, the n_h allocated clusters were selected from the existing Nh clusters using the equal probability sampling method (EPSEM). Before the selection process, clusters were arranged in a serpentine order and, using the calculated sampling interval and the random numbers, sample clusters were selected.

2.6.3 Selection of the Households

Twelve households were selected from each cluster systematically using the household listings in the cluster. There was no provision for replacement of non-responding households. However, structures found vacant (for example, the occupants moved away after the listing was made) were replaced.

Chapter 3. Housing and Household Amenities

Data were collected on some aspects related to the socioeconomic level of the households. These included type of dwelling, floor, wall and roofing materials, source of cooking and lighting energy, source of drinking water and type of sanitation facilities.

3.1 Housing Characteristics

Results indicate that 30% of the households had permanent dwellings - 59% in urban and 18% in rural areas (Table 3.1). Nearly 38% of the households had cemented floors - 76 percent of urban households and 23 percent for rural households. 58 percent of the households had floors of earth/cow dung.

Table 3.1: Percentage distribution of Households by Housing characteristics, KENYA

Housing Characteristics	PROVINCE								Residence		Total
	Nairobi	Central	Coast	Eastern	North Eastern	Nyanza	Rift Valley	Western	Urban	Rural	
Type of dwelling											
Permanent	66.0	23.3	36.9	32.6	17.0	18.5	29.8	11.4	59.2	17.7	29.5
Semi-permanent	20.5	55.6	25.4	9.2	7.2	34.6	47.4	56.2	30.5	46.8	42.2
Temporary	13.4	20.8	34.2	16.4	15.8	30.2	8.7	31.9	9.8	24.2	20.1
Traditional	0.1	0.3	3.9	1.8	60.1	16.7	14.1	0.5	0.5	11.3	8.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Floor material											
Earth/cow dung	16.5	57.5	49.3	61.2	74.1	74.8	49.4	86.8	17.5	73.2	57.5
Stone	3.9	3.5	1.6	1.1	0.0	1.2	1.5	0.5	2.8	1.4	1.8
Cement/bricks	75.6	38.2	48.3	33.7	16.3	23.6	44.4	12.6	75.8	23.3	38.2
Others	4.0	0.8	0.8	4.0	9.6	0.4	4.7	0.1	3.9	2.1	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Wall material											
Mud/cow dung	18.8	27.8	46.1	27.7	5.6	74.9	39.1.1	84.3	18.2	53.8	43.7
Stone	53.2	21.9	9.7	5.8	0.2	0.8	3.3	0.4	34.0	5.2	13.3
Cement/bricks	11.1	3.9	36.0	35.6	14.7	21.6	19.2	10.5	28.5	16.1	19.6
Wood	3.6	34.2	0.5	25.7	23.2	0.4	15.6	0.0	7.4	15.9	13.5
Grass/makuti	0.2	0.3	1.7	2.4	23.0	0.1	4.7	0.2	0.4	3.1	2.4
Iron sheets	12.4	10.6	0.2	2.4	0.7	2.1	2.4	0.3	6.5	3.0	4.0
Others	0.7	1.3	5.8	0.4	32.6	0.1	5.7	4.3	5.0	2.9	3.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Roof material											
Cement/bricks	20.8	0.6	1.6	0.3	0.2	0.4	2.6	0.2	9.6	0.4	3.0
Grass/makuti	0.0	1.0	44.2	21.0	78.5	29.1	22.3	31.1	3.9	29.6	22.3
Iron sheets	58.9	93.1	50.0	76.2	19.3	67.6	68.9	67.7	74.2	67.1	69.1
Tiles	12.1	3.9	2.1	0.6	0.4	1.3	1.8	0.0	7.2	0.8	2.7
Others	8.2	1.4	2.1	1.9	1.6	1.6	4.4	1.0	5.1	2.1	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

3.2 Sources of Cooking and Lighting Energy

Variation in use of kerosene as a source of cooking energy was pronounced by province - 76 percent of households in Nairobi used kerosene compared with only 2 percent in North Eastern (Table 3.2). Kerosene was used more in urban areas (55% of the households) compared to rural areas (3% of the households). Overall, however, in nearly two-thirds (64%) of the households, firewood was used as main source of cooking energy.

Use of electricity as source of lighting   energy varied substantially by province, from 3% of the households in Western to 62% in Nairobi. Kerosene was dominant in both urban and rural areas (54% and 88% respectively) while firewood was a major source of lighting energy in the North Eastern province (35%).

Table 3.2: Percentage distribution of Households by Sources of cooking and lighting energy, KENYA, 2003

Housing Characteristics	PROVINCE								Residence		Total
	Nairobi	Central	Coast	Eastern	North Eastern	Nyanza	Rift Valley	Western	Urban	Rural	
Source of cooking energy											
Firewood	1.4	69.0	48.7	86.0	83.3	79.7.1	57.2	88.8	6.4	87.3	64.4
Charcoal	7.3	12.4	18.4	8.5	14.0	5.8	25.1	8.1	31.2	8.8	15.1
Kerosene	75.7	17.1	30.4	4.6	2.0	4.1	15.4	2.5	54.7	3.2	17.7
Gas	13.2	1.2	1.9	0.2	0.0	0.2	1.7	0.0	6.5	0.4	2.1
Electricity	2.1	0.0	0.1	0.4	0.2	0.1	0.4	0.1	0.8	0.2	0.4
Other	0.2	0.3	0.6	0.3	0.0	0.0	0.2	0.4	0.4	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Source of Lighting energy											
Electricity	62.3	16.2	19.3	6.0	10.3	5.6	18.6	3.1	45.5	5.5	16.8
Kerosene	37.0	82.2	80.1	89.4	50.5	93.5	71.6	96.6	53.8	88.3	78.5
Other	0.7	1.8	0.6	4.6	39.2	0.9	9.6	0.3	0.7	6.2	4.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

3.3 Water and Sanitation

Access to adequate sanitation facilities and safe drinking water are important determinants of health status. The Survey results showed that majority of households in urban areas had access to piped water (86%), compared to about a fifth (21%) of households in rural areas. Nearly 85 percent of households had access to sanitation facilities, with majority having the pit latrine type (Table 3.3).

Clearly, availability of sanitation facilities varied by province. Some 73% of the households in North Eastern did not have access to sanitary facilities while there was negligible proportion without access in Central province. It is important to note that in North Eastern province, the population is largely pastoral, and this could explain the large proportion of population without access to safe excreta disposal facilities. It was noted that 21 percent of households in the rural areas reported having no access to toilet facility compared to about 1 percent of households in urban areas.

Table 3.3: Percentage Distribution of households by sources of water, sanitation facilities, province and residence, KENYA, 2003.

| | PROVINCE | | | | | | | | Residence | | |
	Nairobi	Central	Coast	Eastern	North Eastern	Nyanza	Rift Valley	Western	Urban	Rural	Total
Source of Water											
Piped into residence	33.7	6.9	6.2	1.4	0.6	1.0	10.3	1.6	18.0	3.7	7.8
Piped into the compound or plot	43.2	18.8	6.3	17.0	6.1	2.7	18.2	3.2	32.7	8.2	15.2
Public well	0.3	4.5	2.5	3.4	13.5	3.5	0.7	3.1	1.6	3.2	2.8
Public tap	20.6	13.8	47.8	17.6	3.4	7.6	15.5	3.2	34.8	8.9	16.2
Well/borehole with pump in the compound/ well In the residence	0.7	12.1	12.4	3.0	10.5	16.3	7.7	12.6	5.0	10.9	9.3
Rainwater collection	0.1	2.2	0.1	0.3	0.0	0.2	0.4	0.2	0.1	0.7	0.5
Well without hand pump	0.2	7.5	2.9	5.5	6.0	7.1	4.9	5.3	0.7	6.9	5.1
Pond/river/stream/ Dam	0.0	31.1	16.0	45.1	51.0	30.6	28.9	24.7	2.7	38.1	28.1
Protected spring	0.0	0.5	0.1	2.4	0.0	15.2	1.6	24.7	0.8	7.5	5.6
Unprotected spring	0.0	1.1	1.7	2.1	0.0	10.6	6.8	17.4	0.4	7.7	5.7
Rock catchments	0.0	0.1	0.0	0.0	0.0	0.0	1.1	1.2	0.1	0.6	0.4
Others	1.2	1.4	4.0	2.2	8.9	5.2	3.9	2.8	3.1	3.5	3.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Toilet type											
Own flush toilet to sewage/septic tank	26.1	2.0	5.3	1.4	0.4	2.1	4.9	0.8	15.4	1.0	5.1
Shared flush toilet in area	37.5	9.5	4.8	1.8	0.6	1.2	7.2	0.2	24.2	1.0	7.6
Traditional pit latrine	29.8	77.8	55.7	72.5	16.7	68.6	58.9	89.2	49.8	69.7	64.1
Ventilated improved pit latrine	2.8	10.5	4.9	6.3	8.1	5.4	10.2	4.5	8.4	6.6	7.1
Bucket latrine	0.0	0.0	0.2	0.0	1.1	0.3	0.0	0.2	0.1	0.1	0.1
Other	3.6	0.1	0.6	0.5	0.0	0.1	0.4	1.8	1.2	0.6	0.7
Bush or field	0.2	0.1	28.5	17.5	73.1	22.3	18.4	3.3	0.9	21.0	15.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

3.4 Household Possessions

Table 3.4 presents information on household ownership of major durable goods. Only 19 percent of the households owned television sets but majority of households had radio sets (77%). The low proportion of households (31%) possessing radios in North Eastern province is mainly as a result of poor local radio signal reception.

Twenty eight percent of households reported owning a bicycle; less than one percent owned a motor cycle while about 4 percent of the households owned private cars.

Survey results showed that there were significant differences between urban and rural areas in the percentage of households possessing various household goods. For example, while 38 percent of households in urban areas had television sets, only 11 percent in rural areas had them. Again, 25% of the households in the urban areas had telephones (mobile and fixed land lines) compared to only 4 percent of the households in the rural areas. In Kenya, there has been an ambitious expansion of mobile telephone networks focusing on areas located along major road networks, busy urban and tourist attraction areas as well as populated rural areas.

On the whole, households in North Eastern province are less likely to possess durable goods compared to other provinces, thus pointing to the uneven economic development among the various provinces of the country.

Table 3.4: Percentage of household by type of possessions, Province and Residence

Characteristic	Province								Residence type		
	Nairobi	Central	Coast	Eastern	North Eastern	Nyanza	Western	Rift Valley	Urban	Rural	TOTAL
Radio	86.1	87.3	72.7	71.4	31.3	70.2	78.6	80.6	86.8	72.7	76.7
Television	46.4	24.9	15.4	11.4	2.9	11.5	19.9	11.6	38.1	11.3	18.9
Bicycle	11.6	27.5	26.3	29.3	0.8	30.2	27.4	47.8	21.9	30.3	27.9
Motor cycle	1.1	0.9	0.6	0.5	0.2	0.3	0.9	1.1	0.6	0.8	0.7
Car	12.2	2.2	2.8	2.0	1.2	1.5	4.5	0.7	7.3	1.9	3.5
Telephone	35.4	8.5	10.8	1.7	5.1	3.7	10.9	4.8	24.8	3.7	9.6
Refrigerator	16.8	1.7	6.5	0.5	4.1	1.5	3.4	0.9	10.4	1.2	3.8

Chapter 4. Household Demographic Socio-economic Characteristics

This chapter presents background information of members of the 8,423 households covered in the survey, weighted to represent all households in Kenya with projected population of 32 million people.

4.1 Household Demographic and Socio-economic Characteristics

Table 4.1 shows the main demographic characteristics of the population covered during the survey. Males constituted about 49% of the population. This is generally consistent with the sex distribution found in the Kenya 1999 population and Housing census.

Over one-fifth (23%) of the population interviewed lived in urban areas compared to 77% who lived in the rural areas. Overall, only 10% of the population had health insurance cover.

Urban households appear to be slightly less crowded than rural households. The mean number of persons per household is 3.5 in urban areas compared to 4.6 in rural areas. Looking at the provincial distribution, the mean number of persons per household ranges from a low of 3.6 in Nairobi province to 6.2 in North Eastern province, suggesting that the latter province experiences greater crowding. The situation in other provinces is as follows: Central 3.7 persons, Coast 4.1; Eastern - 4.5; Nyanza 4.3; Rift Valley 4.3 and Western 4.9 persons.

Age distribution: Of importance is the age composition of the population. As seen in Table 4.1, Kenya's population has a very young age structure with nearly 13% being aged less than five years while those under 15 years constitute about 41%. At the other end of the spectrum, only 3.4% of the population is 65 years old and over. The young age structure of the population is a function of high levels of fertility that exist in Kenya. There is, however, evidence that fertility is falling.

The broad-based pyramidal age structure, no doubt, has very important implications for the delivery of health care to the population. For example, the population aged 0-4 years is important for two reasons. Firstly, it is the age group that provides future school population and secondly from the point of view of planning for child health care. An interesting characteristic of this age group is that its magnitude in relation to the total population is very sensitive to variations in fertility and child mortality.

Table 4. 1: Percent Distribution of sampled population[6] By Various Characteristics, KENYA, 2003.

Characteristic		Number	Percent
	Male	15,842,396	49.3
	Female	16,199,133	50.4
	Not Stated	83,776	0.3
	TOTAL	32,125,305	100.0
Age in Years	0-4	4,294,372	13.4
	5-14	8,842,514	27.5
	15-24	6,531,669	20.3
	25-34	4,983,051	15.5
	35-44	3,144,679	9.8
	45-54	1,956,070	6.1
	55-64	1,212,700	3.8
	65 +	1,093,717	3.4
	Not specified	66,533	0.2
	TOTAL	32,125,305	100.0
Marital Status	Never Married	19,542,275	60.8
	Married	10,700,351	33.3
	Divorced/separated	506,550	1.6
	Widowed	1,034,658	3.2
	Not Stated	341,470	1.1
	TOTAL	32,125,305	100.0
Level of education	None	10,009,860	31.2
	Primary	15,921,353	49.5
	Secondary	5,238,363	16.3
	University/Post Secondary	310,025	1.0
	TOTAL	32,125,305	100.0
Employment Status	Working	8,579,340	26.7
	On leave/sick	177,378	0.6
	Seeking work	1,087,250	3.4
	Retired	304,170	0.9
	Homemakers	4,007,673	12.5
	Students	9,436,389	29.4
	Other	4,823,989	15.0
	Under age	3,314,050	10.3
	Not stated	395,066	1.2
	TOTAL	32,125,305	100.0
Residence	Urban	7,403,220	23.0
	Rural	24,722,085	77.0
	TOTAL	32,125,305	100.0

[6] weighted

Table 4. 1: Percent Distribution of sampled population[6] By Various Characteristics, KENYA, 2003 (contn'd).

Characteristic		Number	Percent
Province	Nairobi	2,563,297	8.0
	Central	3,909,728	12.2
	Coast	2,801,356	8.7
	Eastern	5,103,110	15.8
	North Eastern	1,187,767	3.7
	Nyanza	4,804,078	15.0
	Rift Valley	7,902,033	24.6
	Western	3,853,936	12.0
	TOTAL	32,125,305	100.0
Insurance cover	Insured	3,124,852	9.7
	Not Insured	26,754,996	83.3
	Not stated	2,245,457	7.0
	TOTAL	32,125,305	100.0
Rating of own Health	Very good	7,325,973	22.8
	Good	19,581,106	60.9
	Satisfactory	3,694,097	11.5
	Poor	1,211,352	3.8
	Not Stated	312,778	1.0
	TOTAL	32,125,305	100.0

Marital Status

Nearly 61% of the while only 1.6 of the population was population were single (never married) reported divorced/separated. Some 3% were reported to be widowed.

Education

Nearly a third (31%) of the population was reported not to have had any education[7] while nearly half of the population had some primary level education (49.5%). Only one percent had some university/post secondary education.

Employment/Occupation Status

About 27 percent of the population was reportedly engaged in both formal and informal employment while 3.4% were seeking work. Additional 29% were students.

Residence by Wealth index Quintiles

Table 4.2 gives the rural and urban distribution of population by wealth index quintiles. Clearly, the population living in rural areas tend to be significantly poorer than their urban counterparts. For example, nearly 97 percent of persons in the poorest quintile live in rural areas compared to 3 percent living in urban areas.

[7] This figure includes children aged less than 6 years, and therefore not expected to be in school.

This pattern holds true across other quintiles with only 12 percent of persons in the richest quintile residing in rural areas compared to 88% living in the urban areas. This scenario is likely to affect the ability of rural households to access health care services, especially when out-of-pocket costs are high.

Table 4.2: Percent Distribution of population by wealth index quintiles, and Urban/Rural residence, Kenya, 2003

Quintiles	Urban	Rural
Poorest	2.8	97.2
Second	5.4	94.6
Middle	16.2	83.8
Fourth	39.3	60.7
Richest	87.7	12.3
Total	25.2	74.8

Chapter 5. Utilisation of Health Services and out-of-pocket Expenditures

5.1 Outpatient Analysis

This section presents the pattern of utilization of outpatient health care services, frequency of use and factors that determine this use.

5.1.1 Frequency of Illness and per capita visits to outpatient Care facilities

In all the households visited during the survey, respondents were asked to state if any member of their households was sick during the four weeks preceding the survey, and if so whether medical care was sought. Overall, 17.5% of all individuals reported an illness during the recall period. Of these, 77% sought health care service.

During the four weeks recall period, 4.75million visits were made to providers of health care for treatment of illness. This gives an average utilization rate of 14.8 visits per 100 people and 84.5 visits per 100 sick people. Using these figures and assuming that the seasonal variation in the level of utilization was not marked, the annual utilization rate for the population was approximately 1.9 visits per person (Table 5.1).

Table 5.1: Total number of visits and utilization rates, Kenya, 2003.

Description		Number	%
People with no sickness reported		26,501,493	82.5
People with some sickness reported		5,623,812	17.5
TOTAL		32,125,305	100.0
Total number of visits made in 4 weeks recall period to all health care service providers		4,753,592	
Average number of Visits (in 4 weeks)	a) Per 100 people b) Per 100 sick people	14.8 84.5	
Average number of Visits (Utilization rate) per person per year*		1.92	
* The calculation of this rate was based on the formula: *Annual utilization rate= Number of visits made in 4 weeks/ Number of people in the sample (weighted) x 52/4*			
Estimates based on surveys have a margin of error because they are based on samples, rather than on the total population. The margin of error for population totals in this table is 6 to 8% of the total. For the utilization rate, the margin is 0.15 visits.			

5.1.1.1 Utilization of Outpatient services by province and Residence

In Nyanza province, the population was more likely to report being ill (25%) compared to any other province. Use of outpatient health care in Nyanza might be higher because the incidence of diseases is high including HIV.

The health care provider use rate range from 0.6 visits per capita in North Eastern to 2.9 in Nyanza province (Figure 5.1(a)). The low per capita outpatient visits for North Eastern province was not due to lower incidence of illness. Sick people in this area are half as likely to obtain care as in other areas, suggesting difficulties of the community in accessing health providers given its vastness, poor infrastructure development as well as the arid conditions and the sparse distribution of health facilities.

Figure 5.1(a): Annual Per capita Out Patient Visits
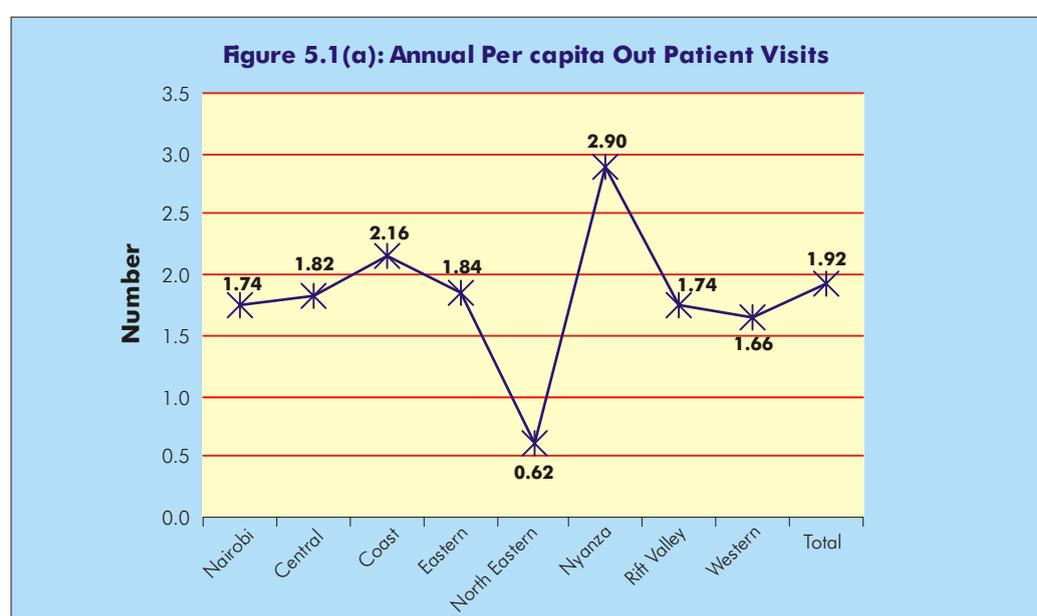
Individuals in urban households were more likely (19.5%) to report an illness than their rural counterparts (17%). The urban population when sick was also more likely to visit a provider (81%) compared to 76% of the sick rural individuals. Residents in urban areas tended to have a higher number of outpatient visits (2.2) per capita compared to their rural counterparts (1.8).[8]

Possible reasons for these differences include:

- Urban populations have readier access to health care because they need to travel shorter distances;
- Urban populations have greater financial resources, and so can afford higher levels of use.
- Urban and rural individuals of   similar wealth are equally likely to seek care,

- Urban populations have higher incidence of illness.

[8] $p < .05$

5.1.1.2 Utilization of Outpatient services by gender and age group

Females made 1.2 times as many outpatient visits per capita (2.1 visits per year) as males did (1.7).

Age was an important determinant of illness. The relationship between age and reported per capita visits is roughly U-shaped with children aged under 5 years and adults aged 65 years or older having higher per capita outpatient visits than other population groups (Figure 5.1(b)). For example, children younger than five years made nearly four visits per child per year and those aged 65 years or older made nearly 3 per capita outpatient visits annually. The use rates for outpatient care for the other age groups (5-64 years) lie between 1.3-2.6 visits per capita. The survey results showed that children aged less than 5 years were reported to be ill most frequently (28%) as well as those aged 65 years and over (32%).

Figure 5.1(b): Annual Per Capita Out patientVisits and Prevalence (%) of Illness
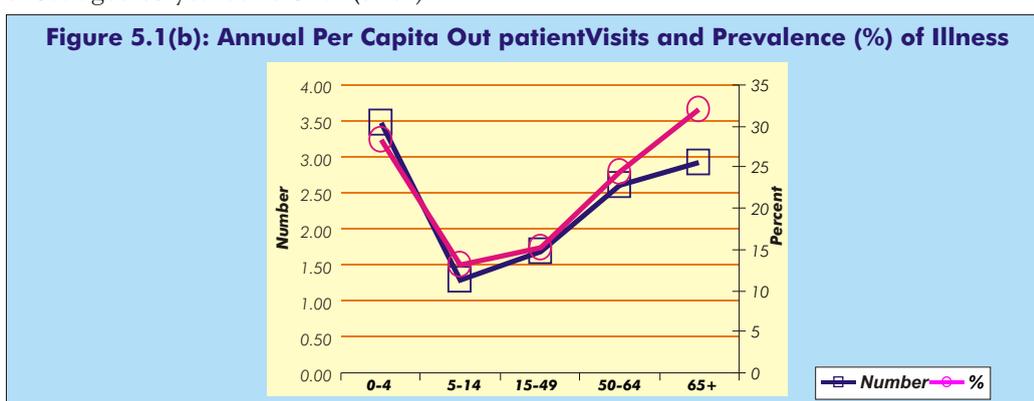
Statistical (Wald) tests revealed that:

- Those aged 0-4 used more dependable on other outpatient care more than any people for financial resources. groups other than the 65+;
- Those aged 5-14 used less outpatient care than any older group;
- Those aged 15-49 used less than the elderly groups and;
- Those aged 50-64 had the same level of use of outpatient care as the 65+ despite initial appearance to the contrary.

The possible explanations for the pattern on health care use are that:

- The very young and the elderly are more likely to be ill and;
- The very young and the elderly have more access than others, since both groups are more dependable on other people for financial resources.

Table 5.2: Annual outpatient visits per capita, percentage of population reporting illness in 4 weeks before the Survey and percent of ill persons who did not seek treatment by selected characteristics, KENYA, 2003.

	Polulation	Annual number of visits per capita	% of the population reporting illness in th past four weeks	Population reporting being ill (number)	% of those reporting being ill and not seeking treatment
Province					
Nairobi	2,563,297	1.74	15.4	394,707	9.4
Central	3,909,728	1.82	17.0	665,071	14.7
Coast	2,801,356	2.16	19.0	533,586	26.1
Eastern	5,103,110	1.84	16.1	823,178	11.3
North Eastern	1,187,767	0.62	12.8	152,187	63.4
Nyanza	4,804,078	2.90	25.3	1,217,804	30.4
Rift Valley	7,902,033	1.74	15.4	1,218,801	18.1
Western	3,853,936	1.66	16.1	618,477	36.4

Table 5.2: Annual outpatient visits per capita, percentage of population reporting illness in 4 weeks before the Survey and percent of ill persons who did not seek treatment by selected characteristics, KENYA, 2003. *(cont'd)*

Characteristic	Population	Annual Number of visits per capita	% of the population reporting illness in the past four weeks	Population reporting being ill (Number)	% of those reporting being ill and not seeking treatment
Total	32,125,305	1.92	17.5	5,623,812	22.8
Residence					
Urban	7,403,220	2.24	19.5	1,443,125	18.9
Rural	24,722,085	1.83	16.9	4,180,687	24.1
Total	32,125,305	1.92	17.5	5,623,812	22.8
Sex					
Male	15,842,396	1.74	16.1	2,547,623	23.9
Female	16,199,133	2.11	18.9	3,062,148	21.9
Not Stated	83,776	1.21	16.8	14,041	6.6
Total	32,125,305	1.92	17.5	5,623,812	22.8
Age in Years					
0-4	4,294,372	3.46	28.3	1,215,761	16.3
5-14	8,842,514	1.30	13.1	1,154,596	24.1
15-49	15,739,172	1.68	15.1	2,371,780	23.4
50-64	2,088,998	2.62	24.4	509,850	23.9
65+	1,093,717	2.92	31.9	349333	35.6
Total	32,058,772	1.92	17.5	5,601,318	22.8
Marital Status					
Never Married	19,613,271	1.76	16.0	3,132,289	20.4
Married	10,527,044	2.13	18.8	1,983,863	24.2
Divorced	217,792	3.17	26.8	58,350	16.6
Widowed	1,018,230	2.94	32.9	335,330	36.2
Separated	283,507	1.96	16.0	45,346	18.0
Missing	465,462	1.26	14.7	68,634	29.1
Total	32,125,305	1.92	17.5	5,623,812	22.8
Level of education					
None	10,432,294	2.51	23.5	2,446,611	23.7
Primary	15,981,547	1.59	14.5	2,319,545	22.7
Secondary	5,246,492	1.85	15.2	799,901	20.8
University/Post Secondary	310,025	1.42	10.9	33,730	11.7
Total	31,970,358	1.93	17.5	5,599,787	22.8
Employment Status					
Working	8,461,516	2.07	19.4	1,663,734	24.4
On leave/sick	127,083	2.68	33.7	59,856	20.1
Seeking work	1,082,240	1.19	11.0	119,642	17.6
Retired	295,476	2.65	22.0	66,979	13.5
Homemakers	3,915,473	2.16	18.0	719,710	21.5
Students	5,849,363	1.13	11.6	1,097,419	22.2
Other	11,659,156	2.23	21.1	1,018,689	23.9
Missing	734,999	1.17	21.8	85,972	42
Total	32,125,305	1.92	17.5	5,623,812	22.8

**Table 5.2: Annual outpatient visits per capita, percentage of population reporting illness in 4 weeks before the Survey and percent of ill persons who did not seek treatment by selected characteristics, KENYA, 2003.*(cont'd)*

Characteristic	Population	Annual Number of visits per capita	% of the population reporting illness in the past four weeks	Population reporting being ill (Number)	% of those reporting being ill and not seeking treatment
Rating of own Health					
Very good	7,325,973	1.54	13.6	997,568	20.4
Good	19,581,106	1.71	15.2	2,980,477	20.8
Satisfactory	3,694,097	2.83	26.5	980,053	24.8
Poor	1,211,352	4.83	51.4	622,648	32.7
Not Stated	312,778	1.97	13.8	43,066	25.7
Total	32,125,305	1.92	17.5	5,623,812	22.8
Presence of Chronic Condition					
Present	1,930,594	5.08	46.6	898,407	24.8
Not Present	30,194,711	1.72	15.7	4,725,405	22.4
Total	32,125,305	1.92	17.5	5,623,812	22.8
Religion					
Catholic	8,943,050	1.92	17.4	1,560,479	21.7
Protestant	18,502,735	2.05	18.1	3,339,838	20.9
Muslim	3,137,583	1.20	15.1	472,777	34.7
Traditionalist	491,388	1.40	10.9	53,487	16.8
Atheist	195,155	1.54	15.9	30,995	23.1
Other	775,104	2.15	19.6	151,692	41.5
Not Stated	80,290	1.79	18.1	14,543	10.3
Total	32,125,305	1.92	17.5	5,623,812	22.8
Insurance cover					
Insured	3,124,852	2.25	16.8	524,560	14.7
Not Insured	26,754,996	1.91	17.6	4,698,371	24
Not stated	2,245,457	.64	17.9	400,880	19.3
Total	32,125,305	1.92	17.5	5,623,812	22.8
Wealth Index Quintiles					
Poorest	6,969,988	1.72	17.1	1,194,136	33.1
Second	7,365,707	1.75	16.7	1,229,664	25.8
Middle	6,924,095	1.93	17.4	1,203,059	20.9
Fourth	5,680,150	2.07	17.9	1,018,502	16.0
Richest	5,185,365	2.27	18.9	978,452	15.6
Total	32,125,305	1.92	17.5	5,623,812	22.8
Expenditure Quintile					
Poor	6,423,481	1.77	14.9	956,098	28.3
Second Poor	6,413,815	1.71	16.9	1,086,995	26.3
Middle	6,404,094	1.85	17.2	1,103,404	21.8
Second Rich	6,267,582	1.98	19.0	1,188,237	22.1
Rich	6,616,332	2.30	19.5	289,078	17.2
Total	32,125,305	1.92	17.5	5,623,812	22.8

Those with insurance coverage had a higher use rate (2.3 visits per capita annually) than those without insurance (1.9). Moreover, the odds of non-use of health care among persons who are not insured is 63% higher relative to persons who are insured (Odd ratio = 1.63) suggesting that health insurance increases demand for health care, by reducing the cost associated with it.

There is a noticeable difference in the number of outpatient visits per capita reported by chronic health status with a high concentration among those with chronic illness - 5 visits per capita for those with chronic illness, as against 1.7 visits per capita among those not chronically ill.

5.1.1.3 Utilization of outpatient health care services by wealth index quintiles

The relationship of health care utilization to wealth index [9] showed that use of care increased with wealth index quintiles - higher socio economic status was associated with higher propensity to seek treatment (Figure 5.1c).

Figure 5.1(c): Annual Per Capita Out patient visits and Percent not seeking treatment
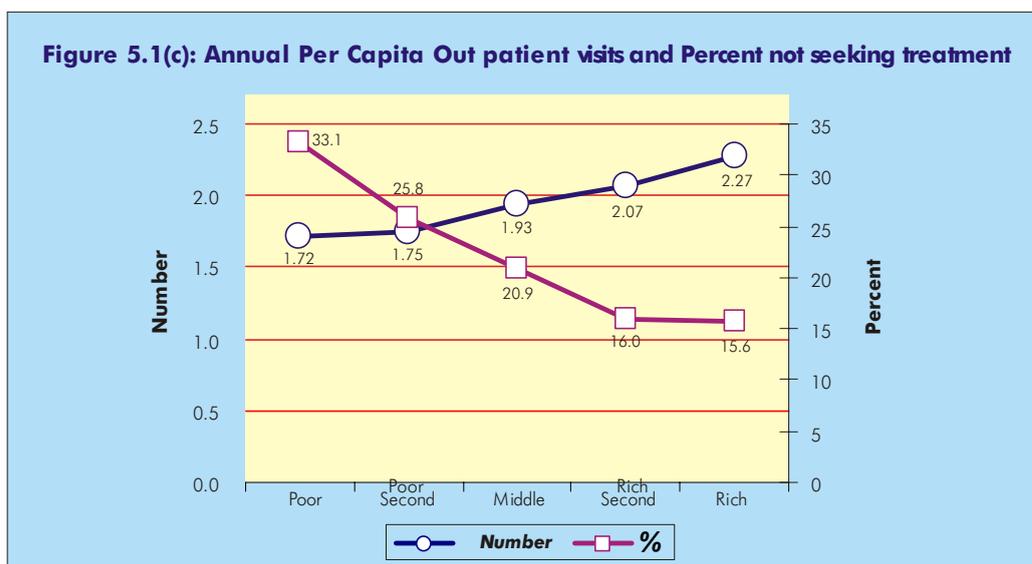
Those in poorest and second poorest quintiles used less care than those in richest and second richest quintiles annually. For example, persons in the lowest wealth index quintile made 1.7 visits per capita per year whereas those in the highest wealth index quintile made 2.3 visits per capita per year suggesting that inability to pay for the services may have contributed to underutilization by the former group. The analysis shows that while a third of all those in the lowest quintile who reported being ill did not seek health care, only about 16% of those in the highest quintile and were sick did not seek health care.

In other words, the sick individuals in the lowest quintile were twice as likely not to seek care as those in the highest quintile. This suggests that there may be financial barriers to access and that health care service is distributed inequitably across wealth quintiles. This is an interesting finding from a policy perspective as it is indicative of inaccessibility to health care for the poor.

[9] A World Bank wealth index was calculated based on various household amenities, convenience facilities and other socio-economic characteristics. The index categorized the households into five quintiles namely: Poorest; Second Poorest; Middle; Fourth and Richest. Construction of wealth indices was done using the principle component analysis statistical technique.

5.1.1.4 Utilization of outpatient health care services by rating of own health, marital status and education

Rating of own Health:

Use of outpatient health care appeared to increase as self-reported health status declined with a range from 1.5 visits per capita among those persons whose rating was very good to 4.8 visits per capita among those rating their status as poor. This is most naturally explained by the fact that people in good health have less need for health care and uses less of it. Self-reports of health status are to a large extent correlated with actual health status.

Survey results showed that the proportion of population that reported being ill and did not seek treatment increased with worsening self rating of health status. This finding gives support to the emerging picture in this report that those who are most in need of health-care may not necessarily be receiving it as a result of difficulties in paying for treatment or for prescribed medicines.

Marital Status:

Individuals who were never married used less outpatient health care than married, divorced or widowed persons. Possible explanation for the difference may be that the never married, on average, are younger than the married while the divorced and the widowed people are more likely to be elderly and, therefore, more likely to be ill. However, the results show that the divorced and widowed persons were not statistically different from one another as regards their use of outpatient care.

Education level:

Among people older than 16 years of age, education level was unrelated to healthcare utilization (Figure 5.1 (d)).

Figure 5.1(d): Annual out patient visits per capita by Education level, Kenya, 2003
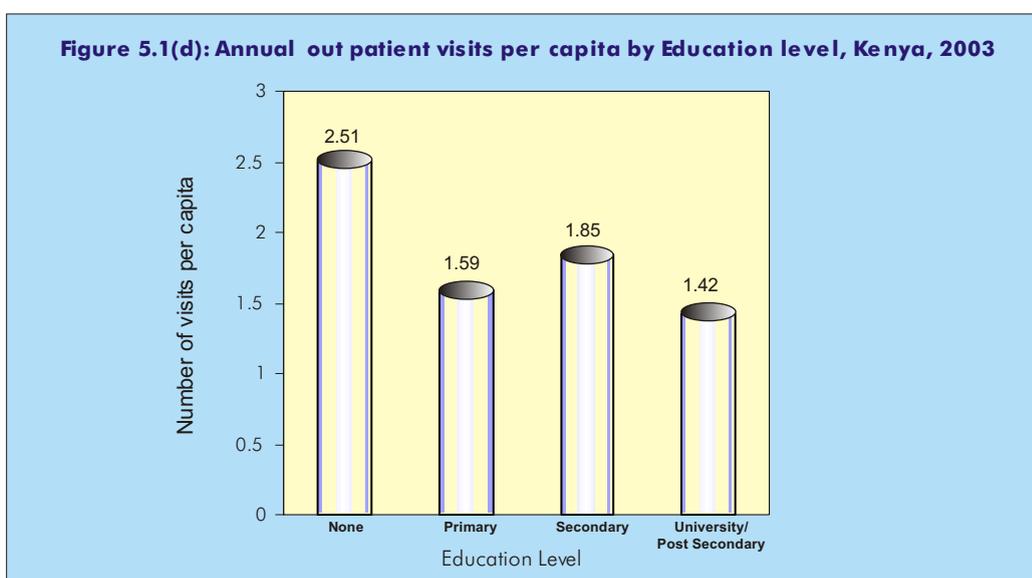
5.1.1.5 Utilization of outpatient services by religion and occupation

Christian denominations appear to have higher rates of use. For example, Protestants and Catholics made more outpatient visits per capita (2.0 and 1.9 respectively) than either Muslims (1.2 visits per capita) or members of traditional religions (1.4). This is entirely due to the geographic distribution of the religious groups.

Results show that students and those seeking work used less outpatient care than average, possibly because the former group is young and hence less likely to be ill, while the latter used less because they cannot afford care. Those on leave/sick leave and those retired appeared to use more outpatient health care than any other category.

5.1.2 Choice of health care provider

Persons in need of health care when sick have the choice of using either modern health care through health facilities and pharmacies or traditional healers or simply not seek health care at all.

Table 5.3 presents the percentage distribution of population that was reportedly sick in the four weeks preceding the survey and subsequently sought health care by various socioeconomic characteristics. Overall, there is a clear distinction in the roles of the various providers in health care provision. Government facilities were overwhelmingly preferred for outpatient care accounting for 50.7% of total visits. Private and mission health facilities accounted for 27% and 8% of the visits respectively while traditional healers attracted a negligible proportion (1%). Pharmacies/chemists and others accounted for the remainder.

Table 5.3: Percentage Distribution of Outpatient Visits by type of health care provider, Kenya, 2003

	Government Hospital	Private Hospital	Mission Hospital	Government Health Centre	Mission Health Centre	Government Dispensary	Mission Dispensary	Nursing Home	Private Clinic	Chemist/Pharmacy	Traditional Healers	Other (Faith Healers)	Total
PROVINCE													
Nairobi	22.0	18.5	4.4	6.6	2.2	4.2	6.1	0.5	20.8	12.2	1.1	1.4	100.0
Central	35.7	6.2	4.4	9.4	0.2	15.9	4.4	0.9	13.5	6.9	0.0	2.5	100.0
Coast	14.9	16.2	0.4	12.4	0.5	20.6	1.6	1.0	18.1	7.3	1.6	5.4	100.0
Eastern	19.5	7.7	2.1	13.5	1.3	22.9	4.1	0.4	17.5	5.6	0.5	4.9	100.0
North Eastern	49.6	35.7	0.0	0.3	0.0	1.7	0.0	0.0	4.2	8.5	0.0	0.0	100.0
Nyanza	26.2	6.5	2.5	15.8	0.8	13.9	1.5	1.0	15.9	12.6	2.2	1.1	100.0
Rift Valley	25.4	7.9	3.3	10.5	2.6	14.4	4.8	0.1	18.4	8.7	1.0	2.9	100.0
Western	14.3	4.0	3.0	14.2	1.3	4.5	0.9	0.1	24.4	24.6	2.8	5.9	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0
RESIDENCE													0.0
Urban	32.8	13.0	1.8	5.4	0.7	6.2	3.8	0.7	17.8	13.6	1.2	3.0	100.0
Rural	20.7	7.3	3.2	14.4	1.6	17.7	3.2	0.5	17.7	9.1	1.2	3.4	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0
SEX													0.0
Male	23.5	9.6	2.8	11.6	1.2	13.1	3.3	0.8	18.4	11.1	1.3	3.3	100.0
Female	24.0	8.2	2.9	12.3	1.4	15.9	3.5	0.3	17.3	9.8	1.1	3.3	100.0
Not Stated	88.5	4.1	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	0.0	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0
AGE IN YEARS													0.0
0-4	24.6	8.2	2.5	11.6	1.1	18.2	4.7	1.1	16.7	7.8	0.8	2.7	100.0
5-14	21.4	7.5	1.7	13.5	1.5	17.3	3.2	0.3	18.3	10.2	1.5	3.6	100.0
15-49	24.0	9.1	3.1	12.1	1.1	12.3	3.2	0.2	18.9	11.3	1.3	3.4	100.0
50-64	27.0	10.9	3.5	9.7	2.4	9.4	2.3	0.1	16.0	12.1	1.8	4.8	100.0
65+	23.6	8.5	6.0	10.7	1.9	17.7	1.4	2.2	12.7	13.1	0.4	1.8	100.0
Total	23.9	8.7	2.9	12.0	1.3	14.7	3.4	0.5	17.8	10.5	1.2	3.1	100.0

Table 5.3: Percentage Distribution of Outpatient Visits by type of health care provider, Kenya, 2003 (cont'd)

	Government Hospital	Private Hospital	Mission Hospital	Government Health Centre	Mission Health Centre	Government Dispensary	Mission Dispensary	Nursing Home	Private Clinic	Chemist/Pharmacy	Traditional Healers	Other (Faith Healers)	Total
MARITAL STATUS													
Never married	23.7	8.3	2.3	12.0	1.5	17.1	3.6	0.7	17.3	9.0	1.2	3.3	100.0
Married	24.6	9.3	3.7	11.9	1.1	11.6	3.1	0.1	18.3	11.4	1.3	3.6	100.0
Divorced	18.5	17.3	0.0	15.2	0.0	9.9	3.0	0.0	11.9	22.6	1.6	0.0	100.0
Widowed	21.9	9.0	3.0	12.7	1.9	8.2	2.4	1.7	17.4	17.5	2.0	2.3	100.0
Separated	25.4	10.4	13.9	5.3	0.0	2.4	0.8	0.0	32.9	5.6	2.0	1.3	100.0
Missing	24.2	8.6	0.0	10.4	0.0	27.9	7.2	0.0	14.8	4.6	0.0	2.3	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0
LEVEL OF EDUCATION													
None	24.6	9.4	2.9	12.7	1.6	17.2	3.8	0.7	15.2	8.4	0.9	2.6	100.0
Primary	21.4	7.6	2.5	12.7	1.1	14.2	3.4	0.4	19.1	12.2	1.7	3.7	100.0
Secondary	28.7	10.3	3.4	8.4	0.9	9.4	2.3	0.4	20.1	10.8	0.8	4.5	100.0
University	24.5	18.4	3.7	5.5	0.0	0.8	0.0	0.0	33.6	13.5	0.0	0.0	100.0
Total	23.9	8.8	2.9	12.0	1.3	14.7	3.4	0.5	17.8	10.3	1.2	3.2	100.0
EMPLOYMENT STATUS													
Working	25.3	9.7	3.2	10.5	1.3	10.6	4.0	0.5	17.5	12.7	1.5	3.2	100.0
On leave/sick	40.7	9.1	7.1	5.1	0.0	2.5	2.3	0.0	16.4	12.6	0.0	4.2	100.0
Seeking work	27.5	13.1	1.5	14.5	2.5	7.4	1.6	0.0	12.6	16.1	0.7	2.5	100.0
Retired	31.4	14.9	5.1	0.0	2.5	5.1	0.0	0.0	19.9	16.2	0.0	4.9	100.0
Homemakers	22.1	8.8	4.9	15.7	1.1	16.2	1.8	0.0	17.1	6.9	1.2	4.2	100.0
Students	21.6	4.7	1.2	12.8	1.1	19.4	3.3	0.2	20.2	10.0	0.7	4.8	100.0
Other	23.7	9.0	2.4	11.9	1.3	16.8	3.6	0.8	17.8	8.9	1.1	2.7	100.0
Missing	16.5	6.7	0.0	12.2	3.3	7.0	3.3	2.6	13.0	24.5	3.5	4.4	100.0
Total	23.9	8.8	2.9	12.0	1.3	14.7	3.4	0.5	17.8	10.3	1.2	3.2	100.0

Table 5.3: Percentage Distribution of Outpatient Visits by type of health care provider, Kenya, 2003 (cont'd)

	Government Hospital	Private Hospital	Mission Hospital	Government Health Centre	Mission Health Centre	Government Dispensary	Mission Dispensary	Nursing Home	Private Clinic	Chemist/Pharmacy	Traditional Healers	Other (Faith Healers)	Total
RATING OF OWN HEALTH													
Very good	25.5	7.6	3.0	10.7	0.4	13.5	3.6	0.4	20.4	9.5	1.5	3.9	100.0
Good	21.9	9.0	2.6	12.8	1.6	16.7	3.7	0.4	17.3	9.9	0.7	3.4	100.0
Satisfactory	25.2	8.6	4.0	11.0	1.1	12.9	2.5.	0.9	17.8	11.8	1.9	2.3	100.0
Poor	31.3	11.5	1.3	12.3	2.2	7.1	2.8	0.1	13.4	12.7	2.4	2.9	100.0
Not stated	20.4	5.5	7.3	3.0	0.0	13.6	0.0	7.6	33.2	5.7	1.0	2.7	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0
PRESENCE OF CHRONIC CONDITION													
Present	33.9	11.3	2.6	10.5	2.3	8.6	1.6	0.2	13.0	12.2	2.1	1.7	100.0
Not Present	22.2	8.4	2.9	12.2	1.2	15.7	3.7	0.6	18.5	10.1	1.1	3.4	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0
DISTANCE TO HEALTH FACILITY													
0 KM	14.3	11.6	2.3	9.3	0.3	8.3	1.3	0.1	23.3	14.9	3.3	11.0	100.0
>0 & <= .3 km	17.6	9.0	1.6	10.3	0.9	15.7	2.9	0.5	22.0	13.1	1.8	4.6	100.0
>.3 & <=.77km	24.9	8.0	2.3	15.2	1.7	17.6	3.6	0.6	15.6	8.4	0.3	1.8	100.0
>.77 & <=1.5km	31.9	8.6	7.2	14.4	1.0	13.3	4.5	0.7	10.6	6.4	0.4	1.0	100.0
>1.55km	46.8	10.0	6.2	5.7	2.9	3.1	5.0	0.5	10.3	6.6	1.4	1.5	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0
RELIGION													
Catholic	27.2	7.5	3.1	9.5	0.6	16.8	4.2	0.8	15.0	9.2	1.8	4.3	100.0
Protestant	23.0	8.8	2.9	13.5	1.4	13.7	2.9	0.4	19.0	10.8	0.9	2.7	100.0
Muslim	25.1	17.4	1.4	10.1	0.4	9.9	3.3	1.5	16.1	10.5	0.5	3.8	100.0
Traditionalist	19.6	5.4	3.8	10.9	9.6	15.4	12.3	0.0	4.2	11.5	0.7	6.6	100.0
Atheist	2.0	10.1	0.0	8.0	0.0	48.6	0.0	0.0	20.5	0.0	0.0	10.8	100.0
Other	11.4	6.8	3.0	7.3	7.2	17.0	2.1	0.0	27.0	14.6	3.6	0.0	100.0
Not Stated	11.4	0.0	0.0	30.6	0.0	15.3	0.0	0.0	42.7	0.0	0.0	0.0	100.0
Total	23.91	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0

Table 5.3: Percentage Distribution of Outpatient Visits by type of health care provider, Kenya, 2003 (cont'd)

	Government Hospital	Private Hospital	Mission Hospital	Government Health Centre	Mission Health Centre	Government Dispensary	Mission Dispensary	Nursing Home	Private Clinic	Chemist/Pharmacy	Traditional Healers	Other (Faith Healers)	Total
INSURANCE COVER													
Insured	24.6	10.7	4.6	9.1	0.7	11.7	4.1	1.0	24.9	6.5	0.2	1.9	100.0
Not insured	24.6	7.8	2.6	12.4	1.5	15.1	3.3	0.4	16.2	11.2	1.5	3.4	100.0
Not stated	11.8	21.0	3.2	11.4	0.9	12.7	3.2	1.5	24.0	7.4	0.0	2.9	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0
WEALTH INDEX QUINTILES													
Poor	16.4	6.5	3.1	17.4	3.2	17.4	2.1	0.5	17.1	9.6	2.3	4.4	100.0
Second poor	15.6	4.9	3.4	15.5	1.0	22.8	4.6	0.8	16.1	10.0	1.7	3.6	100.0
Middle rich	27.6	10.7	2.5	12.7	0.6	16.7	1.8	0.2	14.7	8.6	0.4	3.5	100.0
Second rich	30.2	6.5	2.7	8.0	1.1	8.9	3.8	0.6	21.6	12.5	1.2	2.9	100.0
Rich	29.3	15.6	2.5	6.6	1.1	6.9	4.4	0.7	19.3	11.1	0.4	2.1	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0
EXPENDITURE QUINTILE													
Poor	15.3	6.3	3.4	17.1	1.4	20.5	3.1	0.2	15.8	8.4	1.3	6.6	100.0
Second poor	19.8	8.9	2.4	15.1	0.6	19.5	3.7	1.2	16.9	9.0	0.3	2.6	100.0
Middle rich	23.6	5.1	2.1	13.2	1.8	14.8	4.6	0.0	18.8	10.3	2.5	3.2	100.0
Second rich	27.5	13.8	2.8	8.7	1.3	13.8	2.8	0.2	15.3	11.4	1.1	1.3	100.0
Rich	30.5	9.5	3.5	7.1	1.4	7.0	2.8	1.1	20.9	12.0	0.7	3.5	100.0
Total	23.9	8.9	2.8	12.0	1.3	14.6	3.4	0.5	17.8	10.4	1.2	3.2	100.0

Choice of health care provider by Province

There were differentials in use of health care providers by province. In Western province, 33% of all outpatient visits were made to public health facilities compared to 61% in Central province. Private and public health providers accounted for 41% and 56% of all outpatient visits in Nyanza respectively. In Nairobi most of the visits were made to private providers - 65% -Figure 5.2(a)

Figure 5.2(a): Percentage of outpatient visits by type of health provider.
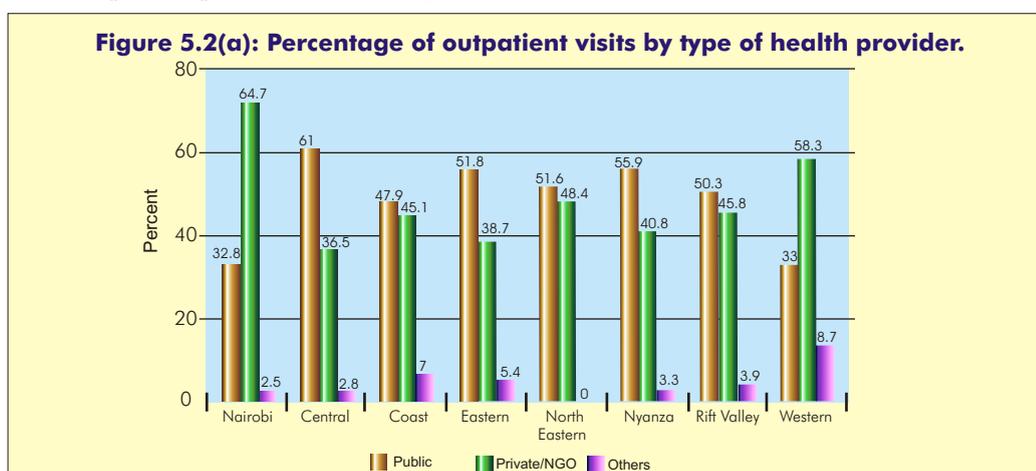
Urban residents seeking treatment used all types of health providers slightly more than their rural counterparts except public health facilities (Figure 5.2(b)). This means that public health facilities were more preferred by rural population than the urban population. Apart from cost considerations, public health facilities are generally well spread in both urban and rural areas and hence accessible.

Figure 5.2(b): Choice of health provider by residence
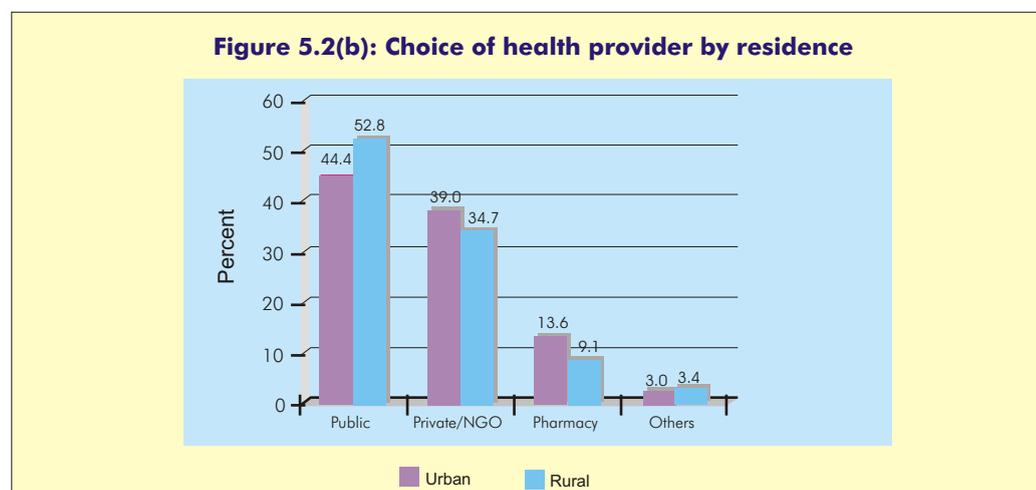
Table 5.3 shows that 51% and 43% of all outpatient visits by individuals in the poorest and richest quintiles respectively were to public health providers, thus, indicating the predominant role played by the public health providers in the provision of outpatient health care services in Kenya, regardless of wealth index levels.

Patients in all wealth quintiles were equally likely to use private health providers. *This finding suggests an equity issue, because care from the private health providers is likely to impose a greater financial burden on the poor than on the rich.*

Insurance coverage is not statistically significantly related to choice of government vs. private care.

5.1.3   Annual Out-of-Pocket expenditures per capita

Table 5.4 presents the out-of-pocket expenditures per capita in the Kenyan population. Overall, the cost per capita of outpatient visits was KSh 508.[10] However, there were large differences in health care spending across the provinces. In Nairobi, the expenditure per capita was KSh 1,436 annually in comparison to KSh 255 in Western province (about 6 times).

In urban areas, the annual expenditure per capita for outpatient visits was KSh 912 compared with KSh 387 for the rural areas. This means that urban individuals spent about 2.4 times as much annually on outpatient health care compared with their rural counterparts. Overall, given that public health facilities charge minimal fees for services whereas private facilities rely on user fees to cover most of their costs, the choice of health care provider would, no doubt, reflect impact on households' health expenditure.

Table 5.4: Per capita out-of-pocket expenditures on outpatient visits, KENYA, 2003

Characteristic		Number	Ksh
Province	Nairobi	2,563,297	1,436.02
	Central	3,909,728	517.15
	Coast	2,801,356	406.37
	Eastern	5,103,110	307.50
	North Eastern	1,187,767	714.77
	Nyanza	4,804,078	537.42
	Rift Valley	7,902,033	442.29
	Western	3,853,936	255.23
Residence	Urban	7,403,220	911.79
	Rural	24,722,085	387.09
Sex	Male	15,842,396	567.03
	Female	16,199,133	451.82
	Not Stated	83,776	210.69
Age in Years	0-4	4,294,372	353.14
	5-14	8,842,514	310.85
	15-49	15,739,172	553.01
	50-64	2,088,998	1,031.96
	65+	1,093,717	973.77
Marital Status	Never Married	19,613,271	390.42
	Married	10,527,044	715.97
	Divorced	217,7921	251.46
	Widowed	1,018,230	629.51
	Separated	283,507	430.38
	Missing	465,462	192.80
Level of education	None	10,432,294	468.62
	Primary	15,981,547	374.85
	Secondary	5,246,492	865.74
	University	310,025	2,748.82

[10] The 95% confidence interval for this estimate is KSh 380 to 640. impact on households' health expenditures.

Characteristic		Number	Ksh
Employment Status	Working	8,461,516	779.50
	On leave/sick	127,083	679.08
	Seeking work	1,082,240	341.27
	Retired	295,476 1,	349.40
	Homemakers	3,915,473	468.15
	Students	5,849,363	358.99
	Other	11,659,156	391.50
	Missing	734,999	506.58
Rating of own Health	Very good	7,325,973	317.74
	Good	19,581,106	439.24
	Satisfactory	3,694,097	760.27
	Poor	1,211,352	2,067.07
	Not Stated	312,778	251.89
Presence of Chronic Condition	Present	1,930,594	2,134.77
	Not Present	30,194,711	403.99
Religion	Catholic	8,943,050	636.38
	Protestant	18,502,735	457.31
	Muslim	3,137,583	532.90
	Traditionalist	491,388	217.56
	Atheist	195,155	109.18
	Other	775,104	433.76
Insurance cover	Not Stated	80,290	384.08
	Insured	3,124,852	739.63
	Not Insured	26,754,996	497.57
	Not stated	2,245,457	310.00
Wealth Index Quintiles	Poor	6,969,988	333.49
	Second Poor	7,365,707	302.91
	Middle	6,924,095	334.56
	Second Rich	5,680,150	536.70
Expenditure Quintile	Rich	5,185,365	1,234.08
	Poor	6,426,564	260.73
	Second Poor	6,426,657	272.15
	Middle	6,424,581	381.32
	Second Rich	6,422,984	442.65
	Rich	6,424,519	1,183.32
	Total	**32,125,305**	**508.01**

5.1.3.1 Health Care Expenditure by Age

Analysis of expenditure per capita on outpatient health care by age group shows that health care spending tended to increase with age, although children under five years of age were, in general, high users of health care services given that they made 3.5 per capita outpatient visits. The high spending among individuals in the older age group may be due to frequency and severity of illnesses they experience (Figure 5.3).

Figure 5.3: Out patient costs and visits per capita by Age group
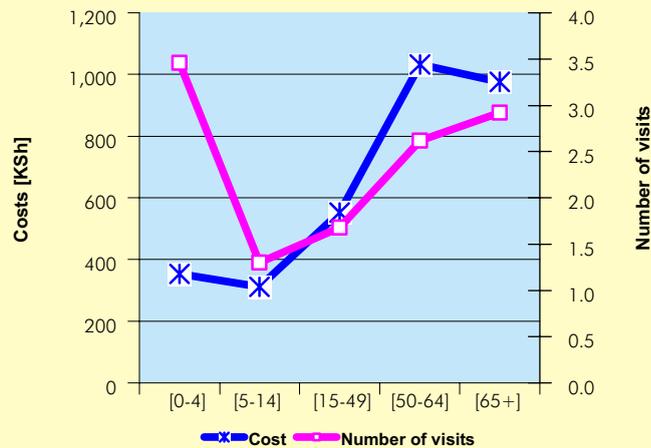
5.1.3.2 Expenditure by Education

Per capita expenditure for outpatient visits is illustrated in Figure 5.4. There appears to be some relationship of health expenditure by education level. Those individuals with no education tended to spend less compared to those with university/post secondary education. This perhaps is due to the fact that persons with higher levels of education are more likely to be employed and hence would tend to spend more by seeking formal treatment for their health problems while persons with lower levels of education are more likely to be employed and hence would tend to spend more by seeking formal treatment for their health problems while persons with lower levels of education would seem more likely to rely on drugs from local outlets for self-treatment.

Figure 5.4: Annual Per Capita Expenditure on Out Patient Visits by Education, KENYA, 2003
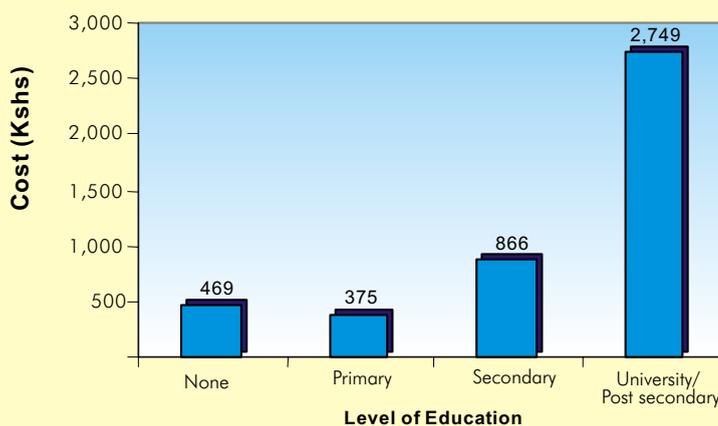
5.1.3.3 Expenditure by Wealth Index Quintiles

The pattern of outpatient expenditure across the wealth index quintiles can be seen in Figure 5.5. An important finding of the analysis is the disparity that exists in per capita expenditure on outpatient visits. Individuals in richest quintile tended to spend more on outpatient health care annually than those in poorer quintiles.

Individuals in the richest quintile spent twice as much as individuals in the second richest quintile and almost four times that of persons in the poorest quintile. The poor pay less per capita for outpatient services because they select lower-priced service providers, but make about the same number of visits.

Figure 5.5: Annual per capita expenditure on out patient visits by Wealth Index Quintile

	Poor	Second poor	Middle	Second rich	Rich
Expenditure	333	303	335	537	1,234
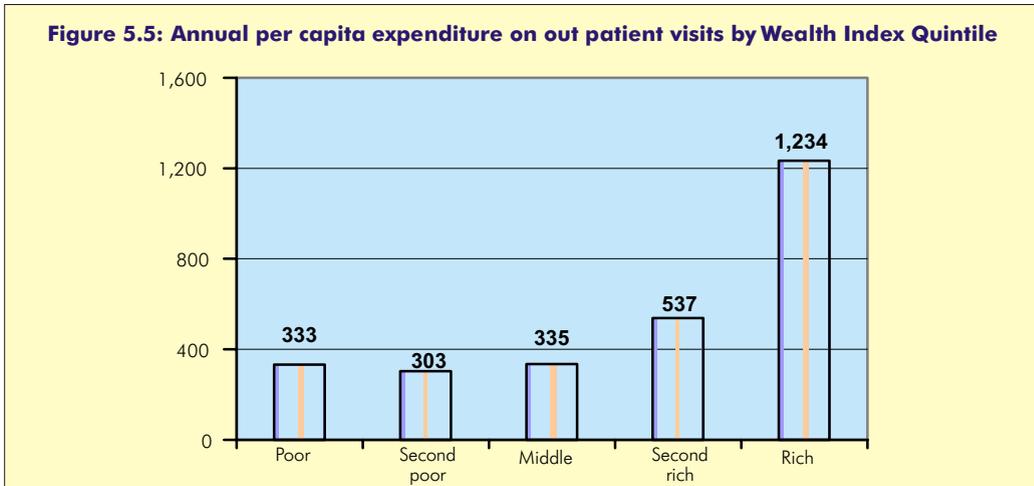
5.1.4 Leading causes for seeking outpatient care

Among the different types of diseases reported by respondents, the most prevalent illness is malaria which accounted for 43% of total responses as shown in Figure 5.6. Diseases of the respiratory system, diarrhoea, skin diseases, diabetes, intestinal worms follow in that order. Combined, the five leading conditions are responsible for 69% of total outpatient visits reported. Kenya's diverse climate and environmental conditions support wide variations in the epidemiology of disease transmission.

Figure 5.6: Leading causes of out patient visits

Cause	Percent
Malaria	43.2
Diseases of Respiratory System	13.3
Diarrhoea	6.2
Skin Diseases	3.3
Intestinal Worms	3.0
Diabetes	3.0
Eye Infections	1.8
Tuberculosis	1.0
HIV/AIDs	0.1
STDs	0.1
All others	25.0
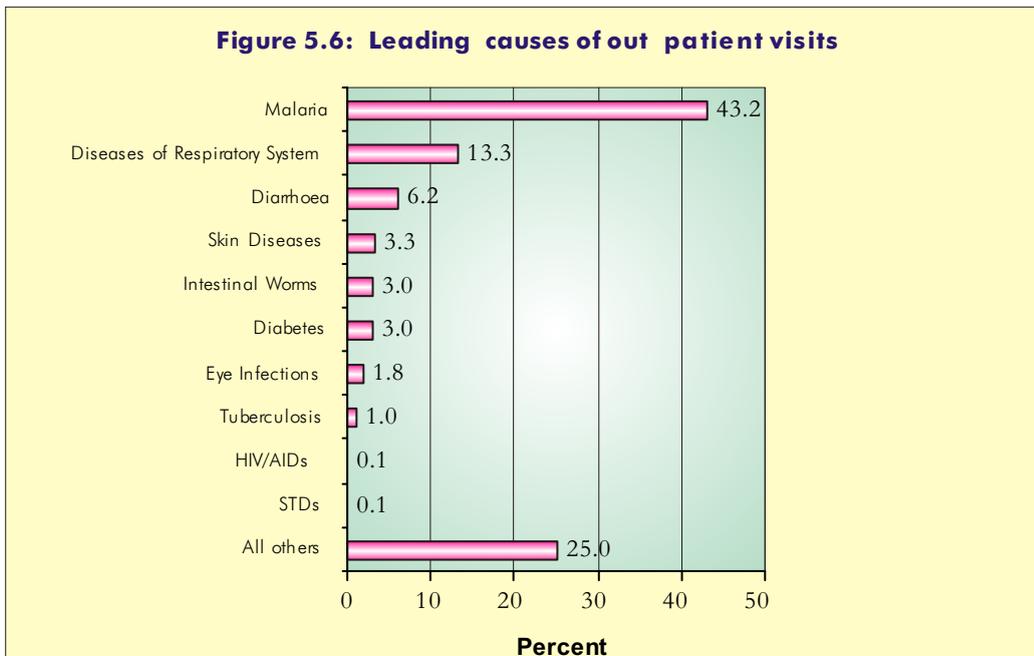
Diarrhoea and diseases of the respiratory system were reported with higher frequency among children under age five years compared to other age groups (Figure 5.7).

Figure 5.7: Percent Distribution of population seeking out patient health care by Age group and Selected Diseases
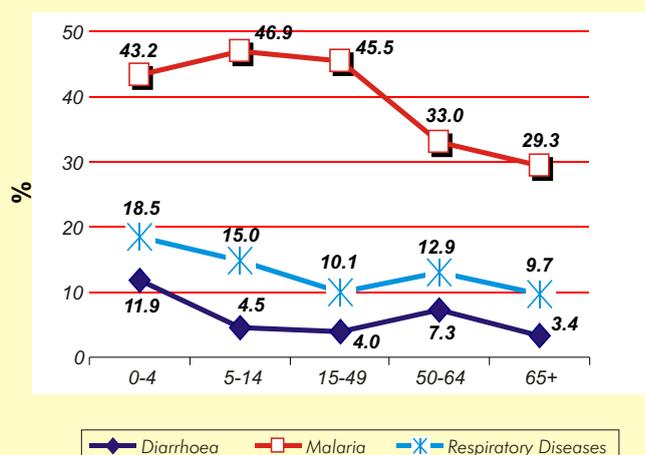
Children under five years of age were among the population reporting high prevalence of malaria. This is collaborated by studies in Kenya, which point out that less than 20% of children under five sleep under treated mosquito nets[11] and hence likely to have malaria attacks.

On the whole, although the pattern of diseases revealed by the survey is generally consistent with the epidemiological profile that exits in the country, these figures need to be interpreted with care because they are self- reported. Also because of the stigma that is attached to certain diseases linked to HIV, some conditions are likely to be under reported.

5.1.5 Reasons for those ill not seeking health care

Reasons were obtained for all those household members who were reportedly ill in the four weeks preceding the survey and did not visited or consulted a health provider, including pharmacy/chemist and traditional healer. Figure 5.8 graphically illustrates the flow from reporting illness to seeking treatment. Of those ill during the recall period, 77 percent received treatment. The remaining 23 percent did not seek treatment for various reasons that are discussed in this section.

Figure 5.8: Population Reporting Illness and Treatment, KENYA, 2003
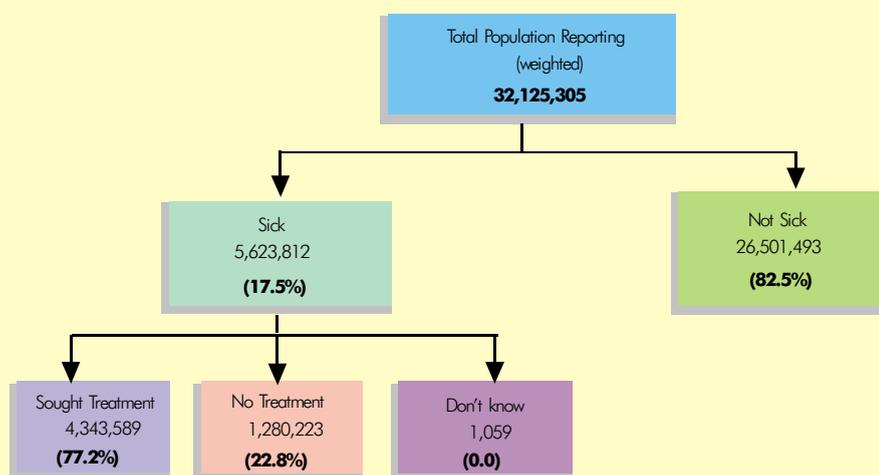
[11] Central Bureau of Statistics, Multiple Indicator Cluster Survey, 2000.

It is shown in Table 5.5 that cost was a major hindrance to seeking treatment (44%). Other than cost, reasons for not seeking outpatient treatment varied. *"Long distance to health provider"* and *"illness was not serious"* were cited by 18% and 10% of the persons affected respectively.

Table 5.5: Percentage of persons reporting being ill 4 weeks prior to the survey and did not seek treatment by reason, KENYA, 2003

Reason	%*
Lack of Money/High cost of care	43.6
Self Medication	41.2
Long Distance to Provider	18.1
Considered illness not serious	9.5
Poor quality service	1.9
Religious or Cultural Reasons	1.3
Fear of discovering serious illness	1.3
Other Reasons	3.3

* Percentages do not add up to 100 because multiple responses were allowed.

5.1.6 Reasons for avoiding nearest health provider (All visits)

All persons stating that they sought care were further asked if they had visited providers that were nearest to where they lived. All those who did not answer in affirmative were asked to state the main reasons for bypassing such providers. The results are presented in Table 5.6 and illustrated graphically in Figure 5.8. The leading response was due to "expensive services 28%", while "medicine not available" accounted for 16%.

Table 5.6: Distribution of the reasons for Avoiding the nearest provider

Reason	%
Unfriendly staff	1.3
Long waiting time	2.6
Medicine not available	15.5
Staff not qualified	11.5
Expensive Services	28.2
Dirty Facility	1.3
Would Have Paid	5.6
No privacy	1.8
Referred	11.9
Other	20.3
TOTAL	**100.0**

Figure 5.8: Percentage distribution of Reasons for avoiding the nearest provider, KENYA, 2003

Reason	%
Expensive Services	28.2
Medicine not available	15.5
Referred	11.9
Staff not qualified	11.5
Would have paid	5.6
Long waiting time	2.6
No Privacy	1.8
Dirty facility	1.3
Unfriendly staff	1.3
Other	20.3
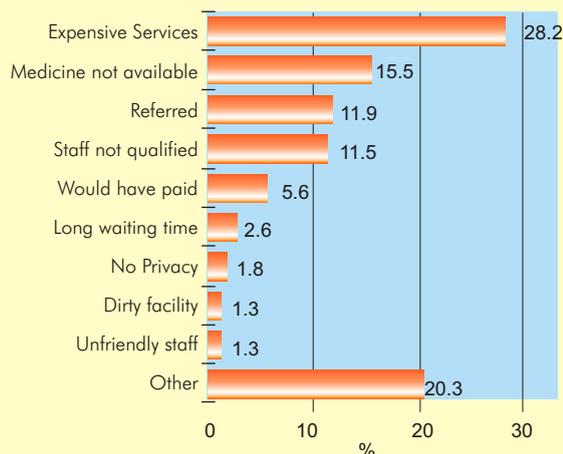
5.1.7 Reasons for avoiding nearest health provider by ownership

Table 5.7 shows the reasons for avoiding nearest health provider by those who were sick and sought treatment. That "services were expensive" was the reason cited by 42% and 23% of the respondents for avoiding private and public health facilities respectively. Some 27% of the respondents stated "*medicine was not available*" in public health facilities.

Table 5.7: Percent * distribution of respondents by reason for avoiding nearest health facility and ownership.

Reason	Ownership of Nearest Facility					
	Public	Private	Mission	NGO	Not stated	All Facilities
Expensive Services	22.7	42.1	33.9	36.5	30.3	34.9
Medicine not available	26.7	19.8	33.9	11.2	19.2	23.2
Referred	15.0	7.8	11.3	10.9	27.1	10.5
Long waiting time	11.2	7.0	9.2	2.6	9.6	8.7
Would have paid	3.0	6.6	11.8	1.8	0.0	5.8
Unfriendly staff	6.8	3.9	9.3	2.1	0.0	5.5
Dirty Facility	1.8	3.8	1.7	0.0	0.0	2.9
No privacy	3.2	1.8	0.7	0.0	0.0	2.1
Other	18.6	21.8	18.3	11.4	6.3	20.1

* The percentages do not add up to 100 because multiple reasons were allowed

5.1.8 Reasons for choosing provider

For all household members who had reported being ill in the four week prior to the survey and had sought health care, information was gathered as to the reasons why they had chosen to visit the specific health provider (Table 5.8). That the facility was "less costly" was the main reason given (28% of the responses). Close proximity to residence was the second most important factor accounting for nearly a fifth of total responses. Relatively few responses cited amenities such as cleanliness (1.5%) as reasons for choosing a health provider.

Table 5.8: Percent distribution of responses by reason for choice of health provider, KENYA, 2003

Reason	%
Less costly	28.1
Close to home	22.1
Staff are qualified	11.7
Medicine available	9.7
Was referred	4.5
Felt not seriously ill	3.3
Knew someone in the facility	2.0
Good staff attitude	1.9
Employer/Insurance requirements	1.8
More Privacy	1.8
Less waiting time	1.5
Cleaner facility	1.5
Do not have to pay	1.4
Staff give good advice	1.4
Other	7.3
Total	**100.0**

5.1.9 Distribution of expenditures on outpatient care by component.

Expenditures by component of health care are presented in Table 5.9 and illustrated in Figure 5.9. These expenditures covered registration, drugs (including purchases outside health facilities), consultation fees, diagnosis (e.g. X-ray, laboratory, etc), medical check up and others. Where the respondents could not provide breakdown of the costs, an overall figure on expenditure was obtained. However, the analysis presented here covers only cases where expenditures for the components of health care were provided.

The results show that 69 percent of total health expenditures were used to meet the cost of drugs, while diagnostic costs accounted for about 6%.

Table 5.9: Percent distribution of expenditures on outpatient care by component

Component	%
Drugs	69.4
Registration	13.2
Diagnosis	5.8
Consultation	4.9
Checkups	3.9
Other	2.8
Total	**100.0**

Figure 5.9: Percent distribution of expenditures on out patient care by component
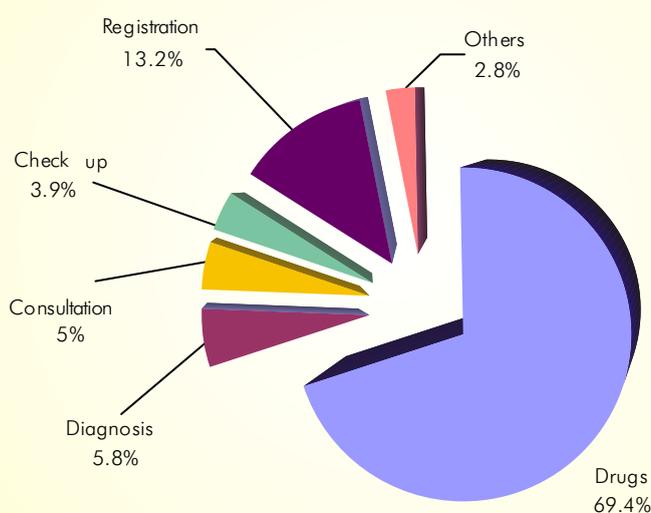
5.1.10 Out-of-pocket expenditure as percentage of Household expenditure

Of concern is the extent to which out-of-pocket costs represent a barrier to obtaining health care. Thus, in order to assess the health care expenditure burden placed on the households, the proportions of outpatient health care expenditures were computed against the total household spending. Overall, 3.1% of total household spending was on outpatient health care (Table 5.10). Out-of-pocket health care expenditures are clearly regressive; that is, they pose a heavier burden on the poorest population. This finding is particularly notable: those in the poorest wealth index quintile spent 4% of their total expenditure on outpatient health care compared to 2% of those in the richest quintile.

Table 5.10: Out-of-pocket expenditure on outpatient care as percentage of total household expenditure

Characteristic		Number	%
PROVINCE	Nairobi	712,164	1.5
	Central	1,059,206	2.4
	Coast	690,219	1.9
	Eastern	1,122,572	4.1
	North Eastern	192,454	5.0
	Nyanza	1,126,768	4.5
	Rift Valley	1,852,636	3.2
	Western	783,802	2.3
Residence	Urban	2,132,044	1.8
	Rural	5,407,777	3.6
Sex	Male	5,372,826	3.1
	Female	2,155,071	3.1
	Not Stated	11,924	1.6
Age in Years	0-4	5,743	0.3
	5-14	15,960	0.2
	15-49	5,222,536	2.8
	50-64	1,404,541	3.8
	65+	851,620	3.9
Marital Status	Never Married	762,194	1.4
	Married	5,487,428	3.3
	Divorced	150,583	3.3
	Widowed	891,096	3.6
	Separated	175,451	1.5
	Missing	73,068 0.9	
Level of education	None	1,552,415	4.2
	Primary	3,596,968	3.1
	Secondary	2,155,127	2.4
	University/Post secondary	174,318	1.3
Employment Status	Working	5,355,203	2.8
	On leave/sick	47,688	3.4
	Seeking work	129,243	3.0
	Retired	239,787	4.5
	Homemakers	849,551	4.1
	Students	39,459	2.0
	Other	760,465	3.5
	Missing	118,425	5.2
Rating of own Health	Very good	1,774,506	2.2
	Good	4,137,290	2.8
	Satisfactory	1,063,264	4.8
	Poor	508,074	5.1
	Not Stated	56,687	3.9
Presence of Chronic Condition	Present	866,619	5.4
	Not Present	6,673,202	2.8
Religion	Catholic	2,226,990	2.8
	Protestant	4,246,897	3.4
	Muslim	636,081	2.8
	Traditionalist	159,681	3.0
	Atheist	63,610	0.7
	Other	187,006	2.1
Insurance cover	Not Stated	19,555	9.7
	Insured	988,305	2.4
	Not Insured	6,226,137	3.3
Wealth Index Quintiles	Not stated	325,379	2.1
	Poorest	1,507,118	3.9
	Second	1,507,418	3.6
	Middle	1,508,022	3.5
	Fourth	1,509,158	2.6
	Richest	1,508,106	1.9
Expenditure quintile	Poor	1,094,525	7.6
	Second Poor	1,218,544	3.4
	Middle	1,360,181	3.0
	Second Rich	1,611,728	2.3
	Rich	2,254,843	1.4
	Total	**7,539,821**	**3.1**

Rural households spend a higher percentage of their total spending (3.6%) on outpatient health care than their urban counterparts (1.8%). Income differences account for all of the variation between urban and rural households.

5.1.11 Sources of funds for payment of out patient healthcare

Information was sought concerning the sources of funds for payment of outpatient health care services. The results indicate that *"had own cash"* was the most frequently mentioned source (84%) by individuals who paid for health care while *"assistance was sought from friends, family members and relatives"* was reported in 8 percent of the responses. That *"household assets were sold"* was the response in about 3 percent of total responses (Table 5.11). It should, however, be noted that the results show the relative frequency of each of the sources and should not be interpreted as a percent distribution of expenditures by source of funds.

Table 5.11: Percent of patients who used each source of funds for outpatient care

Source	%
Own cash	84.0
Assisted	7.8
Sold Household Assets	2.5
Borrowed money	2.5
Credit	2.3
Private Health Insurance	0.3
Reimbursed by employer	0.2
Waived/ exempted	0.2
Community Health Insurance	0.1
Harambee	0.1
Total	**100**

Items sum to more than 100% because some respondents mentioned more than one source.

5.2 Inpatient health care Analysis

This section examines the utilization of inpatient health care services and factors that determine use including socio-economic variables such as age, sex, education, wealth index and cost of care.

As seen in Figure 5.10(a), 2.0% of total population reported that they were sick enough to require admission. However, 1.5% of total population were actually admitted or 75 % of those requiring admission.

Of all responses stating the reasons for not getting admitted, 50% were on account of high cost/lacked money. Distance accounted for 10%. Others were fear of discovering serious illness (9% of the responses); poor service (4%) while the remainder accounted for 27%.

Figure 5:10(a): Admission status
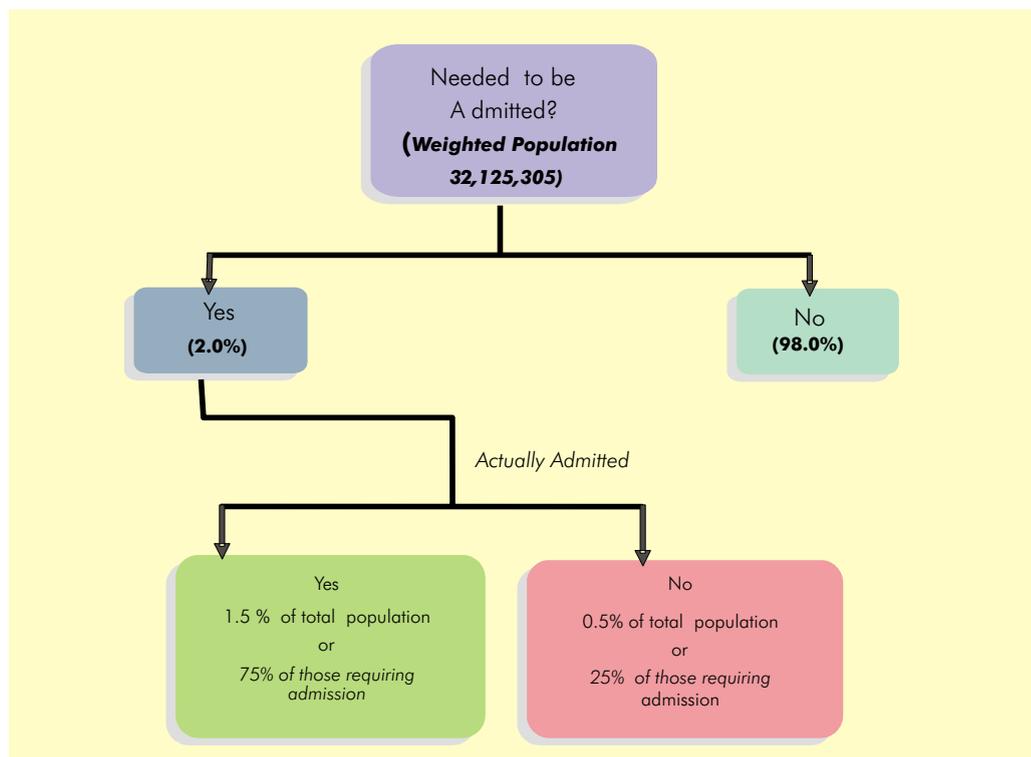
5.2.1 Average annual number of admissions to inpatient health care facilities

Table 5.12 shows the hospitalisation rates (Number of admissions divided by population x 1,000) by various characteristics. Overall, 15 admissions per 1000 population were reported.[12] However, differences in hospitalisation rates were noted and ranged from 3 admissions per 1,000 population in North Eastern province to 23 in Nyanza province. While some of the differences might reflect access problems, other factors influencing hospitalisation rates include age composition of the population, repeated admissions, financial considerations and morbidity pattern including AIDS.

The population in urban areas had a hospitalisation rate of 20 admissions per 1,000 population per year compared to 14 for the rural population. In other words, the hospitalisation rate in urban areas was one to two times that of rural areas. Urban residency is significantly associated with modern health institutions both private and public that offer better access to services for urban dwellers.

[12] The 95 percent confidence interval is 13 to 18 admissions per 1,000 population

Table 5.12: Average annual number of admissions per 1,000 population to health facilities by selected characteristics, KENYA, 2003

Characteristics	Number of Admissions per 1,000 Population	Characteristics	Number of Admissions per 1,000 Population
PROVINCE		Rating of own Health	
Nairobi	12.24	Very good	13.33
Central	16.29	Good	11.87
Coast	16.38	Satisfactory	20.9
Eastern	6.37	Poor	62.22
North Eastern	2.7	Not Stated	5.14
Nyanza	22.66		
Rift Valley	17.43	Presence of Chronic Condition	
Western	15.84	Present	53.55
		Not Present	12.62
CLUSTERTYPE			
Urban	20.53	Religion	
Rural	13.45	Catholic	13.86
		Protestant	15.66
Sex		Muslim	12.33
Male	12.06	Traditionalist	6.59
Female	18.07	Atheist	60.17
Not Stated	6.26	Other	20.14
		Not Stated	16.18
Age in Years			
0-4	19.54	Insurance cover	
5-14	7.54	Insured	20.71
15-49	16.47	Not Insured	15.16
50-64	22.83	Not stated	6.2
65+	21.77		
		Wealth Index Quintiles	
Marital Status		Poor	14.04
Never Married	11.07	Second Poor	12.61
Married	22.47	Middle	13.69
Divorced	15.13	Second Rich	16.79
Widowed	18.11	Rich	19.95
Separated	18.58		
Missing	7.75	Expenditure quintile	
		Poor	11.71
Level of education		Second Poor	8.54
None	17.43	Middle	21.03
Primary	11.44	Second Rich	17.58
Secondary	20.92	Rich	16.53
University/ Post Secondary	29.21		
		Total 15.08	
Employment Status			
Working	18.4		
On leave/sick	33.21		
Seeking work	10.54		
Retired	41.43		
Homemakers	24.63		
Students	4.76		
Other	14.29		
Missing	13.46		
Total	**15.08**		

Hospitalisation rates differed significantly by gender. Men had 12 admissions per 1,000 population per year as compared to women, who had 18 per 1,000 population.

Annual hospitalisation rates rise consistently with educational level, with an exception for those with no education. The high rate among those with no education may be due to the fact that the group consists mainly of children aged below five years and population in the older age groups who are more prone to attacks from variety of diseases.

Children in the 5 -14 year age group had the lowest hospitalisation rate, about 8 admissions per 1,000 population (Figure 5.10 b).

Figure 5.10(b): Annual Number of admissions per 1,000 population by Age group
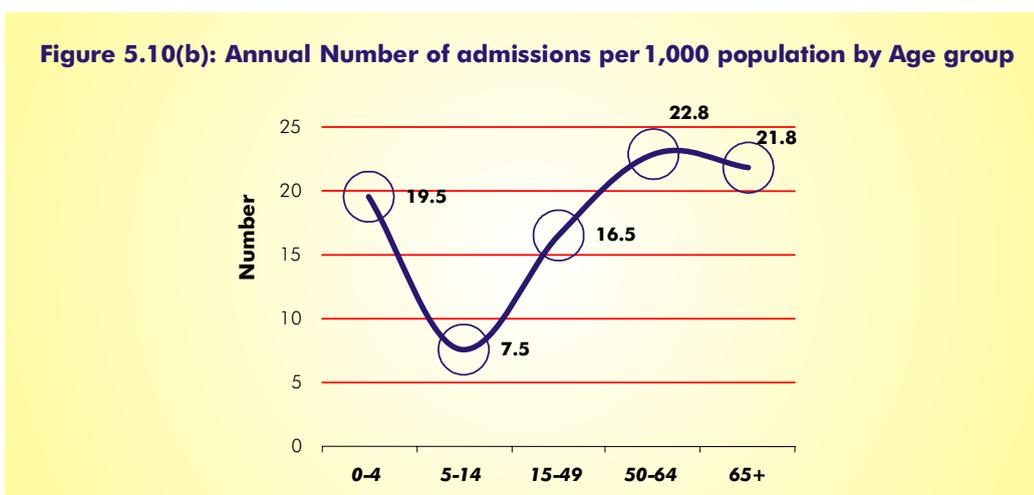
Figure 5.11 shows that hospitalisation rates are lower for Kenyans in the bottom 40% of the wealth or expenditure distribution than for those in the middle or above. This difference probably accounts for the variation in the utilization of health services in the urban and rural areas. Low use rates by the poor may point to inequitable access to care.

Figure 5.11: Annual Number of admissions per 1,000 population by Wealth Index and Expenditure Quintiles
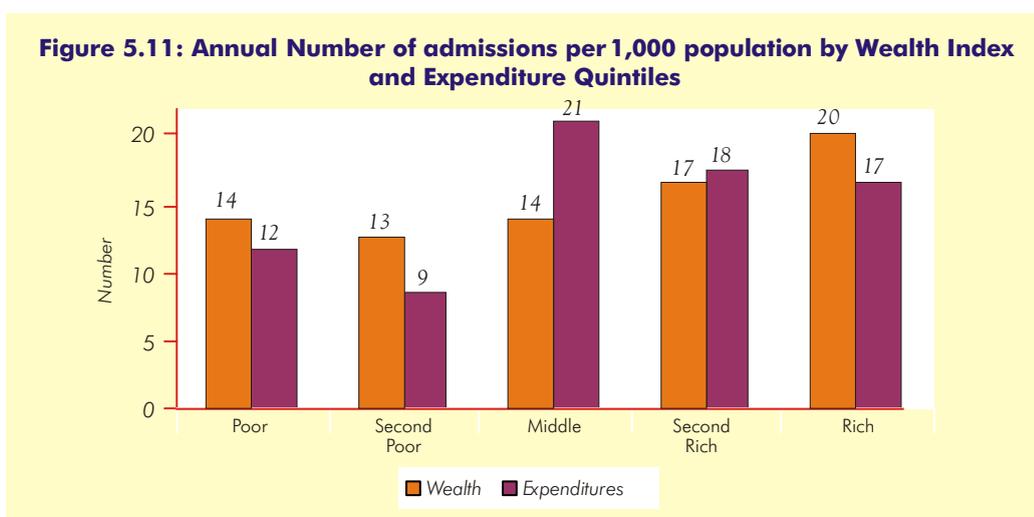
Figure 5.12 shows the hospitalisation rates across occupation/activity categories. Retirees had the highest utilization rates (41 admissions per 1,000 population), while students had the least utilization (5 per 1000 population). The former are generally elderly persons and therefore likely to suffer from complex and severe conditions.

Figure 5.12: Annual Number of Admissions per 1000 population by Occupation
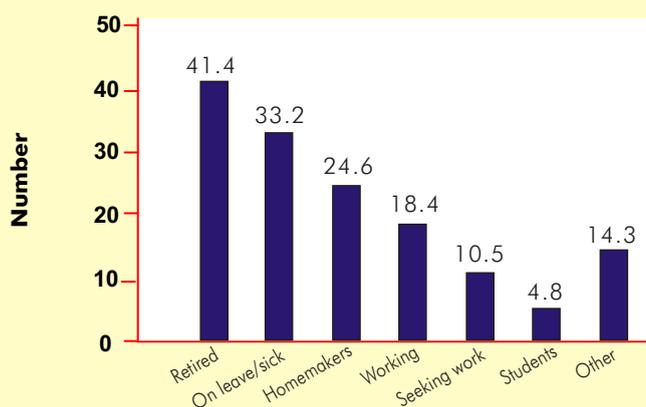
5.2.2 Choice of health care provider for inpatient services

Figure 5.13 shows that, the leading health provider of choice were the government hospitals (63% of total admissions) followed by private hospitals (14%). If no distinction is made between government hospitals and government health centres, then the percentage attending public health facilities would increase to 72%. High use of public health facilities may be due to a variety of factors including cost, travel time and household income. The predominance of public health facilities in the provision of inpatient services can be supported by the fact that more than half of all beds are in these facilities which also have very high occupancy rates.

Figure 5.13: Percent distribution of Admissions by type of provider
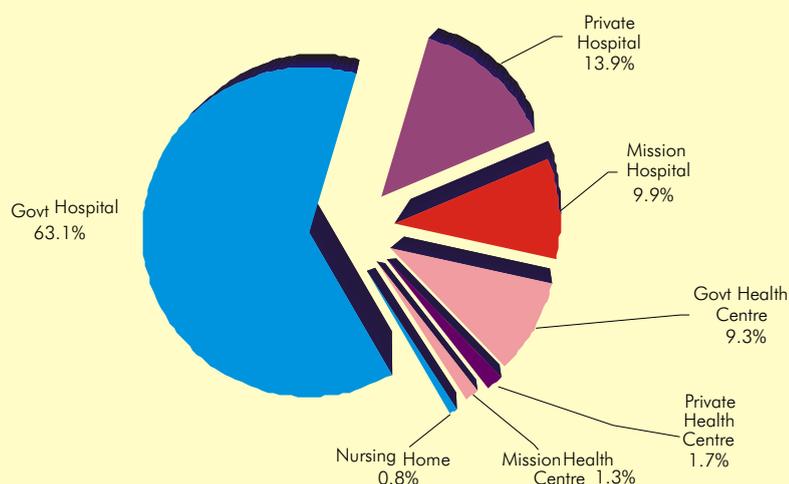
Table 5.13 shows that utilization of government hospitals by the rural population (54 percent), as compared to 84 percent in urban areas, is lower than the national average (63%)

However, rural residents benefited significantly from the services of mission health facilities and government health centres whose frequency of use exceeded that of urban population. This is probably a result of both demand and supply side factors. These facilities are well spread in rural areas and are generally affordable to a large portion of the rural population.

Table 5.13: Percent distribution of admissions by type of health provider

Characteristic	Govt Hospital	Private Hospital	Mission Hospital	Govt Health Centre	Private Health Centre	Mission Health Centre	Nursing Home	Total
PROVINCE								
Nairobi	71.8	21.0	4.7	1.5	0.0	0.0	1.1	100.0
Central	77.2	10.3	10.0	1.9	0.0	0.0	0.6	100.0
Coast	61.5	11.7	10.7	5.1	10.7	0.3	0.0	100.0
Eastern	76.7	8.0	9.2	5.0	0.0	1.1	0.0	100.0
North Eastern	85.8	0.0	0.0	9.6	4.6	0.0	0.0	100.0
Nyanza	54.0	14.4	6.5	18.7	1.1	3.4	2.0	100.0
Rift Valley	63.2	18.5	6.2	10.3	1.1	0.7	0.0	100.0
Western	48.4	6.5	33.0	7.0	1.2	1.6	2.4	100.0
Total	**63.1**	**13.9**	**9.9**	**9.3**	**1.7**	**1.3**	**0.8**	**100.0**
CLUSTER TYPE								
Urban	84.1	11.7	2.5	1.0	0.4	0.1	0.2	100.0
Rural	53.7	15.0	13.1	13.0	2.2	1.8	1.2	100.0
Sex								
Male	56.7	18.7	13.0	7.7	1.2	2.4	0.3	100.0
Female	66.9	11.1	8.0	10.2	2.0	0.6	1.2	100.0
Not Stated	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Age in Years								
0-4	70.0	5.7	11.5	4.6	3.3	3.7	1.3	100.0
5-14	58.9	5.9	11.9	18.0	2.7	0.2	2.3	100.0
15-49	65.0	18.8	7.4	6.4	1.3	0.5	0.5	100.0
50-64	60.3	9.9	13.7	13.7	0.0	2.5	0.0	100.0
65+	30.9	22.2	26.2	0.0	1.6	0.0	100.0	
Not Stated	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Marital Status								
Never Married	67.4	8.7	10.4	7.9	2.5	1.5	1.5	100.0
Married	61.7	18.3	10.4	7.5	0.8	0.8	0.4	100.0
Divorced	58.3	21.6	2.4	0.0	17.6	0.0	0.0	100.0
Widowed	29.6	15.8	0.0	49.1	0.0	5.5	0.0	100.0
Separated	82.2	0.0	10.1	7.7	0.0	0.0	0.0	100.0
Missing	34.2	65.8	0.0	0.0	0.0	0.0	0.0	100.0
Level of education								
None	60.2	8.7	11.0	12.9	3.1	2.5	1.5	100.0
Primary	64.7	14.5	8.0	10.4	1.2	0.4	0.8	100.0
Secondary	66.1	20.6	11.9	0.9	0.0	0.5	0.0	100.0
University	58.4	41.6	0.0	0.0	0.0	0.0	0.0	100.0
Employment Status								
Working	57.6	22.0	4.8	12.9	0.7	1.4	0.7	100.0
On leave/sick	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Seeking work	84.4	11.3	0.0	0.0	4.3	0.0	0.0	100.0
Retired	5.5	9.3	36.8	48.4	0.0	0.0	0.0	100.0
Homemakers	73.3	15.2	9.9	0.2	1.4	0.0	0.0	100.0
Students	59.4	14.7	5.3	16.4	1.7	0.1	2.4	100.0
Other	64.5	6.2	13.9	8.4	2.9	2.5	1.6	100.0
Missing	68.3	20.6	11.2	0.0	0.0	0.0	0.0	100.0
Rating of own Health								
Very good	54.4	18.9	10.9	6.8	6.0	2.7	0.3	100.0
Good	67.1	9.1	9.9	12.1	0.7	0.6	0.5	100.0
Satisfactory	62.9	21.0	10.5	2.0	0.2	1.5	1.9	100.0
Poor	61.8	15.7	7.0	11.4	0.7	1.3	2.1	100.0
Not Stated	63.9	0.0	36.1	0.0	0.0	0.0	0.0	100.0
Presence of Chronic Condition								
Present	57.9	19.8	9.0	10.3	1.7	0.6	0.7	100.0
Not Present	64.4	12.4	10.1	9.0	1.7	1.4	1.0	100.0
Religion								
Catholic	72.8	7.4	8.2	9.9	0.3	0.8	0.5	100.0
Protestant	62.0	16.1	10.3	7.0	1.9	1.5	1.2	100.0
Muslim	66.9	21.2	0.0	3.8	6.3	1.1	0.7	100.0
Traditionalist	0.0	40.8	40.7	18.5	0.0	0.0	0.0	100.0
Atheist	0.0	3.5	43.1	53.4	0.0	0.0	0.0	100.0
Other	59.0	12.8	5.0	19.9	0.0	3.3	0.0	100.0
Not Stated	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Insurance cover								
Insured	45.3	40.3	9.8	3.9	0.0	0.8	0.0	100.0
Not Insured	65.9	9.2	10.1	10.5	1.9	1.4	1.1	100.0
Not stated	68.2	23.3	3.8	0.0	4.6	0.0	0.0	100.0

Table 5.13: Percent distribution of admissions by type of health provider (contn'd)

Characteristic	Govt Hospital	Private Hospital	Mission Hospital	Govt Health Centre	Private Health Centre	Mission Health Centre	Nursing Home	Total
PROVINCE								
Wealth Index Quintiles								
Poor	48.8	7.0	8.3	27.1	5.0	2.5	1.4	100.0
Second Poor	56.1	6.8	20.4	11.8	1.4	1.1	2.3	100.0
Middle	74.5	9.2	12.9	2.1	1.3	0.0	0.0	100.0
Second Rich	56.7	30.3	5.8	3.7	0.6	2.2	0.7	100.0
Rich	79.8	16.2	2.8	0.7	0.0	0.5	0.0	100.0
Total	**63.1**	**13.9**	**9.9**	**9.3**	**1.7**	**1.3**	**0.9**	**100.0**
Expenditure quintile								
Poor	40.1	6.6	7.3	39.4	1.1	1.5	3.9	100.0
Second Poor	52.3	18.8	11.6	13.0	1.7	0.9	1.7	100.0
Middle	72.5	5.1	12.2	3.2	4.0	3.0	0.0	100.0
Second Rich	64.3	20.2	11.6	2.2	1.1	0.6	0.0	100.0
Rich	72.2	20.1	6.4	1.0	0.0	0.0	0.3	100.0
Total	**63.1**	**13.9**	**9.9**	**9.3**	**1.7**	**1.3**	**0.9**	**100.0**

Sex differences in utilization of government facilities are not statistically significant. There were notable differentials in use of private health facilities by education level. Higher levels of education were associated with higher levels of utilization of private health hospitals (42%) compared to only 9% of admissions among those with no schooling. This difference is not explained by differences in income.

The difference in hospitalisation rates by wealth index quintile comes out clearly particularly when hospitals alone are considered. As seen from Figure 5.14, public hospitals were the providers of choice for all the quintile groups seeking in patient care. Individuals in the richest (wealth index) quintile have relatively higher levels of utilization of both government and private hospitals (80% and 16% of the admissions in this group respectively). Among individuals in the poorest quintile, the utilization rate of the government and private hospitals were lower (49% and 7% of admissions in this group respectively). Less use of public hospitals by the poor, despite the low charges, suggests it might be due to various reasons which include inability of households to pay.

Figure 5.14: Distribution of Hospital Admissions as percent of total Admissions by Ownership and Wealth Index Quintile
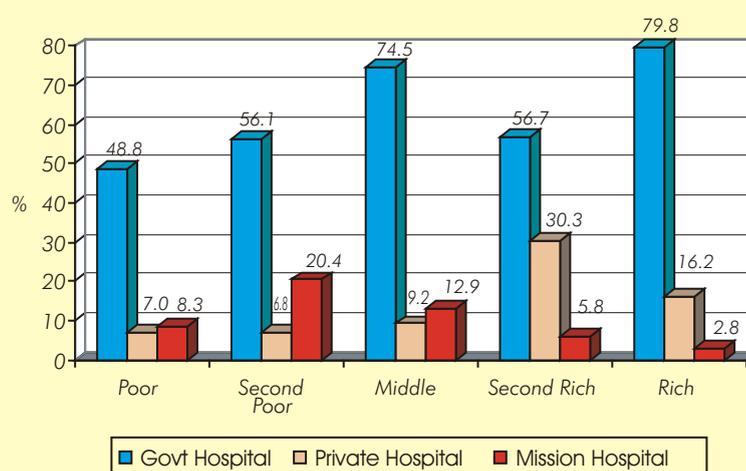
However, what emerges when all the health facilities are reclassified into three categories, namely public, private and mission irrespective of facility type is interesting (Figure 5.15). The differentials noted above tend to be eliminated to a large extent indicating that what the poor lost in hospitals was compensated at lower levels of health care system.

Figure 5.15: Percent Distribution of All Admissions by Ownership of Provider and Wealth Index
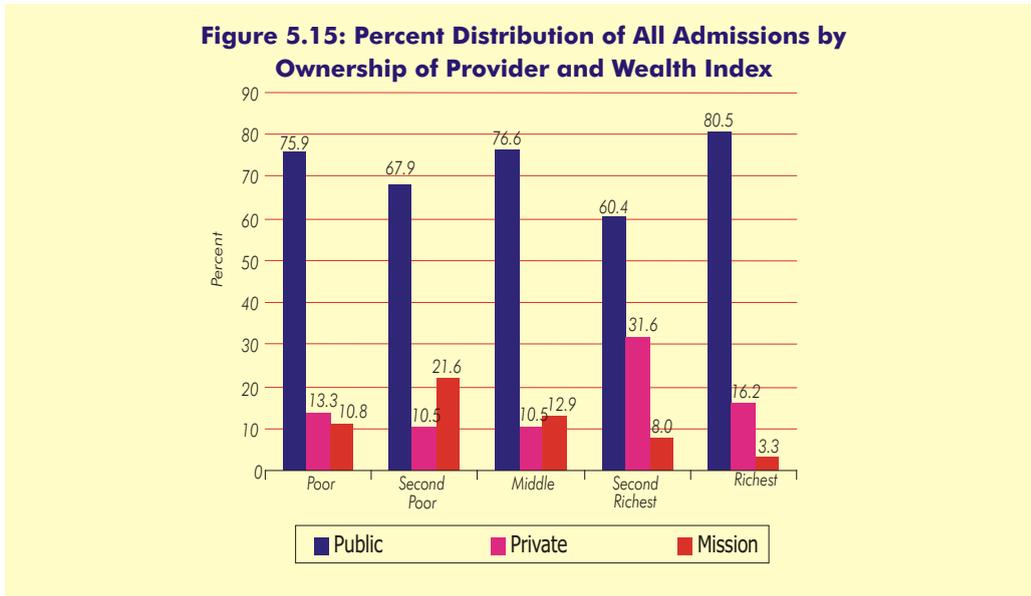
More than 90% of patients in the upper and middle wealth ranges used a hospital (rather than a health centre or nursing home) for their inpatient care, compared with nearly two-thirds of the poorest and 80% of the next-poorest group. Wealthier individuals who were hospitalized were more likely to use a private hospital, and less likely to rely on a mission hospital, than poorer hospital patients were. Use of government hospitals did not differ significantly among the wealth groups.

5.2.3 Per capita annual out-of-pocket Expenditures on inpatient care

Table 5.14 presents the per capita out-of-pocket expenditure by various characteristics. Overall, the average annual per capita out-of pocket for inpatient expenditure is KSh 111.[13] This is much lower than the annual per capita out-of pocket for outpatient expenditure (KSh 508), because inpatient admissions are needed infrequently.

Analysis shows that expenditure per capita on admissions vary across the provinces. In Nairobi province, the per capita expenditure was KSh 201 per year while Rift Valley had KSh 176. In the remaining provinces, per capita out-of-pocket expenditures declined from KSh 144 in Central province to KSh 14 in North Eastern Province. These expenditure differentials reflect the variation in the distribution of population by socio-economic groups while accessibility, type of health provider and ability to pay for inpatient health care services are important among other factors.

Differences between urban and rural areas are not statistically significant.

Annual per capita cost of admissions varied by age group. It was lowest among children aged under five (KSh 72) and highest among 65+ years (KSh 187). The high cost, in the latter group, reflects specialized care that is demanded. On the whole, the observed per capita differentials in expenditures could be due to variation in the severity of illness since *demand is less elastic[14] as severity increases- thus suggesting inequality across patients.* Clearly, treating severe cases is resource intensive and expensive. For instance, individuals who are the sickest may need to be admitted to intensive care units, may need high-technology equipment, or may need to stay longer in hospitals than less ill patients this applies best among the elderly.

The variation in per capita cost of admissions between male (KSh 70) and females (KSh153) is entirely due to more frequent hospitalization by women.

Differentials in expenditures made towards inpatient health care per person can also be seen through the structure of payments across wealth index groups. It is seen that per capita expenditures generally increase with rising wealth index quintiles from KSh 73 for those in the poorest quintile to three times as much for those in the richest quintile (KSh 219). These differences may provide part of the explanation for variation in utilization, but other differences in propensity of people to seek care cannot be excluded.

[13] With a 95% confidence interval of Ksh 63 to 161.

[14] A measure of the responsivenes of the quantity demanded of in-patient health service to change in its price

Table 5.14: Per capita out-of-pocket Expenditure on Admissions

PROVINCE	Number	Ksh
Nairobi	2,563,297	201.21
Central	3,909,728	144.30
Coast	2,801,356	75.23
Eastern	5,103,110	52.46
North Eastern	1,187,767	13.84
Nyanza	4,804,078	100.73
Rift Valley	7,902,033	176.16
Western	3,853,936	33.50
RESIDENCE		
Urban	7,403,220	168.47
Rural	24,722,085	94.35
Sex		
Male	15,842,396	69.57
Female	16,199,133	152.88
Age in Years		
0-4	4,294,372	71.92
5-14	8,842,514	25.69
15-49	15,739,172	162.58
50-64	2,088,998	133.71
65+	1,093,717	187.24
Not Stated	66,533	13.23
Marital Status		
Never Married	19,613,271	62.66
Married	10,527,044	203.96
Divorced	217,792 3	58.74
Widowed	1,018,230	60.94
Separated	283,507	99.41
Missing	465,462	75.84
Level of education		
None	10,432,294	67.83
Primary	15,981,547	64.04
Secondary	5,246,492	315.67
University/Post Secondary	310,025	588.07
Employment Status		
Working	8,461,516	151.48
On leave/sick	127,083	76.09
Seeking work	1,082,240	54.91
Retired	295,476	332.19
Homemakers	3,915,473	347.24
Students	5,849,363	15.26
Other	11,659,156	48.85
Missing	734,999	153.02
Rating of own Health		
Very good	7,325,973	88.99
Good	19,581,106	102.96
Satisfactory	3,694,097	122.61
Poor	1,211,352	375.59
Not Stated	312,778	12.75
Presence of Chronic Condition		
Present	1,930,594	741.77
Not Present	30,194,711	71.13
Religion		
Catholic	8,943,050	95.00
Protestant	18,502,735	119.08
Muslim	3,137,583	84.45
Traditionalist	491,388	68.42
Atheist	195,155	307.34
Other	775,104	212.29
Not Stated	80,290	47.07
Insurance cover		
Insured	3,124,852	138.32
Not Insured	26,754,996	116.07
Not stated	2,245,457	18.80
Wealth Index Quintiles		
Poor	6,969,988	73.40
Second Poor	7,365,707	81.88
Middle	6,924,095	48.66
Second Rich	5,680,150	174.86
Rich	5,185,365	218.89
Total	**32,125,305**	**111.43**

5.2.4 Causes of Admission

Table 5.15 shows that the leading causes of admission as reported were malaria, respiratory infections, diarrhoea, tuberculosis and accidents and injuries in that order. The disease pattern displayed is generally consistent with the country's epidemiological pattern.

Table 5.15: Causes of Admission

Causes	%
Malaria	40.5
Respiratory Infections	13.8
Diarrhoea	7.6
Tuberculosis	3.3
Accidents and injuries	2.5
Skin Disease	2.3
Diabetes	1.6
Intestinal Worms	1.5
Eye Infections	1.1
HIV/AIDS	1.0
Sexually Transmitted Diseases	0.2
All Others	24.6
Total	100.0

5.2.5 Reasons for avoiding nearest health care providers

Data from the survey on reasons for avoiding the nearest health facility provide partly insights into barriers for non use. All persons who had sought admission were asked if the admitting facility was the one nearest to their homes. Those who answered that it was not were asked the main reasons for bypassing the nearest facility. The results, shown in Table 5.16, indicate that "expensive services" (27%) and "was referred to a more specialized facility" (20%) were the main reasons preventing people from seeking admission in their nearest facility. That "medicine was unavailable" acted as barrier to utilization of nearest facility while unavailability of beds acted as further disincentive (4%).

Table 5.16: Percent distribution of reasons for avoiding nearest providers

Reason	%
Services are expensive	27.3
Was referred	19.7
Staff unqualified	12.4
Medicine unavailable	7.6
Unfriendly staff	5.1
Long waiting time	4.5
Beds not available	4.0
Would have paid	3.4
No privacy	2.2
Dirty Facility	2.1
Other	11.7
Total	**100.0**

5.2.6 Main reasons for choosing the admitting health care provider

While seeking care, the sick face choices that vary by health facility and ownership among other aspects. Respondents were asked why they or members of their households had chosen to visit particular facility where admission was granted.

Proximity to their homes (17%) and less cost (16%) were important considerations for individuals seeking admission (Table 5.17)

Table 5.17: Percent distribution of reasons for seeking care

Reason	%
Close to home	17.4
Less costly	16.2
Staff are qualified	15.7
Was referred	11.5
Medicine available	8.9
Staff gives good advice	6.9
Good attitude of the staff	4.9
Knew someone in the facility	3.2
Requirement of the employer	3.1
Cleaner facility	2.6
Others	9.6
Total	**100.0**

5.2.7 Sources of funds

One important indicator for determining non- affordability is the need to seek assistance from friends or family members and relatives, borrow, sell household assets, get opportunity to pay later, or otherwise raise funds (Harambee) for health care. Table 5.18 shows percent distribution of responses for individuals who reported non-zero health care expenditures by the source of funds. Because the survey allowed an individual to make multiple selections of sources, the results, therefore, show the importance of each source and should not be interpreted as a percent distribution of expenditures by source of funds.

The results indicate that *"had own cash"* was mentioned most frequently as source of expenditure for individuals who paid for inpatient care. Over one in ten responses cited *"Harambee"* contributions while *"borrowed funds"* to cover admission costs was stated by 4% of the responses. Although *"had own cash"* was cited by majority, there is a likelihood that substantial number of the concerned individuals may have had to dip deep into their savings to finance inpatient care leaving little for other uses.

These findings suggest that less wealthy households may have had difficulties meeting the costs of inpatient care than higher wealth group, since durable assets and loans tend to be less accessible to the poor thus seriously undermining access to care.

Table 5.18: Percent distribution of sources of payment for inpatient care

Source	%
Own cash	64.4
Harambee contribution	11.8
Borrowed	4.2
Community Health Insurance Scheme	2.6
Private Health Insurance	0.7
NHIF	6.9
Sold household Assets	3.9
Waived/ exempted	1.0
Reimbursed by employer	0.5
Allowed to pay later	1.2
Don't know	2.8
Total	**100.0**

5.2.8 Average length of stay

This section presents the analysis of average length of stay by selected variables in recognition of the potential economic significance of these variations. In discussing this, several issues emerge. First, is the variation in average length of stay (ALoS) simply the result of differences in demographic patterns or severity of illness among the different populations? Secondly, what do the health workers do differently that results in different lengths of stay? And lastly, do the differences in ALoS lead to differences in patients' health care outcomes? Although the above issues are beyond the scope of this survey, it is necessary from a number of viewpoints to undertake analysis of what the survey captured regarding length of stay.

Average lengths of stay of 10 days and 9 days were reported in mission and government health facilities respectively (Table 5.19). Public health facilities are generally characterized by high bed occupancies.

Private health facilities had lower average length of stay (6 days). These facilities are generally characterized by lower bed occupancy rates accompanied by high costs per bed-day occupied thus deterring long stay. This combination signals excess bed availability, low demand for hospitalisation in relation to installed capacity and demand that may have been diverted to other health institutions.

Table 5.19: Average Length of stay (days) by Selected Characteristics

	Government	Private	Mission	Mean
Province				
Nairobi	9.6	5.4	10.2	7.4
Central	7.2	9.1	9.9	8.1
Coast	9.5	6.5	8.9	8.0
Eastern	9.8	8.7	9.8	8.4
North Eastern	13.6	4.0		8.5
Nyanza	9.8	6.7	10.4	8.2
Rift Valley	9.6	5.6	9.5	8.1
Western	8.1	4.1	12.3	7.6
Residence				
Urban	10.1	5.2	11.0	9.4
Rural	9.2	7.1	9.5	8.2
Sex				
Male	10.5	6.6	10.6	9.7
Female	8.7	6.0	9.5	8.0
Age in Years				
0-4	6.6	3.6	8.0	6.4
5-14	7.4	4.9	8.6	7.5
15-49	10.9	5.1	10.3	9.2
50-64	9.2	8.0	10.9	8.0
65+	12.1	10.1	12.2	11.0
Marital Status				
Never Married	9.0	4.0	8.0	9.0
Married	7.2	5.1	11.0	8.2
Divorced/separated	10.0	8.2	9.8	9.9
Widowed	10.7	7.8	11.4	8.6
Level of Education				
None	10.3	12.1	13.4	10.0
Primary	9.9	5.2	8.6	7.8
Secondary	9.8	4.9	11.3	8.5
University	8.0	4.4	6.4	6.5
Not stated	10.0	5.0	6.7	7.0
Employment Status				
Working	10.4	6.4	7.7	9.1
On leave/sick	11.8	6.0	7.2	7.9
Seeking work	8.7	7.0	5.2	8.3
Retired	11.1	8.1	15.0	11.1
Homemakers	8.3	5.2	7.8	8.1
Students	9.4	2.1	5.3	5.4
Other	6.9	7.7	16.0	9.1
Under age	8.0	3.1	11.2	7.7
Not stated	5.8	10.0	7.0	7.0
Rating of own Health				
Very good	6.6	3.2	8.0	5.9
Good	9.9	7.0	7.5	9.6
Satisfactory	10.1	5.1	9.6	7.9
Poor	10.4	10.1	12.0	10.1
Presence of Chronic Condition				
Present	9.5	7.1	11.4	8.7
Not Present	8.9	5.8	9.6	8.1
Insurance cover				
Insured	8.3	6.6	7.2	6.9
Not Insured	10.2	6.0	13.1	9.1
Wealth Index Quintiles				
Poorest	8.9	7.1	19.6	9.5
Second	10.7	7.7	12.8	10.1
Middle	10.5	14.4	8.1	10.4
Fourth	8.9	4.5	6.1	6.8
Richest	7.0	5.0	6.3	6.1
Total	**9.0**	**6.1**	**9.9**	**8.5**

5.1.9 Average cost per admission day by facility type

Data was collected on how much was spent on inpatient expenses, including any medicines. Table 5.20 presents the average out-of-pocket costs for an inpatient day by type of health provider. Private hospitals, as expected, were reported to be most expensive provider of inpatient health care, followed by mission health hospitals.

Table 5.20: Average out-of-pocket costs for an inpatient day by type of health provider

Type of Health Facility	Ksh
Government Hospital	910
Private Hospital	4,965
Mission Hospital	865
Government Health Centre	582
Private Health Centre	613
Mission Health Centre	491
Nursing Home	780
Overall	**1,132**

5.3   Total health Expenditure

Receipt of health care service can lead to substantial spending, especially for individuals with limited income. Data captured by the survey on health expenditures were compared with total household expenditures to assess the magnitude of burden on households due to health care costs.

Table 5.21 presents a combined out-of-pocket expenditures on health care services (outpatient and inpatient) as a percentage of total household expenditure. Overall, 3.4% of total household expenditure is spent on health care.

Province wise, the range is between 1.7% in Nairobi to 5.1% in North Eastern. Rural areas spent about 4% of their household expenditures on health compared to2% in urban areas.

Table 5.21: Total Out-of-pocket expenditures on Treatment (outpatient and inpatient) as percentage of total household expenditure.

Characteristic	Number of Households	%
Province		
Nairobi	712,164	1.67
Central	1,059,206	2.81
Coast	690,219	2.18
Eastern	1,122,572	4.49
North Eastern	192,454	5.13
Nyanza	1,126,768	4.91
Rift Valley	1,852,636	3.60
Western	783,802	2.53
Residence		
Urban	2,132,044	2.09
Rural	5,407,777	3.96
Sex		
Male	5,372,826	3.42
Female	2,155,071	3.48
Not Stated	11,924	1.65
Age in Years		
0-4	5,743	0.35
5-14	15,960	0.22
15-49	5,222,536	3.05
50-64	1,404,541	4.26
65+	851,620	4.38
Marital Status		
Never Married	762,194	1.78
Married	5,487,428	3.65
Divorced	150,583	3.76
Widowed	891,096	3.92
Separated	175,451	1.84
Missing	73,068	1.97
Level of education		
None	1,552,415	4.56
Primary	3,596,968	3.46
Secondary	2,155,127	2.76
University	174,318	1.69
Employment Status		
Working	5,355,203	3.16
On leave/sick	47,688	3.70
Seeking work	129,243	3.33
Retired	239,787	5.07
Homemakers	849,551	4.19
Students	39,459	2.11
Other	760,465	3.70
Missing	118,425	5.73
Rating of own Health		
Very good	1,774,506	2.47
Good	4,137,290	3.14
Satisfactory	1,063,264	5.09
Poor	508,074	5.62
Not Stated	56,687	4.25
Presence of Chronic Condition		
Present	866,619	5.88
Not Present	6,673,202	3.12
Religion		
Catholic	2,226,990	3.06
Protestant	4,246,897	3.69
Muslim	636,081	3.19
Traditionalist	159,681	3.74
Atheist	63,610	1.48
Other	187,006	2.58
Not Stated	19,555	10.12
Insurance cover		
Insured	988,305	2.72
Not Insured	6,226,137	3.62
Not stated	325,379	2.09
Wealth Index Quintiles		
Poorest	1,507,118	4.20
Second	1,507,418	4.07
Middle	1,508,022	3.80
Fourth	1,509,158	2.87
Richest	1,508,106	2.22
Expenditure quintile		
Poor	1,094,525	7.89
Second Poor	1,218,544	3.83
Middle	1,360,181	3.52
Second Rich	1,611,728	2.51
Rich	2,254,843	1.66
TOTAL	**7,539,821**	**3.43**

Table 5.22 shows that the annual per capita out-of-pocket spending on health care was KSh 619. Nairobi had the highest per capita out-of-pocket expenditure on health while Western province had the lowest. Urban spending on health per capita is twice that of rural.

Table 5.22: Total Per capita out-of-pocket expenditures on Treatment

Characteristic	Population	Mean [KSh]
Province		
Nairobi	2,561,064	1,655.45
Central	3,907,927	678.13
Coast	2,799,333	491.30
Eastern	5,096,189	368.57
North Eastern	1,185,631	755.33
Nyanza	4,772,465	648.17
Rift Valley	7,876,499	619.21
Western	3,838,985	295.01
Residence		
Urban	7,390,838	1,096.91
Rural	24,647,254	488.29
Sex		
Male	15,818,667	942.68
Female	16,135,649	322.73
Not Stated	83,776	270.67
Age in Years		
0-4	4,270,500	40.33
5-14	8,819,071	11.36
15-49	15,708,807	815.90
50-64	2,081,790	2,383.70
65+	1,091,391	1,739.87
Marital Status		
Never Married	19,564,110	71.66
Married	10,501,112	1,596.90
Divorced	217,792	1,428.14
Widowed	1,009,751	1,425.29
Separated	283,026	493.28
Missing	462,301	175.40
Level of education		
None	10,384,222	339.59
Primary	15,952,554	510.65
Secondary	5,238,033	1,182.21
University	309,970	3,236.45
Employment Status		
Working	8,453,327	1,739.23
On leave/sick	125,763	1,670.50
Seeking work	1,080,170	196.41
Retired	294,087	4,960.51
Homemakers	3,895,569	339.22
Students	5,838,170	20.87
Other	11,619,763	166.57
Missing	731,242	246.11
Rating of own Health		
Very good	7,321,003	510.15
Good	19,545,349	547.01
Satisfactory	3,658,810	1,057.78
Poor	1,201,654	1,460.61
Not Stated	311,276	290.71
Presence of Chronic Condition		
Present	1,913,590	1,846.54
Not Present	30,124,502	551.33
Religion		
Catholic	8,917,226	610.06
Protestant	18,448,033	572.75
Muslim	3,134,658	1,037.87
Traditionalist	490,872	466.53
Atheist	195,155	424.58
Other	771,858	688.43
Not Stated	80,290	489.70
Insurance cover		
Insured	3,120,145	1,101.78
Not Insured	26,685,493	603.55
Not stated	2,232,454	268.02
Wealth Index Quintiles		
Poorest	6,950,428	412.85
Second	7,337,640	388.78
Middle	6,911,212	392.06
Fourth	5,673,540	716.57
Richest	5,165,272	1,480.03
Expenditure quintile		
Poor	6,408,440	288.34
Second Poor	6,411,050	334.11
Middle	6,397,505	567.79
Second Rich	6,408,874	529.45
Rich	6,412,223	1,423.32
Total	**32,038,092**	**619.44**

5.4 International Comparative analysis

It is useful to compare health care use in Kenya with other countries to get an idea of what share of the potential demand is being met by existing providers. Table 5.23 shows that health care utilization rates have a high degree of variability among countries.

The level of hospitalisation, as measured by number of admissions per 1,000 population annually in Kenya is low by international standards. Compared to OECD countries, the use of health care services in Kenya was significantly lower.
In comparison with other low and middle-income countries, Kenyans are average users of outpatient care services but somewhat lower users in terms of inpatient care services. For example, Kenyans made fewer outpatient visits per capita than individuals in Sri Lanka. The latter has a per capita income, which is about twice that of Kenya.

Table 5.23: International Comparison of utilization rates

	Outpatient utilization (Visits per person per year)	Annual Hospital Utilization (Admissions per 1,000 population)
KENYA	1.92	15
Selected OECD Countries:		
Canada	6.8	147
Germany	11.5	181
Japan	12.9	86
Norway	5.7	149
Sweden	2.8	192
UK	5.7	127
USA	5.5	170
Middle/Low Income Countries:		
Egypt	3.5	27
India	2.0	96
Sri Lanka	5.0	178
Indonesia	0.32	17
Jamaica	2.1	33
Thailand	3.2	82
Cyprus	5.8	128
Guatemala	0.16	26
Ethiopia	0.25[15]	15
Korea	0.37	0.83
Turkey	4.23	0.077
Jordan	3.55	78.21

[15] Total outpatient utilisation of government health facilities in Ethiopia suggests that, on average, there are about 0.25 visits per person per year.

Chapter 6. Health Insurance Coverage

The main purpose of health insurance is to cover individuals against financial uncertainty. A major contribution of the Survey was to provide a better understanding of the proportion of the population that is insured and the kind of insurance cover people have.

The survey questionnaire contained several questions that captured issues on insurance. These were: whether the household members were covered with health insurance, the type of insurance cover, who paid for the cover? How the household paid for the health insurance cover? How much the household spent per month on insurance premiums? And what medical services are covered by the health insurance?

6.1 Population with Health Insurance Cover

Table 6.1 presents results on health insurance coverage by selected socioeconomic and demographic characteristics. Overall, the results from the survey indicate that only one in ten people (9.7 percent) of Kenya's population is covered by health insurance.

Province and residence:
Large differences exist in health insurance coverage by province and residence. The findings show that the health insurance coverage ranges from 1% in North Eastern to 17% in Nairobi.

While in urban areas about 18 percent of individuals were insured, coverage in rural areas was only 7 percent, reflecting differences in the levels of formal and informal sector employment as well as incomes.

Gender:
 Males were slightly more likely to have health insurance cover (10.4%) than females (9.1%) probably because men were more likely to be employed in formal sectors, which are the primary sources of health insurance.

Education:
Individuals with no education had the lowest heath insurance coverage (5.9%) compared to those with secondary level of education (21%) and to those with University/post secondary level of education (52%).

Wealth Index Quintiles:
Health insurance coverage is highly correlated with wealth index quintiles. Individuals in the richest quintile are 18 times more likely to have health insurance cover than those in the poorest quintile. *Because insurance premiums are pegged to incomes, wealth index quintiles serve as partial proxy for the cost of insurance and hence coverage.*

Table 6.1: Proportion of Population with Health Insurance Cover

Characteristic	Number	%
Province		
Nairobi	2,563,297	17.0
Central	3,909,728	7.8
Coast	2,801,356	6.8
Eastern	5,103,110	6.3
North Eastern	1,187,767	1.1
Nyanza	4,804,078	9.7
Rift Valley	7,902,033	14.4
Western	3,853,936	6.5
Residence		
Urban	7,403,220	17.6
Rural	24,722,085	7.4
Sex		
Male	15,842,396	10.4
Female	16,199,133	9.1
Not Stated	83,776	2.4
Age in Years		
0-4	4,294,372	8.3
5-14	8,842,514	9.8
15-49	15,739,172	10.9
50-64	2,088,998	7.9
65+	1,093,717	0.9
Marital Status		
Never Married	19,613,271	8.6
Married	10,527,044	12.6
Divorced	217,792	5.7
Widowed	1,018,230	2.7
Separated	283,507	4.6
Missing	465,462	13.9
Level of Education		
None	10,432,294	5.9
Primary	15,981,547	7.9
Secondary	5,246,492	20.6
University/post Secondary	310,025	52.3
Employment Status		
Working	8,461,516	14.2
Seeking work	1,082,240	4.5
Retired	295,476	6.3
Homemakers	3,915,473	6.9
Students	5,849,363	9.8
Other	11,659,156	8.0
Missing	734,999	7.3
Rating of own Health		
Very good	7,325,973	13.5
Good	19,581,106	9.1
Satisfactory	3,694,097	7.9
Poor	1,211,352	3.8
Not Stated	312,778	4.4
Presence of Chronic Condition		
Present	1,930,594	7.4
Not Present	30,194,711	9.9
Religion		
Catholic	8,943,050	9.7
Protestant	18,502,735	11.1
Muslim	3,137,583	4.8
Traditionalist	491,388	0.9
Atheist	195,155	3.0
Other	775,104	4.8
Not Stated	80,290	3.6
Wealth Index Quintiles		
Poorest	6,969,988	1.4
Second	7,365,707	4.8
Middle	6,924,095	6.7
Fourth	5,680,150	15.5
Richest	5,185,365	25.6
Expenditure quintiles		
Poor	6,426,564	2.2
Second Poor	6,426,657	4.2
Middle	6,424,581	6.5
Second Rich	6,422,984	11.7
Rich	6,424,519	24.0
Total	**32,125,305**	**9.7**

6.2 Type of insurance coverage

The survey gathered information on the type of health insurance using the following classification:

- Private individual insurance
- Employer insurance scheme,
- NHIF
- Community insurance
- Others

Table 6.2 presents the findings. Of all those insured, NHIF is the largest single provider of health insurance cover (88%). Others were cited at diminishing frequencies. It is noted that private individual insurance and employer insurance coverage is highest in Nairobi.

Table 6.2: Percent distribution of insured people by type of health insurance coverage and province.

Province	Private Individual Insurance	Employer Insurance scheme	NHIF	Others	Total
Nairobi	17.0	16.5	65.2	1.3	100.0
Central	2.2	8.7	89.1	0.0	100.0
Coast	8.7	12.9	77.9	0.5	100.0
Eastern	1.1	3.7	94.0	1.2	100.0
North Eastern	0.0	0.8	99.2	0.0	100.0
Nyanza	3.6	2.8	93.1	0.5	100.0
Rift Valley	2.9	3.0	93.5	0.6	100.0
Western	1.3	3.8	94.9	0.0	100.0
Total	**5.0**	**6.3**	**88.1**	**0.6**	**100.0**

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Annex 1: Allocation of the clusters and households, response rates by province, district and place of residence

Responding Province/District	Number of Clusters selected			Households selected			Responding Households			% of Households		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Nairobi	0	90	90	0	1,080	1,080	0	940	940	0	87.0	87.0
Kiambu	12	5	17	144	60	204	143	60	203	99.3	100.0	99.5
Kirinyaga	12	1	13	144	12	156	143	12	155	99.3	100.0	99.4
Murang'a	11	1	12	132	12	144	129	11	140	97.7	91.7	97.2
Nyandarua	11	2	13	132	24	156	132	24	156	100.0	100.0	100.0
Nyeri	12	4	16	144	48	192	142	48	190	98.6	100.0	99.0
Thika	11	5	16	132	60	192	131	60	191	99.2	100.0	99.5
Maragua	13	0	13	156	0	156	156	0	156	100.0	0.0	100.0
Central	82	18	100	984	216	1,200	976	215	1191	99.2	99.5	99.3
Kilifi	12	3	15	144	36	180	134	21	155	93.1	58.3	86.1
Kwale	12	3	15	144	36	180	111	33	144	77.1	91.7	80.0
Lamu	6	2	8	72	24	96	57	24	81	79.2	100.0	84.4
Mombasa	0	20	20	0	240	240	0	227	227	0.0	94.6	94.6
Taita Taveta	8	4	12	96	48	144	68	40	108	70.8	83.3	75.0
Tana River	8	1	9	96	12	108	85	10	95	88.5	83.3	88.0
Malindi	7	4	11	84	48	132	82	46	128	97.6	95.8	97.0
Coast	53	37	90	636	444	1,080	537	401	938	84.4	90.3	86.9
Embu	5	3	8	60	36	96	60	35	95	100.0	97.2	99.0
Isiolo	3	2	5	36	24	60	35	24	59	97.2	100.0	98.3
Kitui	8	2	10	96	24	120	96	24	120	100.0	100.0	100.0
Makueni	11	1	12	132	12	144	128	12	140	97.0	100.0	97.2
Machakos	11	1	12	132	12	144	130	12	142	98.5	100.0	98.6
Marsabit	4	1	5	48	12	60	47	12	59	97.9	100.0	98.3
Mbeere	6	0	6	72	0	72	67	0	67	93.1	0.0	93.1
Meru Central	7	3	10	84	36	120	80	31	111	95.2	86.1	92.5
Moyale	2	1	3	24	12	36	24	12	36	100.0	100.0	100.0

Annex 1: Allocation of the clusters and households, response rates by province, district and place of residence (contn'd)

Responding Province/District	Number of Clusters selected			Households selected			Responding Households			% of Households		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Mwingi	7	1	8	84	12	96	83	12	95	98.8	100.0	99.0
Meru North	10	0	10	120	0	120	115	0	115	95.8	0.0	95.8
Tharaka	5	0	5	60	0	60	60	0	60	100.0	0.0	100.0
Meru South	6	0	6	72	0	72	72	0	72	100.0	0.0	100.0
Eastern	85	15	100	1,020	180	1,200	997	174	1171	97.7	96.7	97.6
Garissa	10	4	14	120	48	168	119	43	162	99.2	89.6	96.4
Mandera	11	4	15	132	48	180	111	48	159	84.1	100.0	88.3
Wajir	13	3	16	156	36	192	155	36	191	99.4	100.0	99.5
North Eastern	34	11	45	408	132	540	385	127	512	94.4	96.2	94.8
South Kisii	8	0	8	96	0	96	94	0	94	97.9	0.0	97.9
Homa Bay	7	1	8	84	12	96	84	12	96	100.0	100.0	100.0
Central Kisii	8	1	9	96	12	108	94	12	106	97.9	100.0	98.1
Kisumu	4	7	11	48	84	132	46	84	130	95.8	100.0	98.5
Kuria	5	1	6	60	12	72	60	12	72	100.0	100.0	100.0
Migori	8	2	10	96	24	120	94	24	118	97.9	100.0	98.3
North Kisii	6	3	9	72	36	108	63	28	91	87.5	77.8	84.3
Rachuonyo	7	1	8	84	12	96	84	12	96	100.0	100.0	100.0
Siaya	9	1	10	108	12	120	106	12	118	98.1	100.0	98.3
Suba	6	0	6	72	0	72	72	0	72	100.0	0.0	100.0
Bondo	7	0	7	84	0	84	84	0	84	100.0	0.0	100.0
Nyando	7	1	8	84	12	96	83	12	95	98.8	100.0	99.0
Nyanza	82	18	100	984	216	1,200	964	208	1172	98.0	96.3	97.7
Baringo	5	1	6	60	12	72	60	12	72	100.0	100.0	100.0
Bomet	7	0	7	84	0	84	84	0	84	100.0	0.0	100.0

Annex 1: Allocation of the clusters and households, response rates by province, district and place of residence (contn'd)

Responding Province/District	Number of Clusters selected			Households selected			Responding Households			% of Households		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Kajiado	5	2	7	60	24	84	59	23	82	98.3	95.8	97.6
Kericho	7	1	8	84	12	96	83	10	93	98.8	83.3	96.9
Koibatek	3	1	4	36	12	48	35	12	47	97.2	100.0	97.9
Laikipia	5	2	7	60	24	84	60	23	83	100.0	95.8	98.8
Marakwet	4	0	4	48	0	48	48	0	48	100.0	0.0	100.0
Nakuru	8	5	13	96	60	156	95	59	154	99.0	98.3	98.7
Nandi	8	0	8	96	0	96	96	0	96	100.0	0.0	100.0
Narok	6	1	7	72	12	84	68	12	80	94.4	100.0	95.2
Samburu	3	1	4	36	12	48	31	10	41	86.1	83.3	85.4
Trans Mara	4	0	4	48	0	48	47	0	47	97.9	0.0	97.9
Trans Nzoia	7	1	8	84	12	96	84	12	96	100.0	100.0	100.0
Turkana	7	1	8	84	12	96	82	12	94	97.6	100.0	97.9
Uasin Gishu	5	4	9	60	48	108	59	47	106	98.3	97.9	98.1
West Pokot	4	1	5	48	12	60	48	12	60	100.0	100.0	100.0
Buret	6	0	6	72	0	72	71	0	71	98.6	0.0	98.6
Rift Valley	98	21	119	1,176	252	1,428	1,158	244	1,402	98.5	96.8	98.2
Bungoma	12	4	16	144	48	192	140	43	183	97.2	89.6	95.3
Busia	7	3	10	84	36	120	85	35	120	101.2	97.2	100.0
Mount Elgon	7	1	8	84	12	96	84	12	96	100.0	100.0	100.0
Kakamega	13	2	15	156	24	180	153	23	176	98.1	95.8	97.8
Lugari	6	2	8	72	24	96	71	24	95	98.6	100.0	99.0
Teso	5	3	8	60	36	96	56	36	92	93.3	100.0	95.8
Vihiga	11	3	14	132	36	168	131	36	167	99.2	100.0	99.4
Butere/Mumias	11	3	14	132	36	168	132	36	168	100.0	100.0	100.0
Western	72	21	93	864	252	1,116	852	245	1,097	98.6	97.2	98.3
National Total	506	231	737	6,072	2,772	8,844	5,869	2,554	8,423	96.7	92.1	95.2