MINISTRY OF HEALTH

2013 KENYA HOUSEHOLD HEALTH EXPENDITURE AND UTILISATION SURVEY

December 2014

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2013
Kenya Household Health Expenditure and Utilisation Survey

DECEMBER 2014

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FOREWORD

The *2013 Kenya Household Health Expenditure and Utilisation Survey (2013 KHHEUS)* is the third such study to be conducted in Kenya. The first was conducted in 2003 and the second in 2007. The first two studies informed the health policy process, particularly in relation to health financing reforms. The results of the first study informed the development of the "10/20" user fee policy at health centres and dispensaries and the National Social Health Insurance Fund Bill of 2004. Most importantly, the first two surveys provided national- and provincial-level data related to health-seeking behaviour, including out-of-pocket payments for healthcare.

Under the *2010 Constitution*, health service delivery is devolved to county governments. This therefore requires the production of county-level data to inform county-level policy making, planning, and budgeting. The *2013 KHHEUS* is the first study in Kenya to attempt to disaggregate data by county.

This report presents the findings of this survey, with a special focus on healthcare service use, out-of-pocket spending on health, factors that influence healthcare use and expenditure, and health insurance coverage. In addition, the report highlights the trends on healthcare utilisation and expenditure from 2003 to 2013.

It is generally acknowledged that the meaningful formulation of policies can only be achieved with readily available and properly documented research. It is therefore expected that the survey findings will be used by health planners, policymakers, and other stakeholders to evaluate healthcare service utilisation and expenditure trends in order to formulate appropriate policies and programmes to improve the health status of Kenyans.

James W. Macharia
Cabinet Secretary
Ministry of Health

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The *2013 Kenya Household Health Expenditure and Utilisation Survey* represents the continued effort and commitment by the Ministry of Health (MoH) to ensure the availability of data on trends on health service utilisation and out-of-pocket spending. This data is primarily intended for use by key government ministries, departments, agencies, and other health sector stakeholders to inform policy and planning.

The survey was supported by the United States Agency for International Development (USAID) through the Health Policy Project and implemented by the Ministry of Health in conjunction with the Kenya National Bureau of Statistics (KNBS). The survey was conducted as part of the overall National Health Accounts framework.

In this regard, we would like to thank the Director General of KNBS, Zachary Mwangi, for technical collaboration. Thanks also to KNBS staff for organising the survey and contributing their expertise in sampling, data collection, and setting up the data processing procedures and analysis, which was extremely efficient.

We would also like to express our appreciation to the field coordinators, county statistical officers and supervisors, survey interviewers, data analysts (Paul Waweru and Samuel Kipruto), data entry personnel, and data editors, whose dedicated efforts ensured high-quality and timely survey results. Thanks also to all of the respondents for contributing their time, and for giving the required information, that enabled us to collect high-quality data.

Special thanks go to USAID/Kenya, who provided the funds required to undertake this survey. We also thank Stephen Muchiri, Project Director and Thomas Maina, Senior Health Financing Advisor of the Health Policy Project for their support in the implementation of this survey. We are also grateful to other Health Policy Project staff, who efficiently coordinated administrative activities for the survey and edited the report.

Finally, we would like to thank Elkana Ong'uti, Chief Economist and Head of the Division of Policy and Planning, MoH who provided overall coordination of the survey. Mr. Ong'uti was supported by a strong technical working group led by Geoffrey Kimani, Deputy Chief Economist, MoH. Many individuals and institutions also made valuable contributions to the success of this survey, of which we are grateful.

Dr. Khadijah Kassachoon
Principal Secretary
Ministry of Health

EXECUTIVE SUMMARY

This report summarises the results of the *2013 Kenya Household Health Expenditure and Utilisation Survey (2013 KHHEUS)*, a national and county representative sample survey. The survey explored the health-seeking behaviour, use of healthcare services, out-of-pocket health spending, and health insurance coverage of Kenyan households. The Kenya Ministry of Health (MoH), with support from the USAID-funded Health Policy Project and in conjunction with the Kenya National Bureau of Statistics (KNBS), conducted the *2013 KHHEUS* to provide critical evidence to inform the development of the new health financing strategy. Survey findings will also inform policy decisions related to the future universal health coverage and the National Hospital Insurance Fund. The *2013 KHHEUS* also provides information that supports the wider national health accounts estimation process.

Survey Methodology

The *2013 KHHEUS* sampling strategy was designed to generate national and county estimates for all survey areas. The National Sample Survey and Evaluation Programme (NASSEP) master sample, which was developed using a multistage sampling design and maintained by KNBS, was used to select the representative clusters and households. Using the master sample, a total of 33,675 households were drawn from 1,347 selected clusters and divided into 814 (60%) rural and 533 (40%) urban clusters.

This sample was constructed to allow for estimates of key indicators at national and county levels for each of the 44 counties (covered by the survey), as well as for urban and rural domains. At the time of the survey, the KNBS had not updated the NASSEP master frame to include Mandera, Wajir, and Garissa counties, so these counties were not included in the survey.

Key Findings

Social, economic, and demographic characteristics of households

The survey collected socioeconomic and demographic information which influences healthcare consumption and expenditures. The results showed some notable differences between urban and rural households in terms of wealth, sex, age, employment, and education levels.

At the time of the survey, about 66 percent of Kenya's population lived in rural areas.[1] The survey illustrated a demographic trend characterised by a youthful population; at the time of the survey nearly 42 percent of the population was under 15 years old and just under four percent were 65 years and older.

In terms of education levels, the survey reported high levels of illiteracy, with about 19 percent of the population reported as having no formal education. Among those with some education, there were some notable differences in education levels attained: 55 percent of the population had primary-level educations, approximately 20 percent post-primary/secondary, and just over six percent college and university educations. Marked differences in terms of education levels were also noted between urban and rural populations, with higher levels of education among urban populations.

Over half of the targeted population (58.5%) was in some form of employment (informal or formal sector) and five percent were seeking employment. The remaining respondents were homemakers (11.7%), students (19.6%), or "other" (5.2%).

[1] This excludes the North Eastern region (Garissa, Mandera, and Wajir counties).

Health status and service utilisation profiles

- **Self-reported illness:** Overall, just over 19 percent of household members reported having been ill during the four weeks preceding the survey. The level of reported illness was higher than what was reported in 2007 (15.4%) and 2003 (17.4%). Overall, malaria and diseases of the respiratory system, including pneumonia, were the most common illnesses reported.

- **Self-assessment of health status**: Most household members rated their health status as "good" (59.1%) or "very good" (25.8%) with minimal variations between male and female. Only a small proportion of household members (3.4%) reported their health status as "poor."

- **Utilisation of outpatient services:** Of the approximately 19.0 percent of individuals who reported illness during the four weeks preceding the survey, 87.3 percent reported that they had consulted a healthcare service provider. On average, this translated to about 27 visits (in four weeks) per 100 people, or 139 visits per 100 sick people.

  A steady increase was observed in the proportion of people with illness and those seeking outpatient healthcare services over the 10-year period covered by the three surveys: from 77.2 percent in 2003, to 83.3 percent in 2007, and 87.3 percent in 2013.

  Wealthy individuals, those in the richest wealth quintile, were more likely than poorer individuals to consult a healthcare service provider when ill, although the difference was small. In the four weeks preceding the survey 86 percent of the poorest individuals consulted a provider when sick, compared with 89 percent of the richest.

  The average number of visits to a health provider (utilisation rate) per capita, per year increased by 35 percent: from 2.6 visits per capita, per year reported in 2007 to 3.1 in 2013. In 2003, an average of 1.9 visits per capita, per year was recorded.

  The survey results demonstrated that, on average, females accessed healthcare services more often than males. Females made four visits per capita, per year compared to three visits by males. Kenyans in the richest wealth quintile reported a slightly higher per capita outpatient visits per year (3.7 visits) than those in the poorest wealth quintile (3.2 visits), indicating that inequity in access to outpatient care remains a concern for the country.

  As in years past, the public sector continued to be the main provider of outpatient healthcare services, accounting for about 58 percent of all visits. Private clinics and pharmacies were the main private providers, accounting for a combined 23 percent (22.9%) of all outpatient visits.

- **Choice of provider by residence and wealth quintile:** People residing in rural areas were more likely to use public sector providers (65.3% of visits) than those in urban areas (43.2% of visits). The survey also observed inter-county variations in the use of health facilities for outpatient care, with Kirinyaga and Migori counties reporting the highest visits per capita (4.8) and Marsabit county reporting the lowest (1.2). The survey also showed that those in the poorest quintile were more likely to use public health facilities than those in the richest quintile. Those in the poorest quintile made 69.9 percent of outpatient visits in public health facilities, compared to 36.3 percent of the richest quintile.

- **Utilisation of inpatient services:** The proportion of the population who were admitted to hospital in the year preceding the survey rose from 1.5 percent in 2003 to 2.5 percent in 2013. There was also an increase (from 0.5% in 2007 to 0.6% in 2013) in the proportion of those whose illness or condition required hospitalisation, but who were not admitted due to a variety of reasons, including cost. Inpatient service utilisation rates also increased from 15 admissions per 1,000 population in 2003 to 38 admissions per 1,000 population in 2013. This implies that there was improved access to health services over the 10-year period of the three surveys.

  The results also showed that the elderly and those in the richest wealth quintile were more likely to utilise inpatient care: 83 and 56 admissions per 1,000 population for the elderly (65 years and older) and the wealthiest respectively. Conversely, the youngest (under five) and

the poorest had 45 and 28 admissions per 1,000 population respectively. The survey also found utilisation rates differed between females and males, with females reporting 48 admissions per 1,000 population compared to 27 for males.

Similar to outpatient care, public facilities were the key provider of inpatient care, accounting for nearly 56 percent of all admissions in 2013. Individuals in rural areas were more likely to use public providers for inpatient services (59.8%of admissions) than those in urban areas (50.7%). The survey also showed that the poorest populations were more likely to use public facilities for inpatient care (66.5% of admissions) than the richest population (43.3%). The average length of stay has decreased over the last decade from 8.5 days in 2003 to 6.7 in 2013.

The survey also found notable county variations in the consumption of inpatient services from public health facilities. Only 16 counties reported admission rates higher than the national per capita average. These counties also reported higher proportions of individuals who required admission, which translates to higher numbers of admission per 1,000 population. Homa Bay, Busia, Nairobi, Kajiado, Kisumu, and Kirinyaga counties reported high admission rates ranging from 50 to 60 per 1,000 population. Uasin Gishu, Makueni, Kilifi, Tana River, and Baringo counties each reported very low admission rates, less than 20 per 1,000 population.

Healthcare expenditure

For healthcare expenditure estimates, the 2003 and 2007 figures have been adjusted for inflation and population increase to facilitate comparison with 2013 expenditure estimates.

- **Outpatient services:** Over the 10-year period between the first and third surveys, out-of-pocket spending declined in nominal terms, from KShs 61.5 billion in 2003 to KShs 43.9 billion in 2007, and then rose to KShs 62.1 billion in 2013, an increase of about 42 percent. The average per capita spending for all health services (inpatient and outpatient) was KShs 1,609 in 2013, compared with KShs 1,181 in 2007 and KShs 1,913 in 2003.

  Outpatient care accounted for approximately 78 percent (KShs 48.4 billion) of the total out-of-pocket spending on health, while inpatient services accounted for the rest (21.6%).

  The average annual per capita spending on outpatient care was estimated at KShs 1,254. However, it varied greatly by demographic characteristics. For instance, females spent an average of KShs 1,469 on outpatient care compared to KShs 1,026 for males. Urban households spent on average KShs 1,733 compared to KShs 1,003 for rural households. On average, older segments of the population spent more on outpatient care than youth, with those 65 years and older having spent KShs 3,668, compared with KShs 1,783 for children under five years of age. Additionally, wealthy households spent more on outpatient care than poor households (KShs 2,263 among the wealthiest households compared to KShs 703 among the poorest). On average, per capita spending on outpatient care for individuals with primary education was KShs 1,072, compared to KShs 1,647 for those with college and university educations.

  There was also considerable variation between counties. On average, Kajiado, Nairobi, Mombasa, and Kirinyaga counties spent above KShs 2,000, while Siaya and Turkana counties spent KShs 500.

- **Inpatient services:** Annual average per capita spending for inpatient services increased from KShs 343 in 2003 to KShs 505 in 2007. In 2013, annual average per capita spending for inpatient services declined to KShs 355. However, variations were observed in 2013. Females spent, on average, KShs 400 compared to KShs 303 for males. The urban population spent an average of KShs 546 per capita on inpatient care compared to KShs 256 for the rural population, indicating a higher purchasing power among those residing in urban settings.

  Per capita spending on admissions also increased with levels of income/wealth. The richest wealth quintile spent KShs 928 per capita while the poorest spent KShs 136 per capita. On average, per capita spending on inpatient care for individuals with post-primary/secondary

education was KShs 392, compared to KShs 1,150 for those with college and university educations.

The survey also reported wide variations in per capita spending on inpatient care by county, with 15 counties spending more than the national average. For example, Nairobi county spent the most of any county at KShs 980, while Kilifi county spent the least (KShs 36 per capita).

- **Catastrophic health spending:** The proportion of households reporting catastrophic spending on health fell from 11.4 percent in 2007 to 6.2 percent in 2013. Despite this decline, thousands of Kenyan households continue to be pushed into poverty through health-related expenses.

Health Insurance Coverage

- **Insurance coverage:** In 2013, only about one in every five Kenyans (17.1%) had some form of health insurance coverage. This shows an improvement from 9.7 percent and 10 percent coverage in 2003 and 2007, respectively. The National Hospital Insurance Fund (NHIF) covered 88.4 percent of those insured, while private insurance covered 9.4 percent. Community-based and other forms of insurance coverage covered 1.3 percent and 1.0 percent, respectively. Insurance coverage is higher among urban populations (26.6%) compared with rural populations (12.1%). NHIF dominated in both the rural and urban areas at 92.2 percent and 85.2 percent, respectively. Private insurance was the second most prolific at just over 4 percent among those living in rural areas and nearly 14 percent among urban residents.

  Health insurance was also seen to be associated with wealth status. The population in the richest wealth quintile reported higher coverage (41.5%) compared to those in the poorest quintile (2.9%). Among all income groups, the majority of Kenyans were covered by NHIF (92.9% of the poorest and 83.0% of the richest quintiles). Community-based insurance covered mostly the middle wealth quintile (2.8%), whereas private insurance mostly covered the richest income group (17.0%).

  Wide variations in insurance coverage between counties were also observed. Coverage was highest in Kiambu (34.0%), Nyeri (32.9%), Nairobi (31.9%), Kericho (31.5%), Kirinyaga (29.0%), Bomet (25.4%), and Laikipia (23.1%). It was lowest in Lamu (6.7%), Samburu (6.7%), Trans-Nzoia (5.4%), Tana River (5.1%), Kwale (4.6%), Turkana (3.0%), and Marsabit (1.8%).

- **Service utilisation of insured and uninsured:** For outpatient services, both insured and uninsured persons reported almost the same number of per capita visits (3.2 and 3.0 visits respectively), indicating that insurance was not significant in explaining the demand for outpatient care. However, for inpatient services, the insured had a higher utilisation rate (76 admissions per 1,000 population) compared with the uninsured (30 admissions per 1,000 population), demonstrating that in some instances insurance enhances access to healthcare.

ABBREVIATIONS AND ACRONYMS

ALOS	average length of stay
EA	enumeration area
HPP	Health Policy Project
KHHEUS	Kenya Household Health Expenditure and Utilisation Survey
km	kilometre
KNBS	Kenya National Bureau of Statistics
KShs	Kenya Shillings
MoH	Ministry of Health
NASSEP	National Sample Survey and Evaluation Programme
NHA	National Health Account
NHIF	National Hospital Insurance Fund
OOP	out-of-pocket
SHA	system of health accounts
SPSS©	Statistical Package for Social Sciences
THE	total health expenditure
TWG	technical working group
USAID	United States Agency for International Development
WHO	World Health Organization

CHAPTER 1: INTRODUCTION AND METHODOLOGY

Background

The *2013 Kenya Household Health Expenditure and Utilisation Survey (2013 KHHEUS)* was the third comprehensive national survey in a series of similar surveys. Each survey was undertaken to provide information on the health-seeking behaviour and out-of-pocket (OOP) spending of Kenyan households. The surveys also assessed health insurance coverage as part of the overall National Health Accounts estimation process. The 2013 survey adopted the same methodological approach used in the 2003 and 2007 surveys, allowing for a comparison of how healthcare utilisation, spending on health, and health insurance coverage have changed over the past decade. However, while the *2013 KHHEUS* was designed to produce estimates at both the national and county levels in view of devolution, the previous studies generated estimates at the national and provincial levels.

This report highlights the findings in three areas: health services use, out-of-pocket expenditures on health, and health insurance coverage across Kenya. Household OOP expenditure includes direct expenditures on outpatient services for curative and preventive purposes and routine health expenditures. In addition, households may incur direct non-medical expenditure on activities related to the health-seeking behaviour of households, such as transportation to and from the healthcare facility. These direct non-medical expenditures are not included in the estimation of the OOP spending on health by households.

Objectives of the Survey

The primary purpose of the *2013 KHHEUS* is to provide policymakers, health planners, and other stakeholders with comprehensive information on the type and frequency of health services use, the level and distribution of OOP health spending, and the factors that influence the use and expenditure of health services.

Specifically, the objectives of the survey are to

- Determine the pattern of healthcare services utilisation;
- Estimate the utilisation rates of health services by those reporting illness by socioeconomic and demographic characteristics;
- Analyse the pattern and choice of providers used for outpatient and inpatient health services by socioeconomic and demographic characteristics;
- Estimate the level of household out-of-pocket spending on health services;
- Identify the different sources of household funds used to meet healthcare expenditures;
- Obtain perceptions on quality of care for different types of health providers; and
- Estimate the proportion of the population covered by health insurance.

The results will contribute to policy decisions, planning, and monitoring and evaluation for the development of the health sector at both the national and county levels.

Survey Organisation

The *2013 KHHEUS* was conducted by the Ministry of Health (MoH), in conjunction with the Kenya National Bureau of Statistics (KNBS). The KHHEUS Technical Working Group (TWG), comprised of representatives from the MoH (Division of Policy and Planning and other divisions), the KNBS, and the USAID-funded Health Policy Project (HPP), oversaw all technical aspects of the survey planning and implementation.

Structure of the report

The survey report is organised into five chapters. Chapter 1 presents the introduction and survey methodology, while Chapter 2 describes household socioeconomic and demographic characteristics. Chapters 3 and 4 examine household health status, service utilisation profiles, and health expenditures. Chapter 5 focuses on the extent of health insurance coverage. The annexes provide additional information, including detailed tabulations of key indicators by different population groups.

Survey Methodology

Design and sampling

The *2013 KHHEUS* was designed as a household-based survey. The National Sample Survey and Evaluation Programme (NASSEP) master sample, which was developed on the platform of a multistage sampling design and maintained by KNBS, was used to select the representative sample. Using this master sample, a total of 33,675 households were drawn for this survey. This sample was constructed to allow for estimates of key indicators both at the national and county levels for each of the 44 counties covered, and for urban and rural regions. At the time of the survey, KNBS had not updated the NASSEP master frame to include Mandera, Wajir, and Garissa counties, so these three counties were not included.

Sample and allocation of clusters

By using a sample design that grouped households into clusters, the survey was able to collect precise data at both the national and county levels. A total of 1,347 clusters were selected and divided into 814 (60%) rural and 533 (40%) urban clusters (Table 1.1). In each cluster, a systematic sample of 25 households was selected. Annex 1.1 provides further details.

Table 1.1. Distribution of Households by Place of Residence, 2013

Description	Cluster Type			Household		
	Rural	Urban	Total	Rural	Urban	Total
Number	814	533	1,347	20,350	13,325	33,675

Data collection instrument

A comprehensive questionnaire, similar to the one used in the 2003 and 2007 surveys, was adopted with minimal adjustments. The content of the questionnaire was based on the objectives of the survey, as approved by the KHHEUS TWG. The questionnaire was customised to be policy-relevant and to collect information to satisfy emerging issues in the health sector. After a period of training and pre-testing, the questionnaire was refined and finalised.

The questionnaire was organised into eight sections (outlined in Table 1.2) to collect information on all illness episodes, the use of health services in the four weeks preceding the survey, and the corresponding health expenditures. In addition, information on inpatient service use and related health expenditures during the 12 months preceding the survey was collected. The survey also collected information on household characteristics and health insurance coverage.

Table 1.2. *2013 KHHEUS* Questionnaire Sections and Units Covered

Section of Questionnaire	Unit Covered
General information about the household and its members	Per household member
Health status of household members	Per household member
Information on characteristics of the household's dwelling unit and household possessions	Per household
Reported illness in the four weeks preceding the survey, use of curative and preventive services, and related expenditures on health in the last four weeks	Completed for each person who had been sick, had used health services, or had spent any money on healthcare in the four weeks preceding the survey
Admission (inpatient services) and expenditures on health in the 12 months preceding the survey	Completed for each person who had been hospitalised in the 12 months preceding the survey (regardless of whether they spent any money on inpatient care)
Housing characteristics	Per household
Water sources and sanitation facilities for households	Per household
Health insurance coverage of household members and type of coverage	Per household member

The survey was administered through interviews with the heads of the household, or a mature member of the household who could provide the information required.

Training of data collectors

The goal of training was to produce a competent survey implementation team. Two levels of training were conducted. First, a training-of-trainers was undertaken for 16 trainers. The 16 trainers then trained the survey implementation team, comprised of 22 coordinators, 88 supervisors, and 132 interviewers. This training lasted for six days (July 3–8, 2013) and was devoted to the household questionnaire. Overall, the training covered

- General training related to basic interview techniques
- Special sessions on how to fill out the survey questionnaire
- Opportunities for role play and mock interviews
- Field practice conducted in locations not selected for the survey

Data collection

After the training, the implementation team dispersed to the counties to begin fieldwork. Data collection took place from July 9–August 14, 2013. Fieldwork was closely monitored to ensure that the exercise was conducted as planned. The TWG prepared a fieldwork supervision plan to guide the survey coordinators during field supervisory visits.

Supervision and quality control visits helped to identify misunderstandings and mistakes among interviewers that were then corrected. These visits were conducted throughout the duration of data collection and were used to retrieve the completed questionnaires from the field.

Data quality management, processing, and analysis

The study supervisors and a team of coordinators conducted inspection visits to the field to ensure quality control during the survey implementation. County statistical officers also conducted preliminary editing to ensure that the data was of high quality. The completed questionnaires were

then handed over to the respective coordinators for delivery to a central point in Nairobi as soon as a sufficient number of surveys were accumulated. In Nairobi, incoming questionnaires were checked for consistency by a central control team. Any identified problems were then followed up by the field teams.

Preparation for data processing started with the development of a data entry programme using CS-Pro© software. The programme has a number of built-in consistency checks to minimise errors. Data entry clerks were selected and trained for five days to ensure they understood the survey instrument and the software used for data entry.

Data from all questionnaires was then entered into the programme and re-entered by a different data entry team for verification and quality control purposes. Data editors then reviewed the entered data for consistency and completeness, and corrected any errors they found. Internal consistency verification and secondary editing were also undertaken for completeness.

The *2013 KHHEUS* used the NASSEP V sampling frame developed from the 96,000 census enumeration areas (EA) with county boundaries. An EA consists of a village, part of a village, or a combination of villages. The primary sampling unit for NASSEP V is a cluster, which consists of one or more EAs and has, on average, 100 households.

The NASSEP V frame was implemented using a multi-tiered structure, in which a set of four independent samples (C1, C2, C3, and C4) were developed. Each of these four independent samples is representative at the residential (i.e., urban/rural) and county levels and contains 1,340 clusters, totalling 5,360 clusters in the full NASSEP V sampling frame.

The *2013 KHHEUS* was not self-weighted and hence weighting was required. Survey weights are used to make sample data representative of an entire population. Weights therefore are applied to adjust for differences in the probability of the selection and interview of the cases in a sample, either due to design or other factors.

The design weights incorporated the probabilities of a selection of the 5,360 clusters into the NASSEP V sample frame and the probability selection of 1,347 clusters of NASSEP V. To allow for the comparability of results between the 2003, 2007, and 2013 surveys, standard weighting procedures were used similar to those used in previous KNBS-conducted surveys. Design weights were adjusted for non-response at cluster, household, and individual levels. All household members captured in the household questionnaire were assigned the same household weight. All individuals within a cluster who participated in the survey were assigned the same cluster-specific weights for individual interviews.

The estimation of population sizes provided a useful measure of the number of individuals affected by a particular outcome or accessing particular services. The weights accounted for the population size of the referent population. The estimates of population sizes described in this report were the weighted frequencies of persons with the characteristics of interest. This report presents the results of all descriptive and multivariate analyses using the *2013 KHHEUS* data and applying the appropriate weighting procedures.

The data analysts, in conjunction with the report writing team, developed the tabulation plans for the key indicators used in this report. The tabulations were generated using the Statistical Package for Social Sciences (SPSS©), as well as STATA© software. The outputs were then exported to Microsoft Excel© worksheets for formatting and eventual use. It should be noted that the standard errors for at least some variables in this report have not been generated.

Household wealth index quintiles

Wealth in this study is used to determine the relative economic status of the households surveyed. In order to measure it, a proxy index was created based on the survey responses from each surveyed

household. The wealth index assigned to each household was based on a weighted average of 75 variables in the dataset. These variables fall in the following categories:

- Type of dwelling
- Ownership of the dwelling
- Construction materials of the dwelling
- Source of cooking fuel
- Source of lighting fuel
- Household possessions/goods
- Source of water for household consumption
- Type of sanitation facility

The wealth index was then generated using the multivariate statistical technique (principal components analysis).

The wealth index has been shown to be consistent with other expenditure and income measures and can provide a useful measure in assessing inequalities in the use of health and other services and in health outcomes (Rutstein and Johnson, 2004). Principal components are weighted averages of the variables used to construct them. Among all weighted averages, the first principal component is usually the one that has the greatest ability to predict the individual variables that make it up, where prediction is measured by the variance of the index. The wealth index was therefore the first principal component of the 75 variables.

The generated index was then used to categorise the households into five quintiles:

1. Poorest
2. Second poorest (Second)
3. Middle
4. Fourth richest (Fourth)
5. Richest

CHAPTER 2: HOUSEHOLD SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

This chapter describes the population distribution of Kenya, estimated from the survey, according to selected socioeconomic and demographic characteristics. The national and county percentages were calculated based on the weighted number of respondents per cluster for the *2013 KHHEUS*. Since this was not a census, the statistical estimates generated may differ from those found in other sources.

Characteristics of the Household Population

Age, sex, and residence distribution

Age and sex are important demographic variables in the study of health-seeking behaviour and OOP spending by households. In all three years of the KHHEUS (2003, 2007, and 2013), the surveys collected information on sex and age for each household member. Annex 2.1 presents the percent distribution of the household population by selected background characteristics, including age, sex, level of education, marital status, employment, and place of residence, broken down by national and county level. Of the usual population[2] covered in the 2013 survey, 49.5 percent were males and 50.5 percent were females.

The survey reveals an age structure typical of a society with a youthful population. The data showed that, at the time of the survey, 42 percent of the population was under 15 years old and that 34 percent were ages 15–34. On the other extreme, only four percent of the population was 65 years and older. The youthfulness of Kenya's population has a number of implications, most notably that it is a highly dependent population with an increased demand for health, education, and other social services.

The results of the survey further showed that 61 percent of the population had never married and only 32 percent reported being married or living together. When the population is analysed by place of residence, the majority of the population (66%) live in rural areas while just over a third (34%) are in urban areas.

Table 2.1 shows the distribution of the estimated population by age, sex, and place of residence. Rural and urban areas showed similar patterns in age distribution, although some minimal differences were reported. Urban areas have a slightly higher proportion of youth (under 15 years old) while rural areas have a slightly higher proportion of those ages 15–44. With respect to sex, there are no pronounced differences between the proportions of population that are male and female by place of residence.

[2] Usual population refers to residents and visitors who spent the night preceding the interview in the household. This method of data collection allows analysis of the results for either the de jure (usual residents) or de facto (those present at the time of the survey) populations.

Table 2.1. Population Distribution by Place of Residence, Age, and Sex, 2013[3]

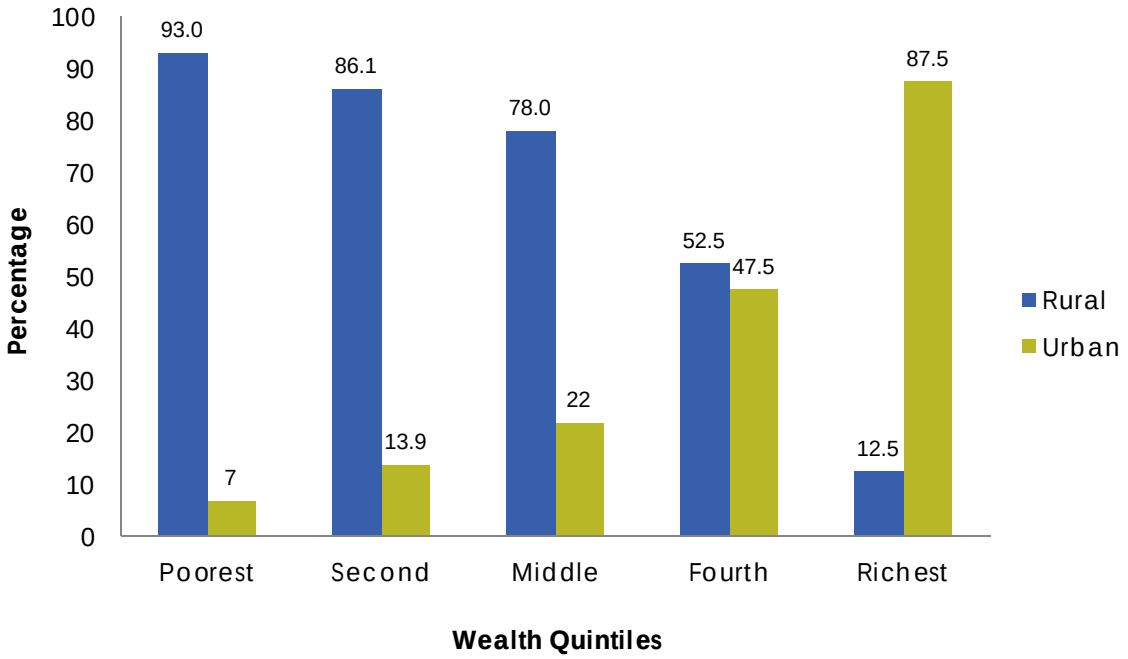
	Residence		Overall (% of the total population)
	Urban (%)	Rural (%)	
Sex			
Male	49.4	49.7	49.5
Female	50.3	50.6	50.5
Total	100	100	100
Age			
0–4	14	13	13.5
5–14	31	24	28.2
15–24	19	21	19.6
25–34	12	20	14.9
35–44	9	11	10.0
45–54	6	6	6.3
55–64	4	3	3.7
65+	5	2	3.7
Total	100	100	100
Number	13,259,242	25,361,149	38,620,391

Population by wealth index

Figure 2.1 and Annex 2.1 display the urban/rural distribution of households by wealth quintiles. The data show that wealth was not evenly distributed by residence. For example, 87.5 percent of the urban population was in the richest quintile and only 7 percent were in the poorest quintile. In contrast, 93 percent of the rural population was found in the poorest quintile and only 12.5 percent in the richest quintile. On average, households in the poorest quintile were larger and concentrated in rural areas, whereas households in the richest quintile had fewer members than poor households and in urban settings. These results demonstrate significant differences in wealth between urban and rural households, which may also be linked to differences in levels of education and access to employment.

[3] In this and subsequent tables, the totals for columns showing percentages may not equal the sum of components due to rounding in order to arrive at 100 percent.

Figure 2.1. Population Distribution by Residence and Wealth Index, 2013



Education of the household population

Several studies have proven that education is one of the key socioeconomic indicators that play a great role in influencing economic development of a country. The rate of healthcare service utilisation is also determined by education levels. For instance, individuals with college and university educations are expected to utilise more healthcare services than those with no formal education. The survey question on highest level of education completed was asked of all members of the household who were three years of age and older. The results showed that about 19 percent of the population had no formal education and that over half of the population had only a primary education. Further, 26 percent had attained post-primary/secondary educations and above. The results also showed noticeable variations in education levels between rural and urban areas, and between male and females.

Table 2.2 shows that in rural areas, the majority (59%) of the population had primary school educations and 22 percent had no education. In urban areas more people had post-primary/secondary education (28%) than college and university educations (12%).

Table 2.2. Population Distribution by Education Level, Residence, and Sex, 2013

Residence/Education Level		Sex		Overall (% of the total population)
		Male (%)	Female (%)	
Rural (%)	None	19	24	22
	Primary	60	58	59
	Post-primary/ secondary	17	15	16
	College and university	4	3	4

Residence/Education Level		Sex		Overall (% of the total population)
		Male (%)	Female (%)	
Urban (%)	None	12	14	13
	Primary	46	48	47
	Post-primary/ secondary	28	27	28
	College and university	13	11	12
Overall (% of the total population)	None	17	20	19
	Primary	55	55	55
	Post-primary/ secondary	21	19	20
	College and university	7	6	6
	Total	100	100	100
	Number	19,105,418	19,514,973	38,620,391

Employment status

Like education, employment is a reliable indicator of socioeconomic status. It also serves as a source of empowerment, particularly if it puts individuals in control of income. Employment is therefore a key determinant of the rate of healthcare service utilisation for household members. Data on employment was collected with a reference period of 12 months and for those 15 years and older.

The findings show that over half of the target population (58.5%) was in some form of employment (informal or formal sector). Five percent were seeking employment, while the remaining were homemakers (11.7%), students (19.6%), or "other" (5.2%) (see Annex 2.1).

Household heads and household size

It is also useful to look at the composition of households (financial, emotional, etc.) that may affect the allocation of resources available to its members. For example, in cases where women are heads of households, financial resources may be limited. Similarly, the size of the household may affect the well-being of its members. Where the size of a household is large, crowding can lead to health-related problems.

As shown in Table 2.3, households in Kenya are predominantly male-headed (70.6%). However, nearly a third of households (29.4%) are headed by women. Of those, nearly 32 percent of rural households and close to 26 percent of urban households are female-headed.

Table 2.3. Percent Distribution of Households by Head of Household Sex, Household Size, and Residence, 2013

Characteristics		Place of Residence		Overall (total population)
		Rural (%)	Urban (%)	
Household head by gender	Male	68.1	74.4	70.6
	Female	31.9	25.6	29.4
Total		100	100	100
Household size	1–3	33.7	51.4	40.9
	4–6	44.8	39.9	42.8
	7+	21.4	8.6	16.3
Total		100.0	100.0	100.0
Number		13,259,242	25,361,149	38,620,391
Mean size of households		4.7	3.6	4.2

The overall mean size of households is 4.2 members. However, nearly 41 percent of households are small (consisting of one to three people), and over 16 percent are large (seven people or more). Residence is strongly related to household size. On average, rural households have 4.7 household members, one more than the average urban household (3.6 members). Households with seven or more members are more common in rural areas (21.4%) than in urban areas (8.6%).

Further, the average household size is marginally smaller than the 4.5 persons per household observed in the *2007 KHHEUS*. In the 2007 survey, rural households had an average of 4.8 persons per household, and were slightly larger than urban households (3.6 persons).

CHAPTER 3: HOUSEHOLD HEALTH STATUS AND SERVICE UTILISATION PROFILES

Increasing access to healthcare services is a key element in improving the health of Kenyans. To do so, policymakers need information on people's access to healthcare services to plan new health policies. Survey data on the patterns of outpatient and inpatient service utilisation were analysed separately.

This chapter presents results from the survey related to health status and health service utilisation. Health status was measured through self-assessment. Utilisation of health services was assessed in the household questionnaire, where questions were asked of all sampled households. Information was collected to assess the prevalence of illness (four weeks preceding the survey) and hospital admissions (12 months preceding the survey).

Household Self-Assessment of Health Status

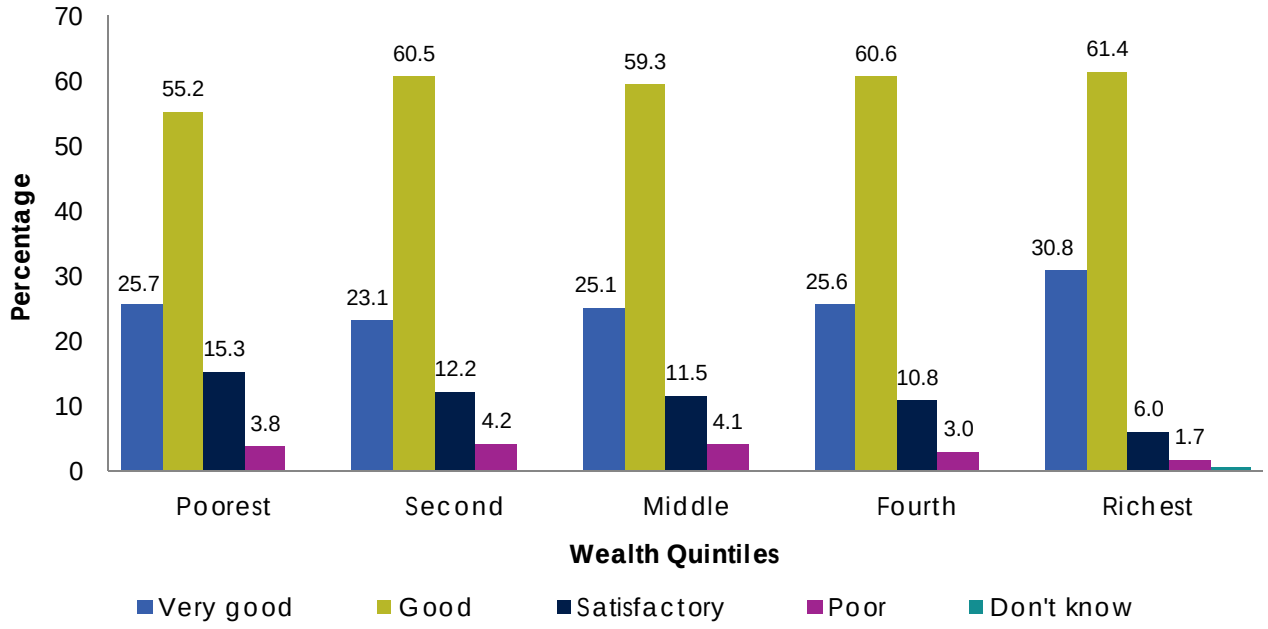
One of the most frequently used measures of self-assessed health status is a single question asking respondents to rate their overall health on a scale of "very good" to "poor," or "excellent" to "very bad." This simple global question provides a useful summary of how individuals perceive their health status. This survey used a scale of "very good" to "poor." Most household members rated their health status as "good" (59.1%) or "very good" (25.8%), with minimal variations between male and female. Only a small proportion of household members (3.4%) reported their health status as "poor" (Table 3.1).

Table 3.1. Trends in Self-Assessment of Health Status by Sex and Residence

Health Status	2003	2007			2013		
	Overall (% of the total population)	Male (%)	Female (%)	Overall (% of the total population)	Male(%)	Female (%)	Overall (% of the total population)
Very good	22.8	27.2	24.9	26.0	26.7	24.9	25.8
Good	60.9	58.5	59.1	58.8	59.4	58.8	59.1
Satisfactory	11.5	9.5	10.5	10.0	10.5	12.0	11.2
Poor	3.8	2.9	3.6	3.3	3.0	3.8	3.4
Don't know	1.0	1.9	1.9	1.9	0.4	0.5	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

A positive relationship between wealth quintile and an individual's self-assessed health status was reported in the survey, with the proportion of individuals reporting "very good" and "good" health status increasing with their wealth index quintile. Those who reported "satisfactory" and "poor" health decreased with wealth index. This indicates that self-assessed health status in poor households lagged considerably behind that of rich households (Figure 3.1).

Figure 3.1. Distribution of Self-Aassessed Health Status by Wealth Index, 2013



Utilisation of Outpatient Healthcare Services

The three rounds of the KHHEUS provide a good opportunity to explore how the utilisation of health services has changed over time. Individuals demand healthcare services when they perceive a need for medical care. Therefore, before examining the utilisation of outpatient services, the survey first explored the frequency of reported illness in the four weeks preceding the survey, the unmet healthcare need, and the reasons for not seeking healthcare despite reported episodes of illness. The survey also examined factors influencing decisions to bypass or choose a particular health service provider.

Each KHHEUS (2003, 2007, and 2013) adopted a four-week recall period for outpatient services. In all households visited, respondents were asked if any member of their household had been ill in the four weeks preceding the survey. Overall, the proportion of household members who reported illness over the four-week period fell from approximately 17 percent in 2003 to about 15 percent in 2007, but increased to just over 19 percent in 2013 (Table 3.2).

Table 3.2. Proportion of Population Reporting Illnesses in the Four Weeks Preceding Survey

Description	2003	2007	2013
People with some sickness reported (%)	17.4	15.1	19.3
People with no sickness reported (%)	82.6	84.9	80.7
Total population (millions)	32.1	37.2	38.6

The results indicated minimal differences in the overall incidence of reported illness between urban (20%) and rural (19%) populations. In terms of sex, the survey showed a significant difference between females (21.5%) and males (17.0%), indicating a higher perception of illness among females (Table 3.3).

The reported illness rate by different age groups reveals a high incidence of illness for the 0–4 age group and those 55 years and older. The high prevalence of reported illness among older segments of the population has important policy implications since many in this age group are not employed and

therefore reliant on government subsidies to finance their healthcare. A significantly higher percentage of people rating their own health as "poor" reported illness (50%) in the preceding four weeks compared to people rating their own health as "very good" (15%). Overall, differences between wealth quintiles in self-reported illness were small.

Table 3.3. Percent of Individuals Reporting Illness by Age, Sex, Wealth Quintile, and Place of Residence, 2013

Description	Place of Residence		Overall (%)
	Rural (%)	Urban (%)	
Sex			
Male	10.8	6.2	17.0
Female	14.2	7.3	21.5
Age			
0–4	17.3	11.4	28.7
5–14	10.6	4.9	15.5
15–24	7.5	5.0	12.5
25–34	9.1	7.1	16.1
35–44	13.0	7.8	20.8
45–54	17.1	7.4	24.4
55–64	22.5	7.2	29.7
65+	31.0	7.6	38.6
Wealth quintile			
Poorest	16.0	1.3	17.4
Second	16.9	2.8	19.6
Middle	15.2	4.3	19.5
Fourth	10.6	9.7	20.3
Richest	2.7	17.0	19.8
Total	19.0	20.0	19.3
Number	13,259,242	25,361,149	38,620,391

Reasons for not seeking treatment despite reporting illness

The most commonly reported reasons for not seeking healthcare, despite reported episodes of illnesses, were "high cost of care," "self-medication," "long distance to provider," and "illness not considered serious enough" (Table 3.4). Not seeking care due to high costs (21.4%) emerged as an important finding in the 2013 survey: however, this was a drop from what was reported in 2007 (37.7%) and 2003 (43.6%). In 2013, the most often reported reason for not seeking care was that the "illness was not considered serious enough" (39.3%). This, however, represents the respondent's perception of the seriousness of illness and may not indicate whether or not the illness was truly serious.

It is common for individuals who are ill to buy or use drugs that were prescribed for similar earlier episodes or buy drugs from chemists without a prescription. As such, the 2013 survey also reported a high prevalence of self-medication among the population as a reason for not seeking care despite reported episodes of illness (30.7%). While significant, this represented a decline from what was reported in 2007 (34.5%) and 2003 (37.2%).

Self-medication for minor illness based on sound information may have positive implications for health status. However, self-medication among poorly informed segments of the population may

result in a waste of household resources and, eventually, a drain on public resources if illnesses are treated late, after ineffective self-medication. Accordingly, these results suggest that public health authorities should pay attention to information and health education concerning self-medication.

Table 3.4. Reasons for Not Seeking Treatment Despite Reporting Illness

Reasons	2003 (%)	2007 (%)	2013 (%)
Illness not considered serious enough	0	0	39.3
Self-medication	37.2	34.5	30.7
High cost of care	39.4	37.7	21.4
Long distance to provider	16.4	11.2	1.8
Poor quality service	1.7	0.5	0.5
Religious/cultural reasons	1.2	3.1	0.1
Fear of discovering serious illness	1.2	0.2	0
Other reasons	3	12.8	6.2
Total	100	100	100

Total outpatient visits

The total number of outpatient visits made in the four weeks preceding the survey increased over the 10-year period from 4.8 million visits in 2003 to 9.1 million in 2013. A nearly 90 percent increase, this translates to an average of 24 visits per 100 people (122 visits per 100 sick people) compared with 15 visits per 100 people (85 visits per 100 sick people) in 2003 (Table 3.5).

Using the total number of outpatient visits (9.1 million) and assuming that the seasonal variation in the level of utilisation was not marked, the annual per capita utilisation rate for the population in 2013 translates to 3.1 visits per person, compared to 1.9 visits per person in 2003 and 2.6 visits per in 2007 (Table 3.5 and Figure 3.2). This indicates that the utilisation of outpatient services has gone up over time during the period under review, suggesting improvement in access to health services.

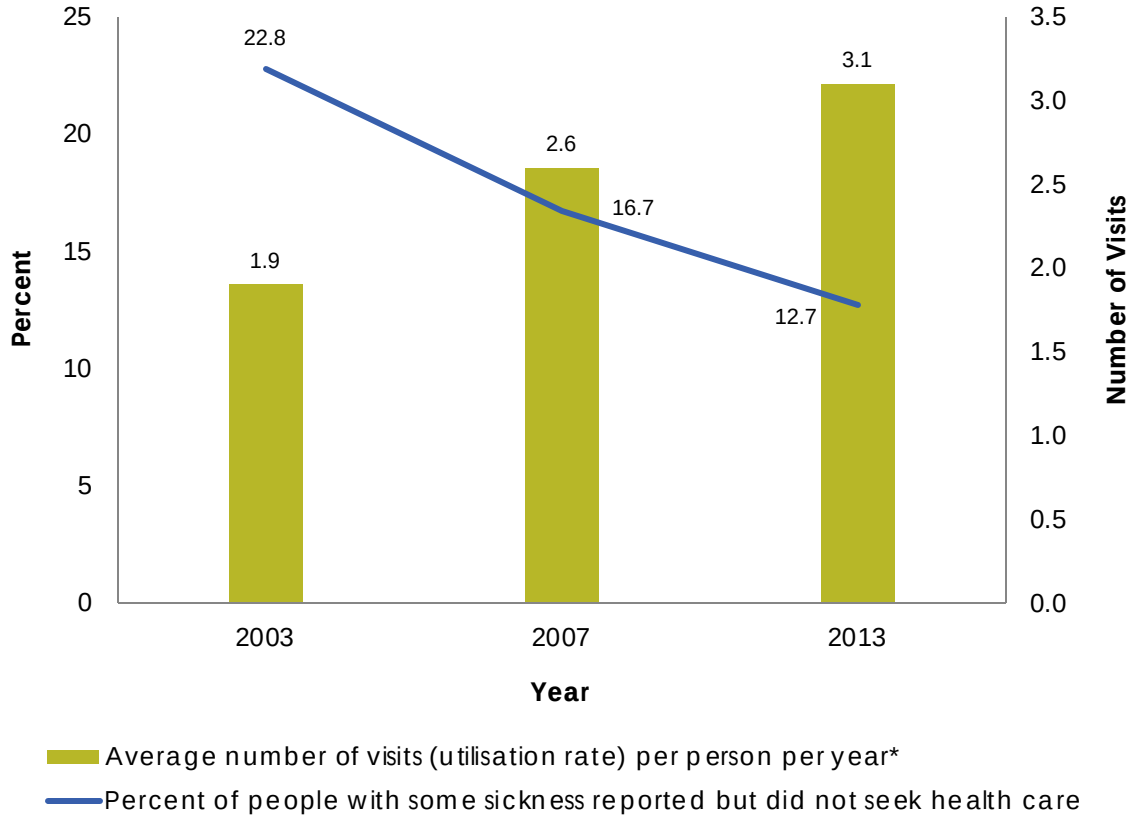
Table 3.5. Total Number of Visits and Utilisation Rates

Description		2003	2007	2013
Total number of visits made in 4-week recall period to all healthcare service providers (millions)		4.8	7.4	9.1
Percent of people with some sickness reported but did not seek healthcare		22.8	16.7	12.7
Average number of visits (in 4 weeks)	a) per 100 people	15	20	24
	b) per 100 sick people	85	132	122
Average number of visits (utilisation rate) per person per year*		1.9	2.6	3.1

Note: The calculation of this rate is based on the following formula:

Annual utilisation rate = Number of visits made in the preceding 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 total population.

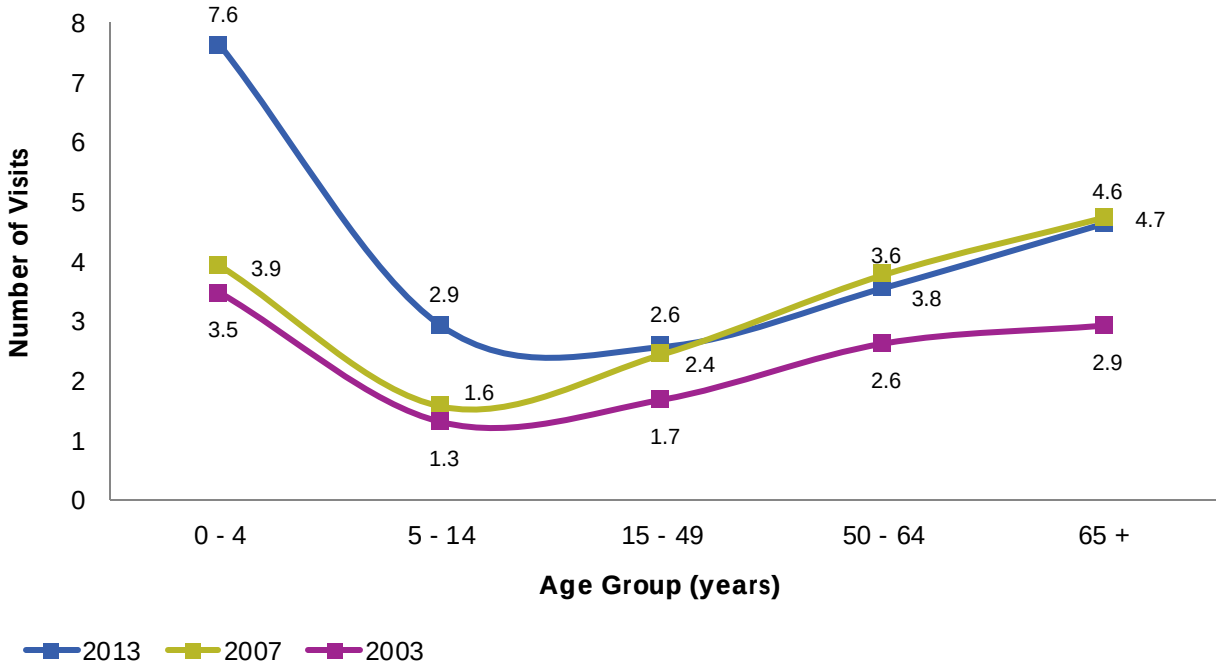
Figure 3.2. Average Utilisation Rates and Percent of People with Some Sickness Who Did Not Seek Care



Outpatient per capita utilisation rate by age group

Overall outpatient healthcare utilisation varies with age. As expected, children under age 5 and those 65 years and older consume outpatient health services more frequently than other age groups. The utilisation rate for these groups is 7.6 and 4.6 annual visits per capita, respectively (Figure 3.3). The 50–64 age group also has a high utilisation rate (3.6), which is above the national average of 3.1 visits per person per year.

Figure 3.3. Outpatient Utilisation Rate: Annual Number of Visits Per Capita by Age Group

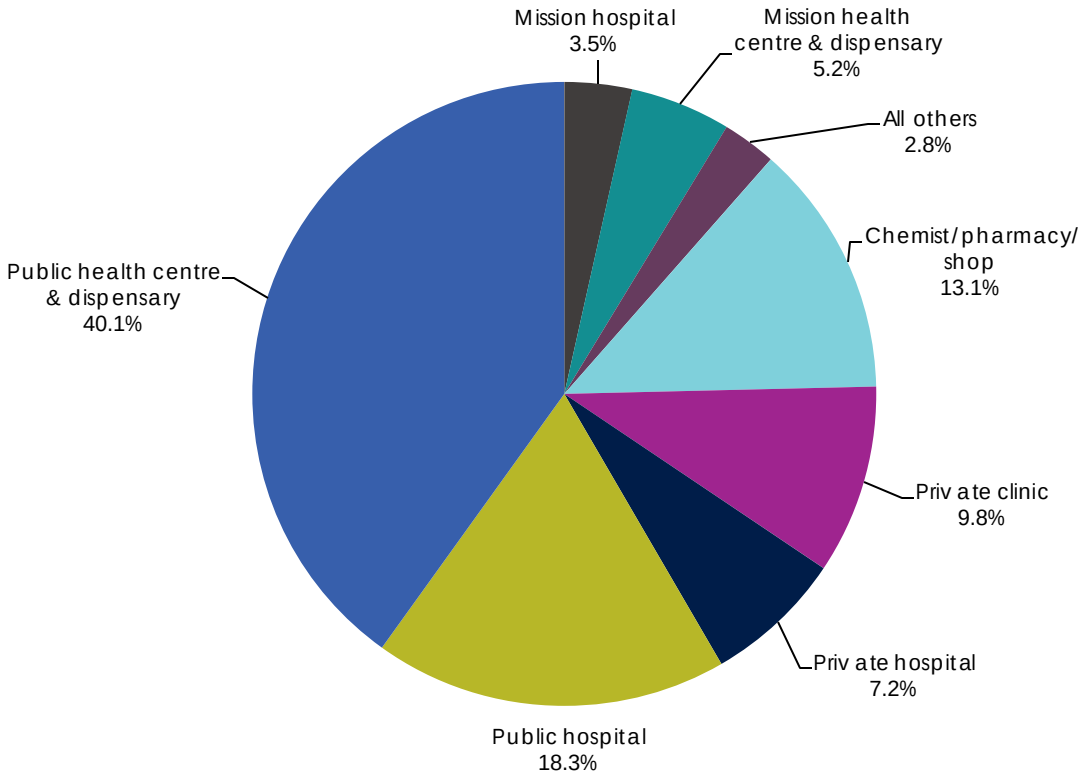


As seen in Figure 3.3, the annual number of visits per capita in 2013 decreased sharply from 7.6 visits for the 0–4 age group to 2.9 visits for the 5–14 age group and further dropped to 2.6 visits for those 15–49 years old. However, the annual number of visits per capita then rose to 3.6 visits for those 50–64 years old, and 4.7 for those 65 years and older. Similar patterns in the annual per capita visits by age group were reported in 2007 and 2003.

Outpatient visits by health provider type and ownership

A closer look at the utilisation of outpatient services by type of health provider and ownership shows a high dependency on public facilities. Over 58 percent of outpatient visits in 2013 were to public health facilities, with public health centres and dispensaries accounting for about 40 percent and public hospitals accounting for just over 18 percent of these visits (Figure 3.4). Dependence on public health facilities for outpatient services is significantly higher among rural populations (65.3%) than urban populations (43.2%). Annex 3.1 provides more details.

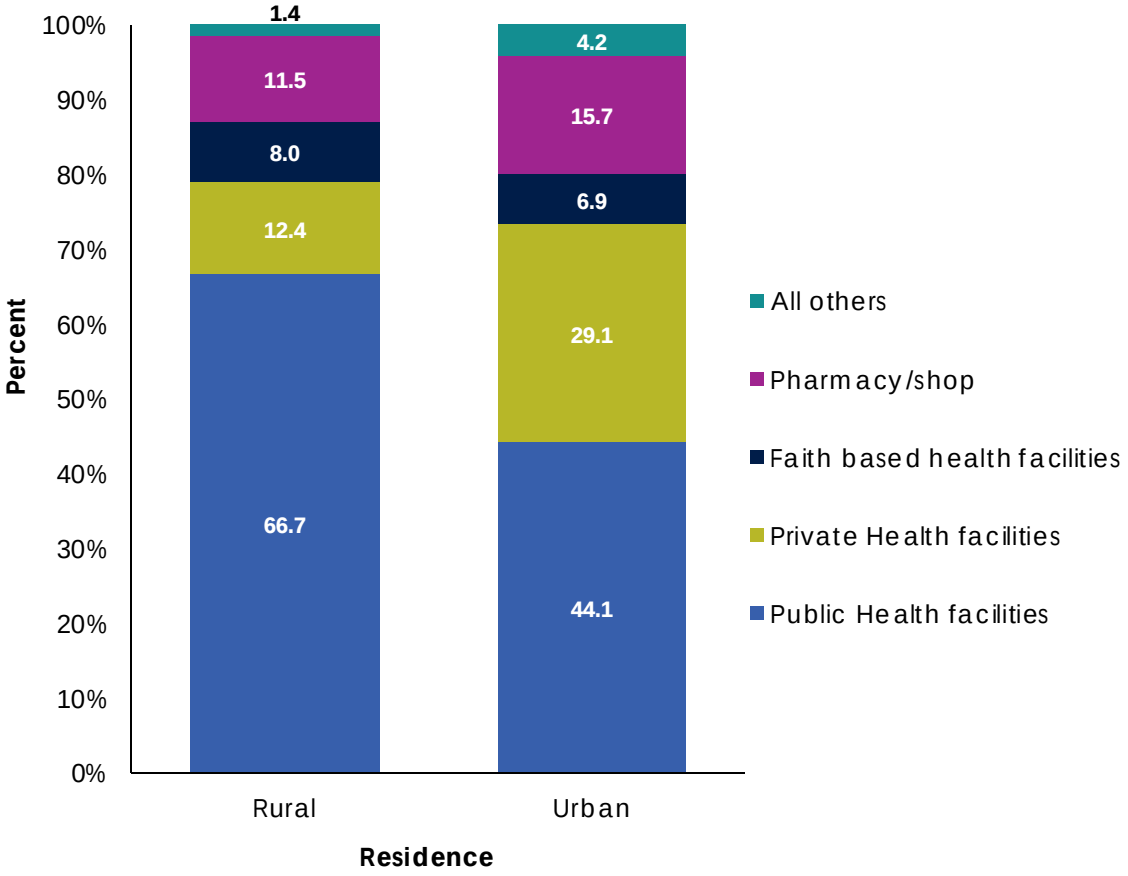
Figure 3.4. Main Providers of Outpatient Health Services, 2013



The survey found differences in the use of health facilities, with public health facilities accounting for 66.7% and 44.1% of total outpatient care visits in rural and urban areas, respectively. On the other hand, private health facilities accounted for 12.4 percent and 29.1 percent of the total outpatient visits in urban and rural areas, respectively.

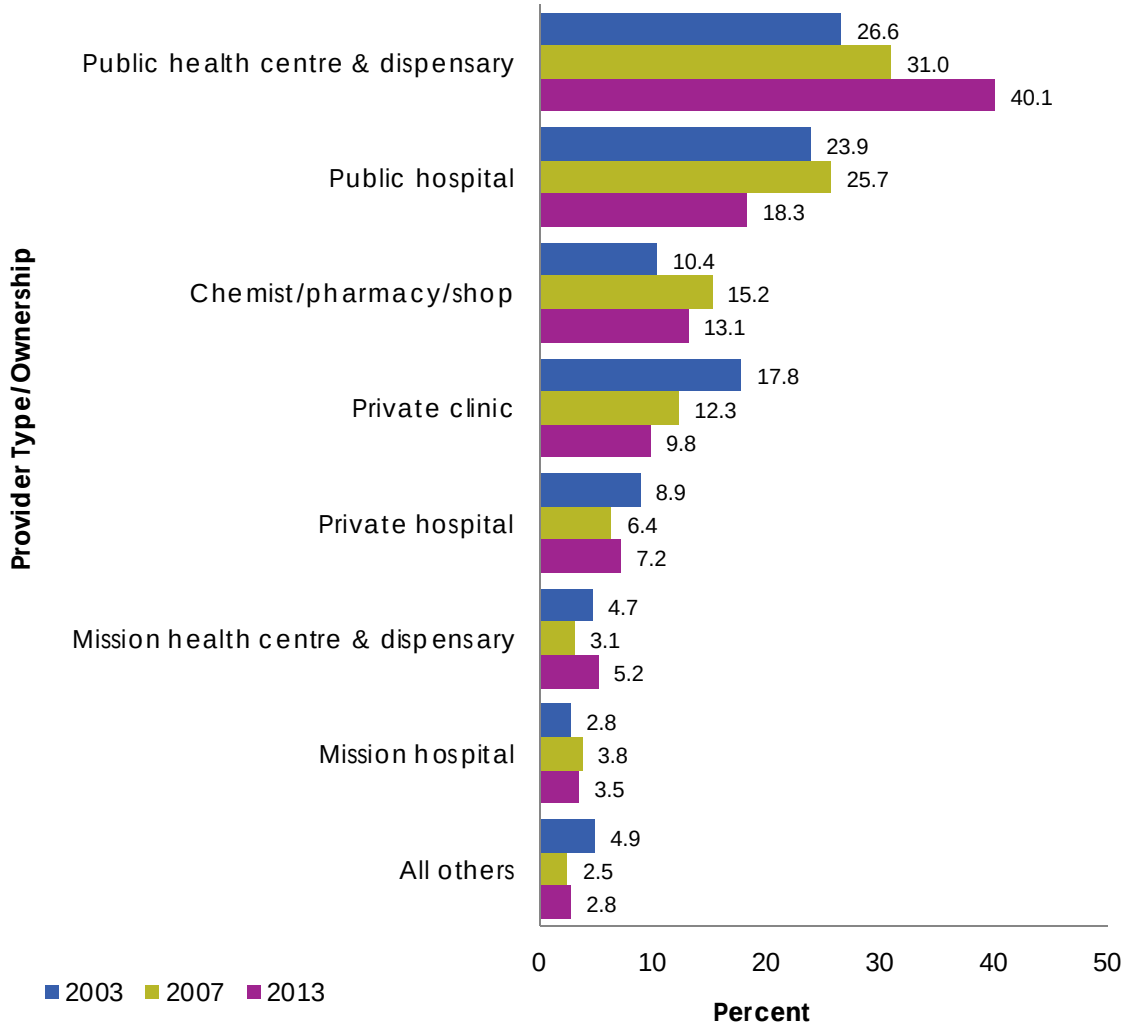
Of all health providers, private hospitals accounted for 13.0 percent of outpatient visits in urban areas and only 3.5 percent in rural areas. This implies that private health facilities (clinics and private hospitals) are a major provider of outpatient services in urban areas compared to rural areas (Figure 3.5).

Figure 3.5. Outpatient Health Visits by Type of Provider and Residence, 2013



Even though utilisation of outpatient services has increased by 90 percent from what was reported in 2003, the survey indicates a declining trend in the utilisation of outpatient services in public hospitals, which reduced by 30 percent from 2003 to 2013 (Figure 3.6). However, this was compensated for by an increase in the uptake of outpatient services in public health centres and dispensaries, which increased by 51.5 percent. This is a good indicator of a functioning referral system and of an improvement of the quality of care provided by the lower level facilities.

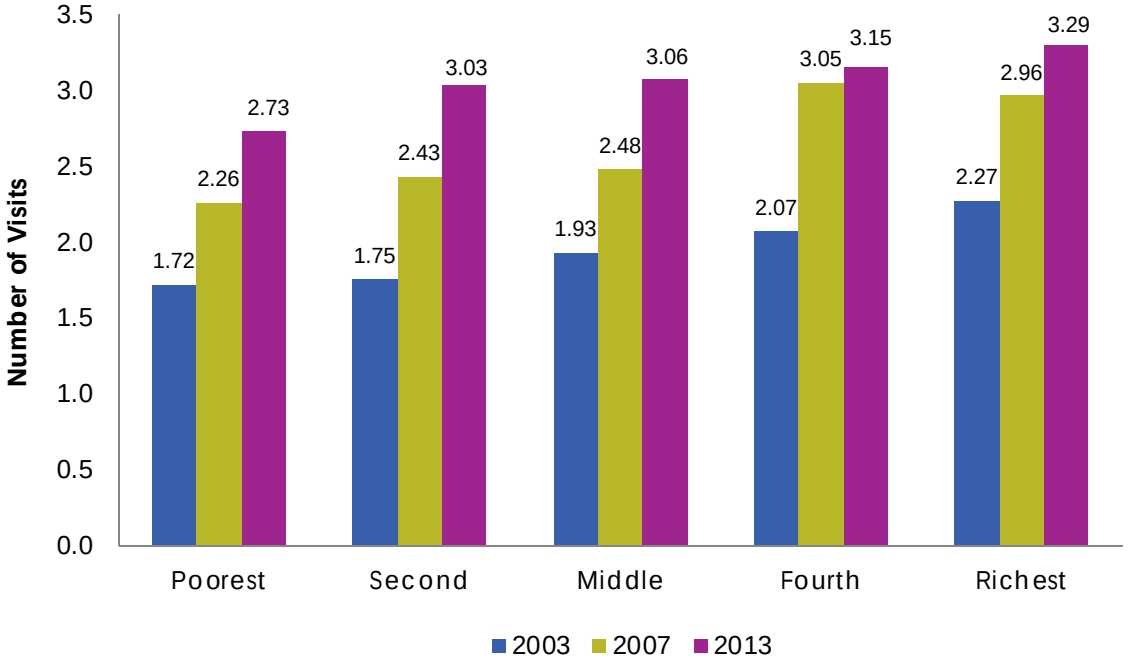
Figure 3.6. Trend Percent Distribution of Outpatient Visits by Provider Type



Outpatient visits by wealth index

Increases in the utilisation of health services is a measure of increased access to health services and is considered encouraging as long as individuals seek care from appropriate health providers. Overall, utilisation of outpatient services has increased marginally in all wealth quintiles during the 10-year period between the three surveys. The only exception is for the richest quintile that dropped slightly in 2007 (Figure 3.7). Moreover, inequalities appear to have marginally widened within each wealth quintile.

Figure 3.7. Per Capita Utilisation Rates for Outpatient Visits by Wealth Quintile



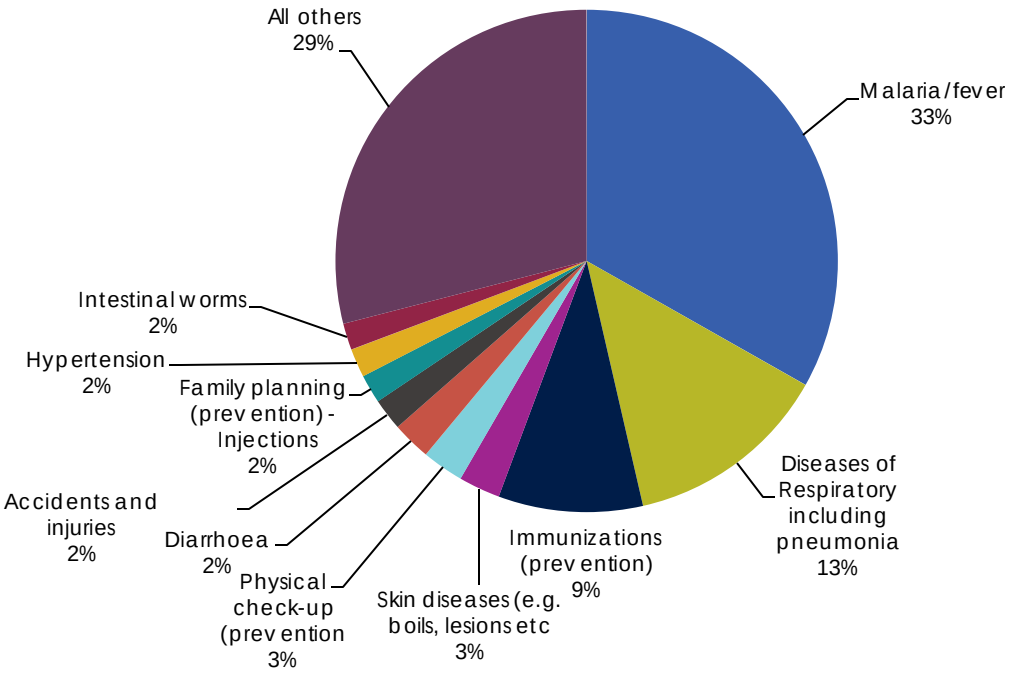
Reasons for seeking outpatient care

Among the leading causes of seeking outpatient services are malaria/fever and diseases of the respiratory system, including pneumonia. Malaria/fever accounted for a third (33%) of all outpatient visits to health service providers while diseases of the respiratory system accounted for 13 percent (Figure 3.8).

It should be noted that these conditions are self-reported and in many cases are not based on diagnoses by medical personnel. Although the proportions generated through self-reported illness may not reflect similar proportions reported through the routine health information systems, they are nevertheless informative because they show why individuals may have had contact with health providers.

Despite the weakness of self-reported statistics on the distribution of illnesses, in this particular case, they compare favourably with data from routine health information systems, which also indicate that malaria and diseases of the respiratory system are the leading causes of morbidity in Kenya.

Figure 3.8. Self-Reported Reasons for Seeking Outpatient Services (curative and preventive care), 2013



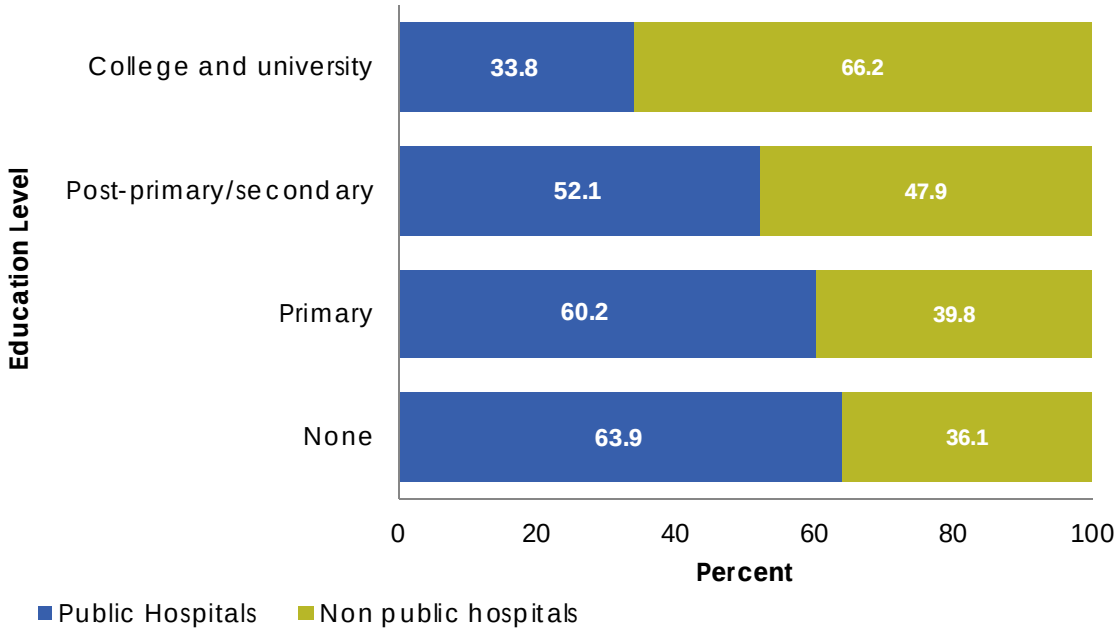
Utilisation of outpatient services by education level

There is considerable variation in the utilisation of outpatient services according to education level. Categorising all the health providers into only two groups, public (government) and non-public (private and faith-based hospitals, clinics, and chemists), the survey demonstrated that use of non-public facilities/providers increased with an individual's level of education.

The survey also found that the use of non-public facilities increased from almost 40 percent among those with primary level of education to approximately 66 percent for those with college and university level educations. While people with high levels of education generally have higher incomes, more highly educated people may also choose private sector facilities because of their perceived higher-quality of care (Figure 3.9).

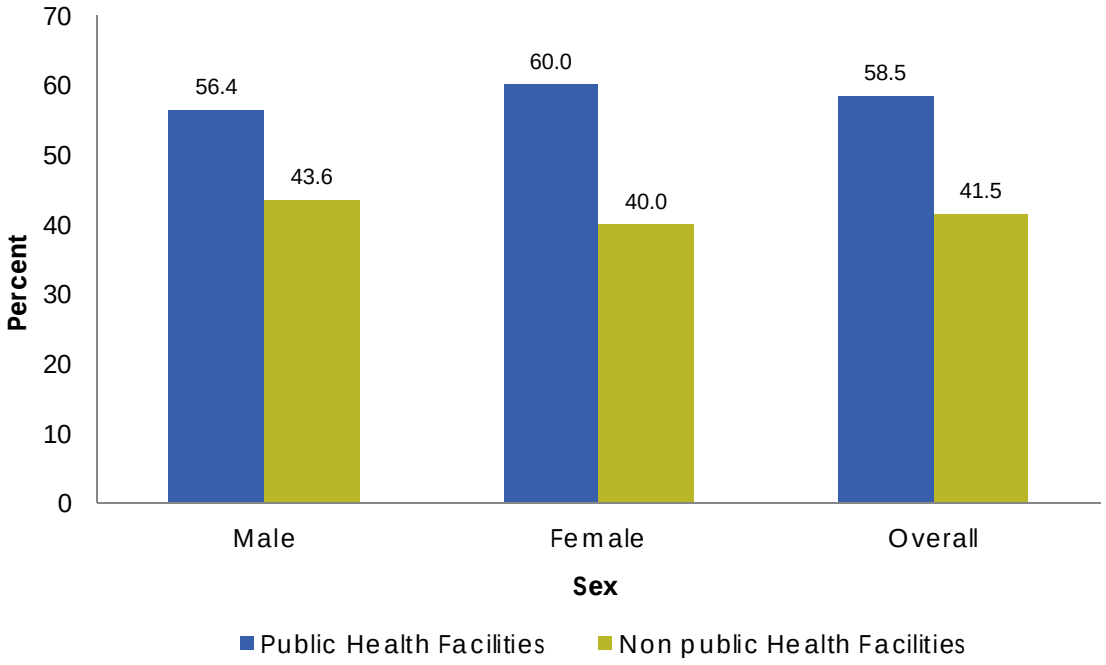
Overall, a person's education level seemed to be an important determinant of their choice of health facility by ownership. Public facilities were chosen in over 60 percent of the total visits for those with primary level education, and nearly 34 percent for those with college and university level.

Figure 3.9. Percentage Distribution of Visits by Health Facility Ownership and Education Level, 2013



While results showed small differences in facility/provider choice between male (56.4%) and female (60.0%), large differences were seen in the utilisation of public and non-public health facilities (Figure 3.10).

Figure 3.10. Percentage Distribution of Outpatient Visits by Health Facility Ownership and Sex, 2013

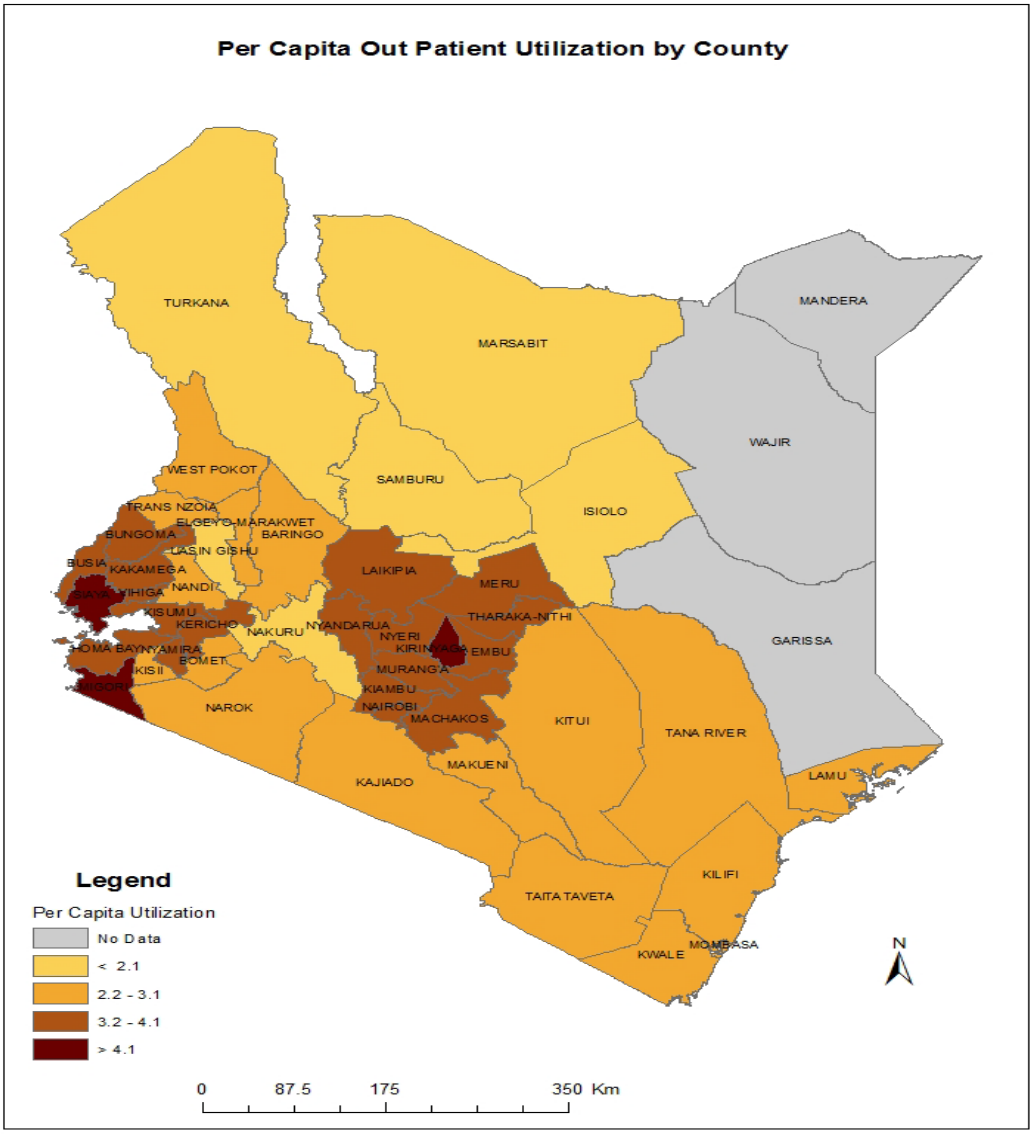


Inter-county variations in outpatient utilisation rates and patterns

An often-used measure of health service utilisation is the annual number of visits to health providers per capita. Figure 3.11 illustrates the range of annual outpatient visits per capita by county (from 1.25

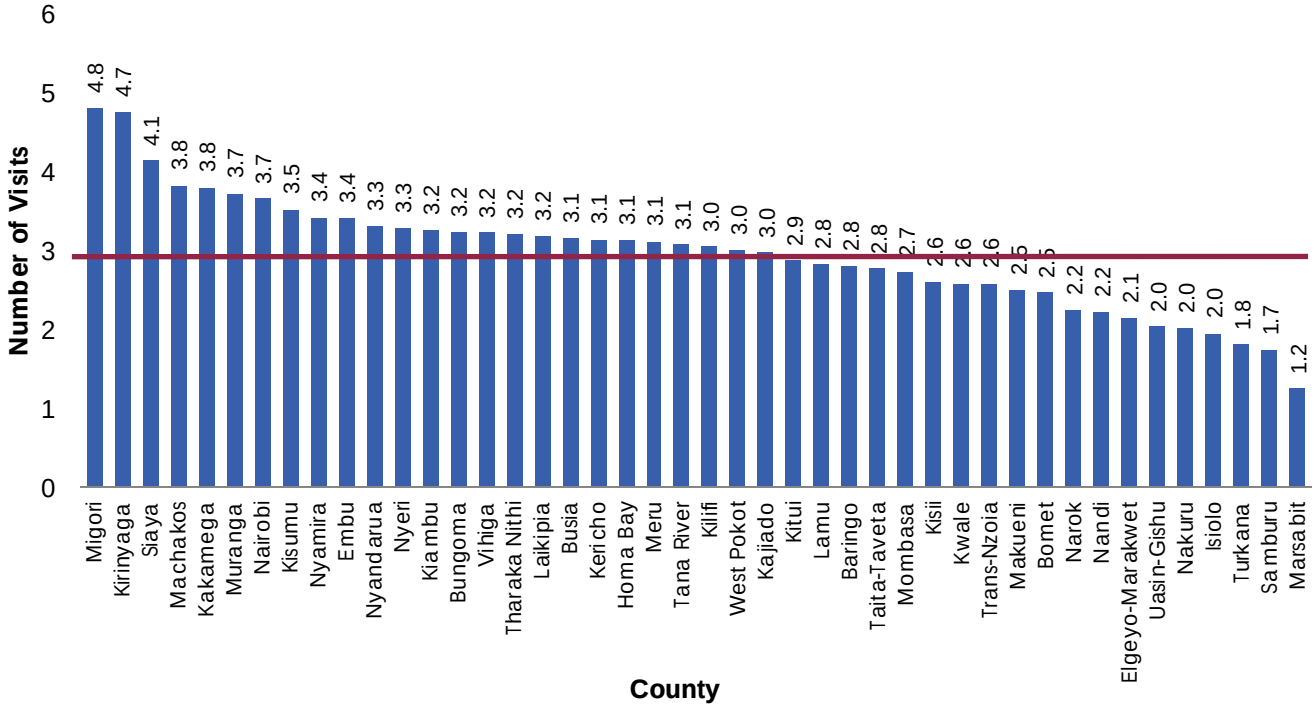
in Marsabit to 4.80 in Migori). Twenty-three counties had an annual number of outpatient visits per capita that was lower than the national average (3.1 visits).

Figure 3.11. Annual Number of Outpatient Visits Per Capita by County, 2013



Inter-county variations in per capita utilisation rates are given in Figure 3.12. Some counties, including Kirinyaga, Murang'a, Nairobi, Machakos, Siaya, Migori, and Kakamega, reported per capita utilisation rates above the national average (3.1 visits per person per year). These counties also reported high proportions of self-reported illness, which translate to high per capita utilisation rates.

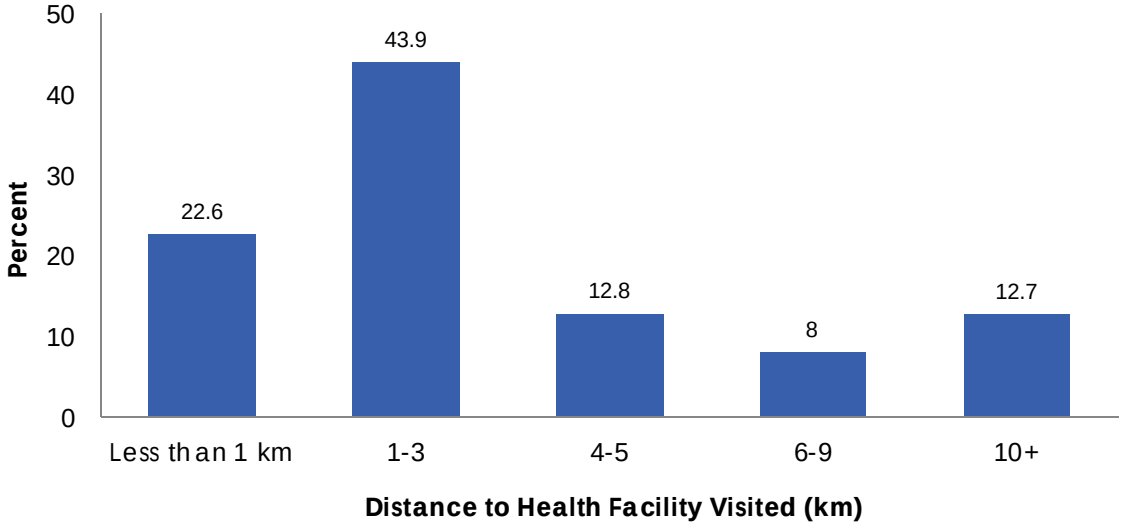
Figure 3.12. Per Capita Utilisation of Outpatient Services by County, 2013



Geographical access to health services

To a large extent, utilisation of outpatient service is expected to be related to physical access to services. In 2013, nearly two-thirds (66.5%) of those who sought care lived within three km of the health service provider where care was sought, while just under 13 percent lived more than 10 km from the health facility, clearly showing a negative relationship between utilisation of outpatient services and distance to provider (Figure 3.13). Overall, the survey demonstrated there was a significant reduction in the utilisation of healthcare services as the distance from a health facility increases.

Figure 3.13. Percent of Persons Seeking Outpatient Care by Distance to Where Care was Sought, 2013



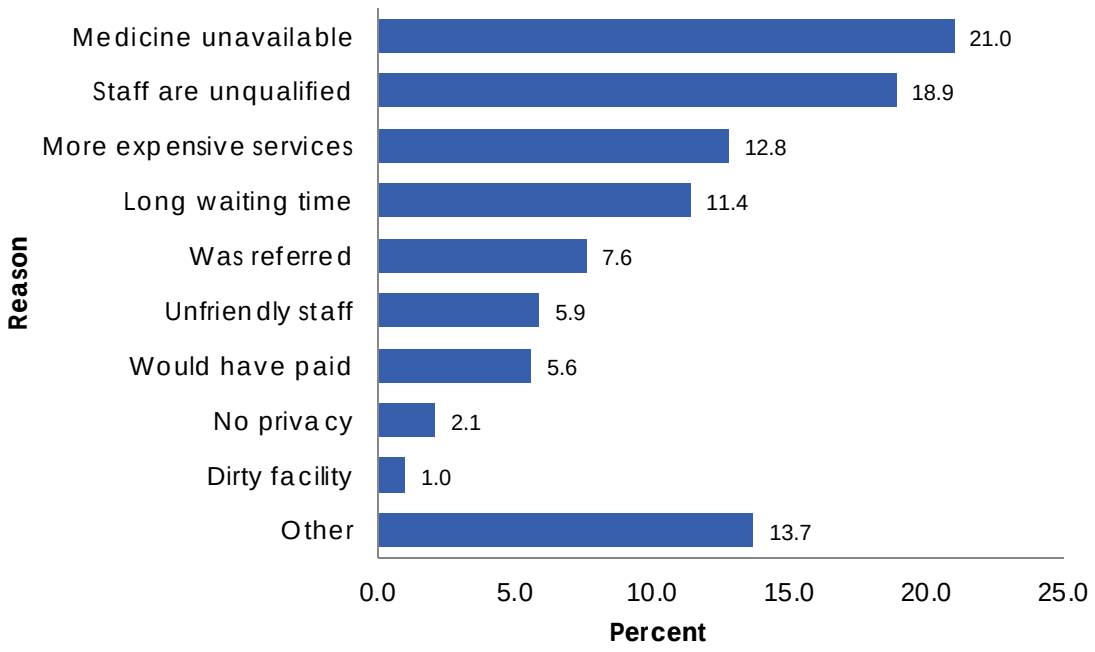
Reasons for bypassing nearest outpatient healthcare provider

A bypassed healthcare provider is one that, although closer in distance to an individual seeking care, is ignored in preference to one farther away. Bypassing the nearest provider is an indicator of a perceived poor quality of care. It should therefore be a concern to policymakers if poor people choose to bypass a public facility where services are highly subsidised and instead travel a farther distance and pay more for healthcare at a different facility.

The 2013 survey data was analysed to examine patterns of healthcare choice related to the characteristics and locations of both the facilities visited for outpatient care and individual household members. Generally, individuals are assumed to make decisions about visiting or not visiting a facility based on a range of health provider characteristics. These include the distance to the facility, availability of medicine, cost of services (a proxy for the general facility-specific price level of medical services), waiting time, staff attitude, referral, free services, and cleanliness.

Survey results indicate that bypassing is mainly motivated by a quest for a higher quality of care, with "medicine unavailable" (21%) as the major reason for individuals bypassing the nearest facility. Other commonly reported reasons include "staff are unqualified" (18.9%), "more expensive services" (12.8%), and "long waiting time" (11.4%). On the whole, bypassing reflects the search for health services perceived as better adapted to a household's needs, along with the ability to pay for care (Figure 3.14).

Figure 3.14. Percent Distribution of the Reasons for Bypassing the Nearest Outpatient Health Provider, 2013



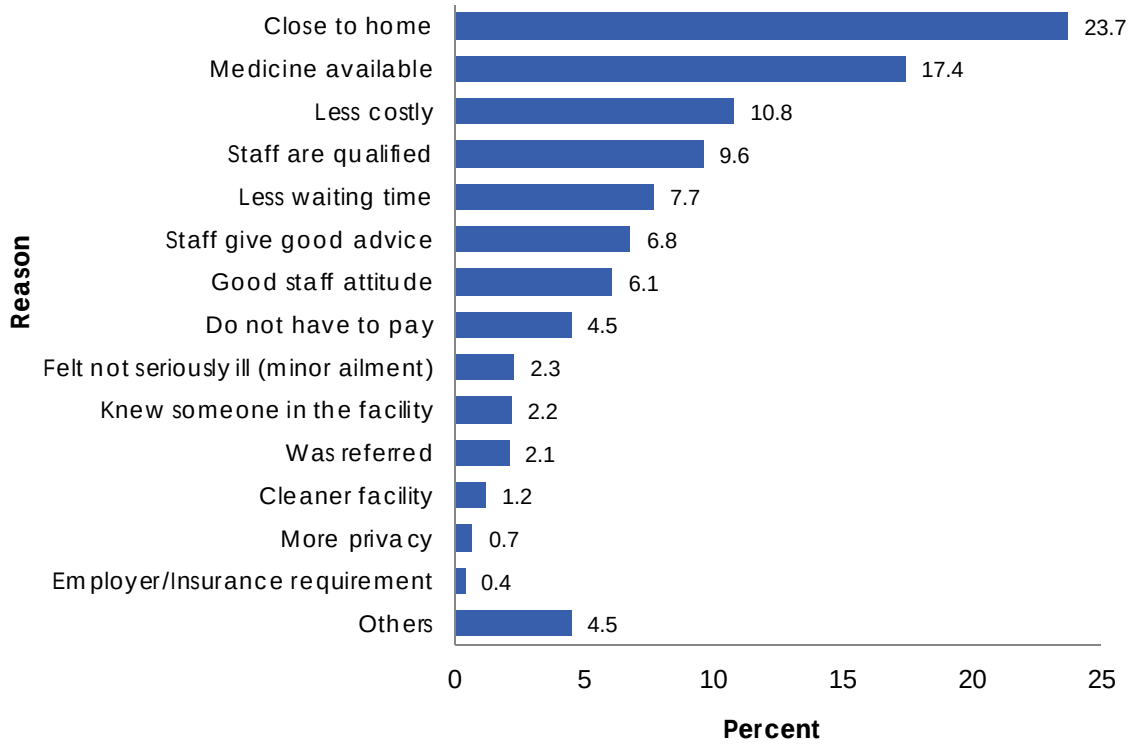
Reasons for choosing a healthcare provider

The characteristics of a health facility influence an individual's choice of which health facility to attend. Provider choice often depends on a number of characteristics including distance to the facility, availability of inputs such as medicine and qualified health staff, cost of care, perceived attitude of health workers, facility cleanliness, and waiting time.

Figure 3.15 presents the reasons given by individuals for choosing to seek outpatient care from a health service provider. Overall, distance was the most important determinant in choosing a health facility, with 23.7 percent of the population indicating that their main reason for choosing care at a particular facility was that it was "close to home." The second most commonly given reason was

"medicine was available" (17.4%), followed by "less costly" (10.8%), "staff are qualified" (9.6%), and "less waiting time" (7.7%). Clearly, distance and availability of medicines appear to be the critical reasons for individuals' choice of health service provider.

Figure 3.15. Percent Distribution of Reasons for Choosing the Outpatient Health Provider, 2013



Time taken to reach the health facility where care was sought

In the 2013 survey, individuals who sought outpatient care were asked about the time they took to reach their chosen health facility. On average, it took individuals 46 minutes to reach an outpatient care facility (Table 3.6). Minimal differences in terms of time taken were reported between rural areas (46 minutes) and urban areas (45 minutes).

Table 3.6. Utilisation of Health Service: Time Taken to Health Facility Where Outpatient Service Was Sought, 2013

	Residence		Overall
	Rural	Urban	
<1 hour	71.2	74.0	72.2
1–2 hours	22.6	19.2	21.4
3–4	4.7	5.0	4.8
5+	1.5	1.8	1.6
Total	100.0	100.0	100.0
Average time taken (minutes)	46	45	46

Unmet Need for Healthcare

Not all of the household members who reported illness episodes during the four weeks preceding the survey sought healthcare services and were therefore not treated. Overall, episodes of untreated illness have declined with each KHHEUS survey.

Over the 10-year survey period, the proportion of household members who reported illness in the four weeks preceding the survey but did not seek healthcare fell from 22.8 percent in 2003 to 12.7 percent in 2013. The drop likely reflects improvements in access to healthcare (Table 3.7). The year 2004/2005 saw major policy changes—including the reduction in user fees in public health centres and dispensaries—that may have encouraged more people to seek healthcare services.

Table 3.7. Total Number of Visits and Utilisation Rates

Description	2003	2007	2013
Percent of people with some sickness reported but did not seek healthcare (%)	22.8	16.7	12.7
Percent of people with illness and sought healthcare (%)	77.2	83.3	87.3
Total	100.0	100.0	100.0

The survey also revealed wide variations in reported illness across counties. Among the counties, Kirinyaga (27.3%) and Migori (27.4%) reported the highest proportions of reported illness of any other county (Table 3.8). Other counties that reported higher illness rates than the national average (19.3%) include Nairobi, Nyandarua, Nyeri, Murang'a, Kiambu, Mombasa, Meru, Tharaka Nithi, Embu, Kitui, Machakos, Siaya, Kisumu, Homa Bay, Nyamira, Trans-Nzoia, Laikipia, Kericho, Kakamega, Vihiga, Bungoma, and Busia. Marsabit (7.0%) and West Pokot (10.4%) reported the lowest incidence of self-reported illness.

These variations may be explained by differences in the ability of respondents to report illness/morbidity. The KHHEUS survey measured illness/morbidity in terms of reported illness. However, economic, social, and cultural conditions vary widely across counties and the definition of illness/morbidity differs among people.

Wide variations in unmet healthcare needs were reported across counties with Tana River (27.8%), Samburu (40.4%), Trans Nzoia (33.9%), Nakuru (27.1%), and Kericho (32.9%) counties reporting high proportions of individuals with reported illness who never sought care. Some counties, including Nairobi, Nyandarua, Nyeri, Kirinyaga, Murang'a, Kiambu, Mombasa, Kilifi, Taita Taveta, Meru, Tharaka Nithi, Machakos, Siaya, Kisumu, Homa Bay, Migori, Nyamira, Baringo, Elgeyo-Marakwet,

Uasin-Gishu, Nandi, Narok, Kajiado, Kakamega, and Vihiga, reported unmet healthcare needs lower than the national average (12.7%).

Table 3.8. Distribution of Population Reporting Illness in the Four Weeks Preceding the Survey and Percentage of Ill Persons Who Did Not Seek Treatment by Selected Characteristics, 2013

Background Characteristic	Population	% of the Population Reporting Illness in the Past Four Weeks	% of the Population Reporting Being Ill and Not Seeking Treatment
Nairobi	3,556,148	20.4	9.2
Nyandarua	635,741	21.7	8.3
Nyeri	740,831	19.7	9.2
Kirinyaga	561,005	27.3	7.7
Murang'a	1,195,097	22.0	6.2
Kiambu	1,542,215	19.6	9.7
Mombasa	1,046,834	17.8	12.4
Kwale	717,554	14.1	12.7
Kilifi	1,220,448	18.5	10.8
Tana River	264,482	16.5	27.8
Lamu	112,751	18.3	16.5
Taita Taveta	323,462	16.3	9.5
Marsabit	303,445	7.0	18.5
Isiolo	151,010	12.4	13.6
Meru	1,406,807	21.0	11.2
Tharaka Nithi	380,735	22.1	7.5
Embu	535,562	21.5	18.0
Kitui	1,059,506	19.5	19.6
Machakos	1,134,287	22.2	12.0
Makueni	923,875	16.7	13.2
Siaya	902,752	24.7	9.3
Kisumu	1,044,690	19.7	4.1
Homa Bay	983,037	22.2	11.2
Migori	1,031,645	27.4	7.3
Kisii	1,350,132	16.2	17.9
Nyamira	519,564	19.5	5.4
Turkana	937,767	15.2	13.9
West Pokot	561,418	10.4	13.4
Samburu	246,826	17.9	40.4
Trans-Nzoia	901,131	20.9	33.9
Baringo	613,099	13.6	12.0
Uasin-Gishu	989,190	14.0	8.2
Elgeyo-Marakwet	407,131	13.0	7.2
Nandi	824,197	15.0	5.6
Laikipia	442,712	19.6	18.0
Nakuru	1,765,978	16.1	27.1
Narok	940,310	17.5	10.7
Kajiado	759,909	17.1	8.0

Background Characteristic	Population	% of the Population Reporting Illness in the Past Four Weeks	% of the Population Reporting Being Ill and Not Seeking Treatment
Kericho	836,815	24.0	32.9
Bomet	796,682	15.0	11.6
Kakamega	1,113,714	24.5	9.9
Vihiga	594,879	23.7	6.3
Bungoma	1,723,710	19.9	13.3
Busia	521,311	22.3	13.4
Overall	38,620,394	19.3	12.7

In nearly 13 percent of illness episodes reported in rural areas and about 12 percent in urban areas, no treatment was sought (Table 3.9). Overall, the proportion of reported illness episodes where care was not sought reduced with wealth quintiles, indicating that economic reasons influence the decision of whether or not to seek healthcare. The perceived need for healthcare therefore depends largely on the ability of an individual to seek care.

Table 3.9. Percent Reporting Illness and Never Sought Care by Sex, Wealth Quintile, and Residence, 2013

Background Characteristics	Place of Residence		Overall (% of the total population)
	Rural (%)	Urban (%)	
Sex			
Male	9.2	4.9	14.1
Female	7.8	3.8	11.6
Age			
0–4	5.8	2.2	7.9
5–14	8.1	3.2	11.3
15–24	8.8	6.4	15.2
25–34	8.3	7.4	15.8
35–44	8.2	5.3	13.5
45–54	9.8	4.6	14.4
55–64	9.5	3.7	13.2
65+	13.9	3	16.8
Wealth quintiles			
Poorest	12.5	1.3	13.8
Second	12.2	1.8	14
Middle	9.2	3.2	12.4
Fourth	6	5.8	11.8
Richest	1.8	9.6	11.4
Overall	13	12	12.7
Number	13,259,242	25,361,149	38,620,391

Reasons for not seeking treatment despite reporting illness

The most important reasons for not seeking healthcare despite reported episodes of illnesses were "high cost of care," "self-medication," "long distance to facility," and "illness not considered serious enough." Although high cost was reported as an important reason for not seeking care in 2013 (21.4%), this was a decline from past surveys (37.7% in 2007 and 36.3% in 2003). In 2013, the most commonly reported reason for not seeking care was "illness not considered serious enough" (Table 3.10). This, however, is the respondent's perception of the seriousness of the illness and may not necessary indicate whether or not the illness was truly serious.

The 2013 survey also found a high prevalence of self-medication among the population. While self-medication was cited as a reason for not seeking care despite illness in almost one-third of cases (30.7%), the incidence of self-medication was lower in 2013 than in both 2007 (34.4%) and 2003 (34.3%). It is common for individuals who are ill to buy drugs from chemists without prescriptions, an indication of weak regulations in the use of medicine. Individuals also sometimes use drugs left over from a similar past episode of illness.

Self-medication for minor illness based on sound information may have positive implications for health status. However, self-medication among poorly informed segments of the population may result in a waste of household resources and, eventually, a drain on public resources if illnesses are treated late after ineffective self-medication. Accordingly, these results suggest that attention should be paid by public health authorities to information and health education concerning self-medication.

Table 3.10. Reasons for Not Seeking Treatment Despite Reported Illness

Reasons	Percent of Respondents		
	2003	2007	2013
Illness not considered serious enough	7.9	0.1	39.3
Self-medication	34.3	34.4	30.7
High cost of care	36.3	37.7	21.4
Long distance to provider	15.1	11.2	1.8
Poor quality service	1.6	0.5	0.5
Religious / cultural reasons	1.1	3.1	0.1
Fear of discovering serious illness	1.1	0.2	0
Other reasons	2.6	12.8	6.2
Total	100	100	100

Utilisation of Inpatient Services

Inpatient care refers to cases where an individual is hospitalised for at least 24 hours. It reflects more serious health complaints than those treated as outpatient cases. The likelihood of a person being hospitalised in the past year provides one measure of inpatient care utilisation. This section describes the pattern of inpatient care utilisation revealed by the *2013 KHHEUS*.

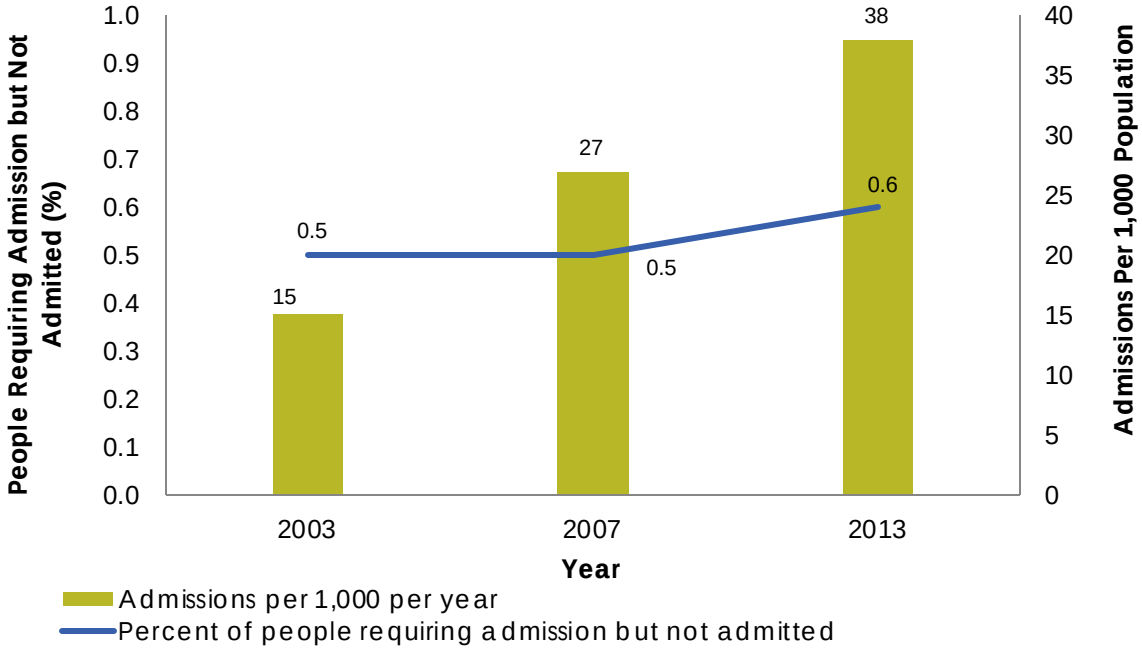
Based on the 2013 findings, approximately 1.2 million Kenyans were hospitalised at least once in the 12 months preceding the survey. The proportion of self-reported admissions increased from 1.5 percent of the population in 2003 to 2.5 percent in 2007, and similarly to 2.5 percent in 2013 (Table 3.11). The number of admissions per person per year also indicates an increase in admission rates, from 15 per 1,000 population in 2003 to 38 per 1,000 population in 2013, with an average length of stay (ALOS) of 6.7 days.

Table 3.11. Summary Statistics on Admissions

Description	2003	2007	2013
Percent of population requiring admission	2.0	3.0	3.1
Percent admitted	1.5	2.5	2.5
Percent not admitted	0.5	0.5	0.6
Admissions per 1,000 population	15	27	38.0
Admissions in rural areas per 1,000 population	14	24	34.0
Admissions in urban areas per 1,000 population	20	38	45.0
Average length of stay	8.5	6.6	6.7

Figure 3.16 represents the admission status and the percentage of people requiring hospitalisation but who were not admitted. This utilisation trend increased from 0.5 percent in 2007 to 0.6 percent in 2013.

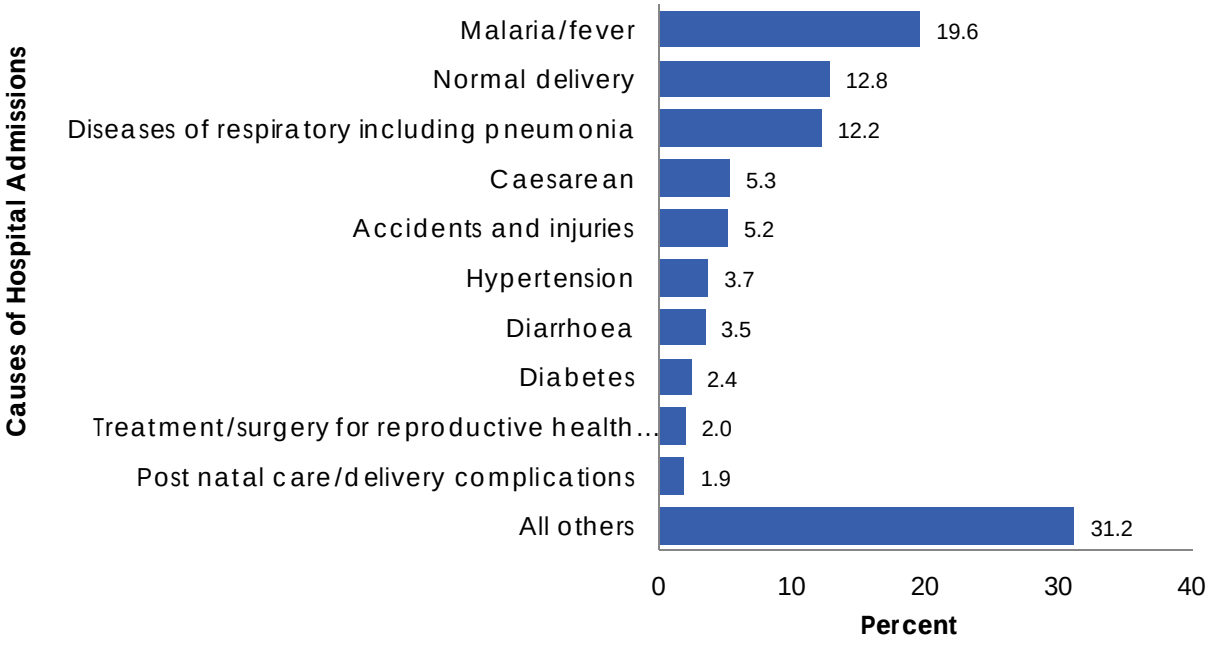
Figure 3.16. Trends in Utilisation of Inpatient Services, 2013



Reasons for hospitalisation

The main health conditions leading to hospitalisation provide insight into the overall burden of disease (Figure 3.17). Inpatient visits were most frequently made for malaria/fever, which accounted for 19.6 percent of total admissions. Other common conditions included respiratory diseases (12.2%) and accidents and injuries (5.2%). Further, a significant proportion of admissions were related to child bearing (20.0%); namely, normal and caesarean deliveries and delivery complications. There was also a high incidence of non-communicable conditions leading to hospitalisation, including hypertension (3.7%) and diabetes (2.4%), reflecting a changing disease pattern.

Figure 3.17 Leading Causes of Hospital Admissions, 2013

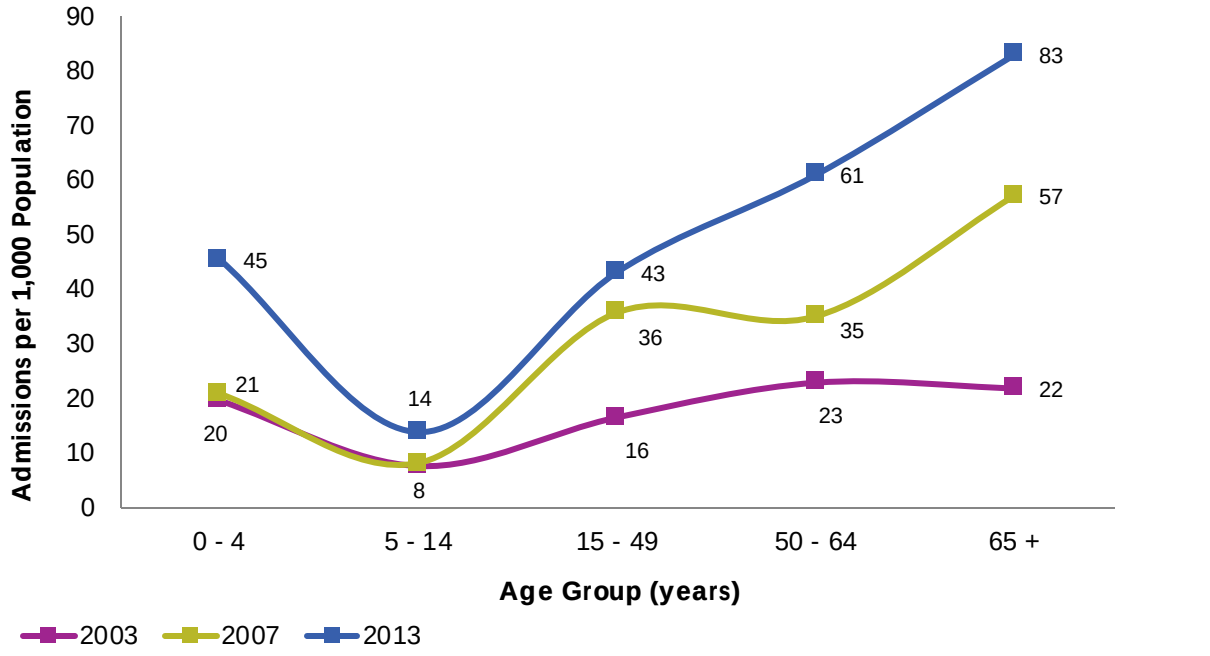


Trends in admission rates by age group

As seen in Figure 3.18, the annual admission rate decreases suddenly between the age groups 0–4 and 5–14 before rising again and finally peaking among those ages 65 and older. This trend is observed for all three surveys (2003, 2007, and 2013), with the exception of a small dip between the age groups 50–64 and 65 years and older in 2003. Among individuals ages 65 and older, high rates of admissions (per 1,000 populations) were reported in the three surveys compared to younger age groups. This indicates increased health problems among the elderly.

Those in the 0–4 and 5–14 age groups experienced minimal changes in the utilisation of inpatient services in all the three surveys. Those ages 15 and older experienced a large increase in utilisation.

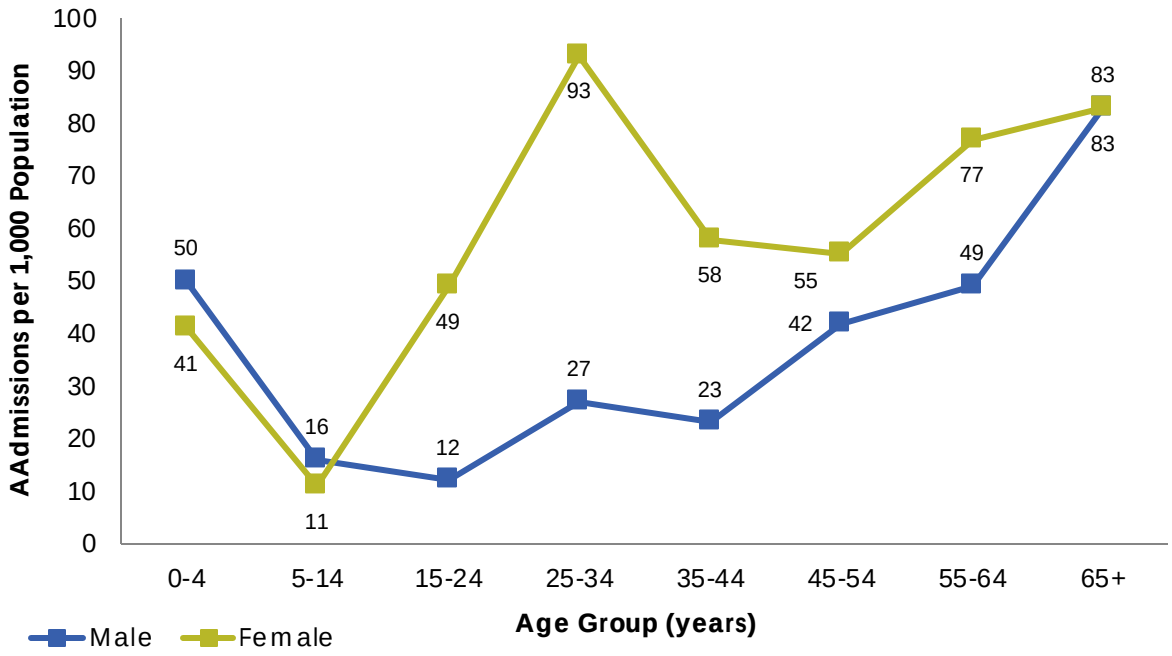
Figure 3.18. Average Annual Admission Rate per 1,000 Population by Age Group



Trend in admission rates by sex

Females had a higher annual admission rate per capita compared to males for all age groups except for the 0–4 and 5–14 age groups, where male admissions were higher; for those 65 years and older, admission rates between the sexes were equal (Figure 3.19). On average, females reported an admission rate of 48 per 1,000 population compared to 27 per 1,000 population for males. Women's higher admission rate is mainly due to of maternity-related admissions which accounted for 20 percent of all inpatient admissions.

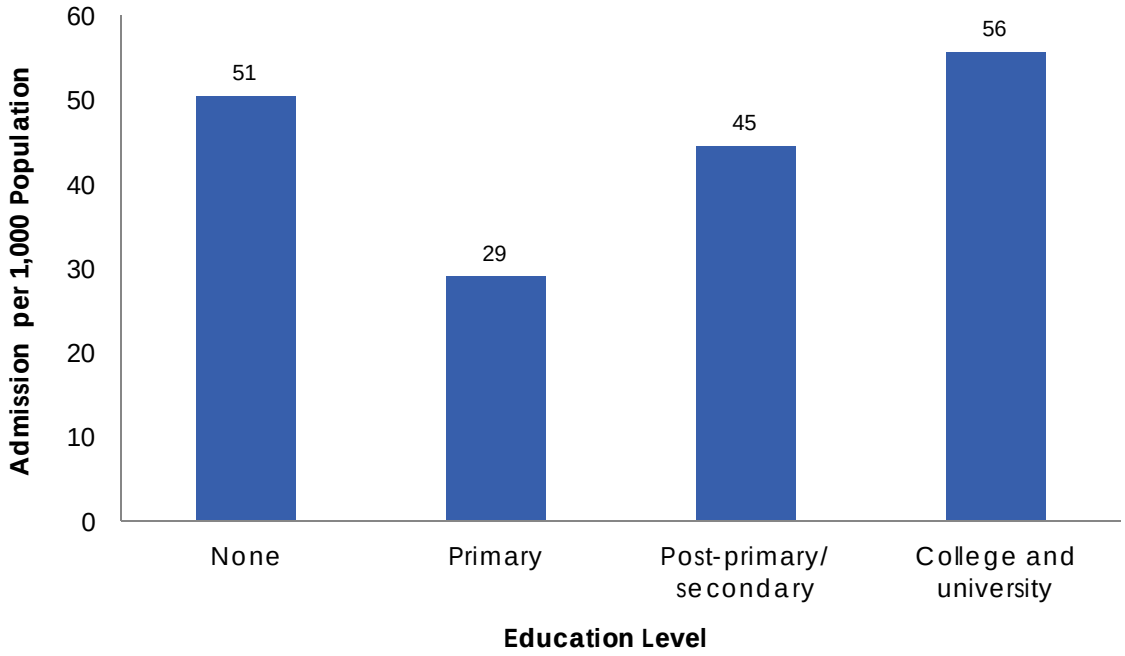
Figure 3.19. Average Annual Admission Rate per 1,000 Population by Sex and Age Group, 2013



Utilisation of inpatient care services by education

In the 2013 survey, the lowest rate of inpatient utilisation was reported for persons with primary school education: 29 per 1,000 population (Figure 3.20). Conversely, individuals with post-primary/secondary educations (45 per 1,000 population) and college and university educations (56 per 1,000 population) had the highest inpatient utilisation rates.

Figure 3.20. Number of Admissions per 1,000 Population by Education Levels, 2013



Admission rates by wealth index

There are clear differences in admission rates by socioeconomic group, with those in the richest wealth quintile being more likely to seek admission than other groups. As such, the admission rate per 1,000 population increases with rises in wealth quintiles (Figure 3.21). One possible explanation for this pattern is that high costs hinder people from the poorest quintile from seeking inpatient healthcare.

Figure 3.21. Average Annual Admission Rate per 1,000 Population by Wealth Quintile, 2013

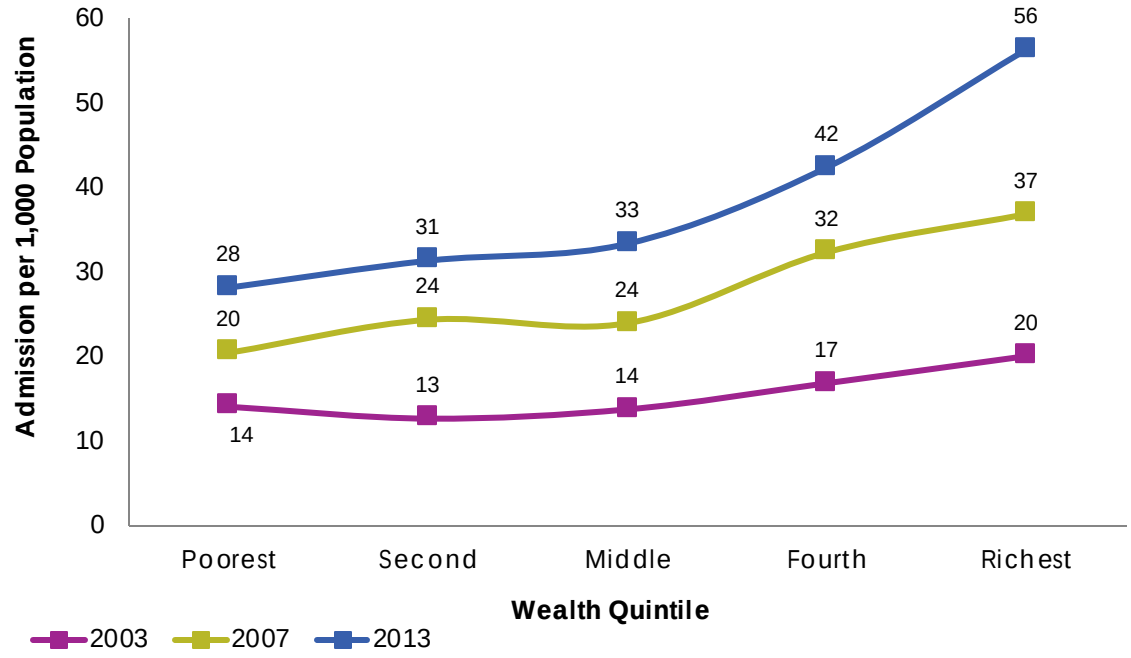


Figure 3.21 shows large variations in total admission rates per 1,000 population across wealth quintiles. While in 2013, the poorest quintile had an average of 28 admission per 1,000 population per year, those in the richest quintile had as many as 56 admissions per 1,000 population. Similar

disparities in total utilisation across wealth quintiles were also reported in 2003 and 2007. Overall, the results indicate a large increase in admission rates per 1,000 population between 2003 and 2013.

Distribution of admissions by type of healthcare provider and ownership

Figure 3.22 and tables 3.12 and 3.13 show the distribution of total admissions across different types of healthcare providers, and by ownership, residence (rural and urban), and wealth index. This data reveals a heavy reliance on public hospitals by all wealth quintiles, which accounted for roughly half of all admissions reported in 2003, 2007, and 2013. In addition, public hospitals were more commonly used by individuals in the three lowest wealth quintiles than among those in the highest wealth quintile in all three surveys.

The share of private hospitals' total admissions is strongly associated with economic status. Only 9.5 percent of private hospitals admissions came from among the bottom 20 percent (poorest quintile) of the population (Table 3.13). However, this increases to 36.4 percent for the top 20 percent (richest quintile) of the population. This is a common finding in most developing countries and represents a shift to higher-quality providers (at least as perceived by users) as affluence increases.

Between 2003 and 2013 there was a significant decline in the relative share of public hospitals in total admissions. Public hospital admissions dropped from roughly 63 percent in 2003 to just over 48 percent in 2013 (Figure 3.22). As is evident from Figure 3.22, all three surveys showed that people preferred public providers over private providers. Overall, in the 2013 survey, public facilities (i.e., hospitals and health centres) account for nearly 56 percent of all admissions, with private and mission facilities providing about 26 percent and 18 percent of inpatient care, respectively. It should be noted that these results emerged in the context of an extensive network of public health facilities spread out across the country. This trend is also seen in both rural and urban areas.

Figure 3.22. Trends in Inpatient Service Utilisation by Health Facility Type/Ownership

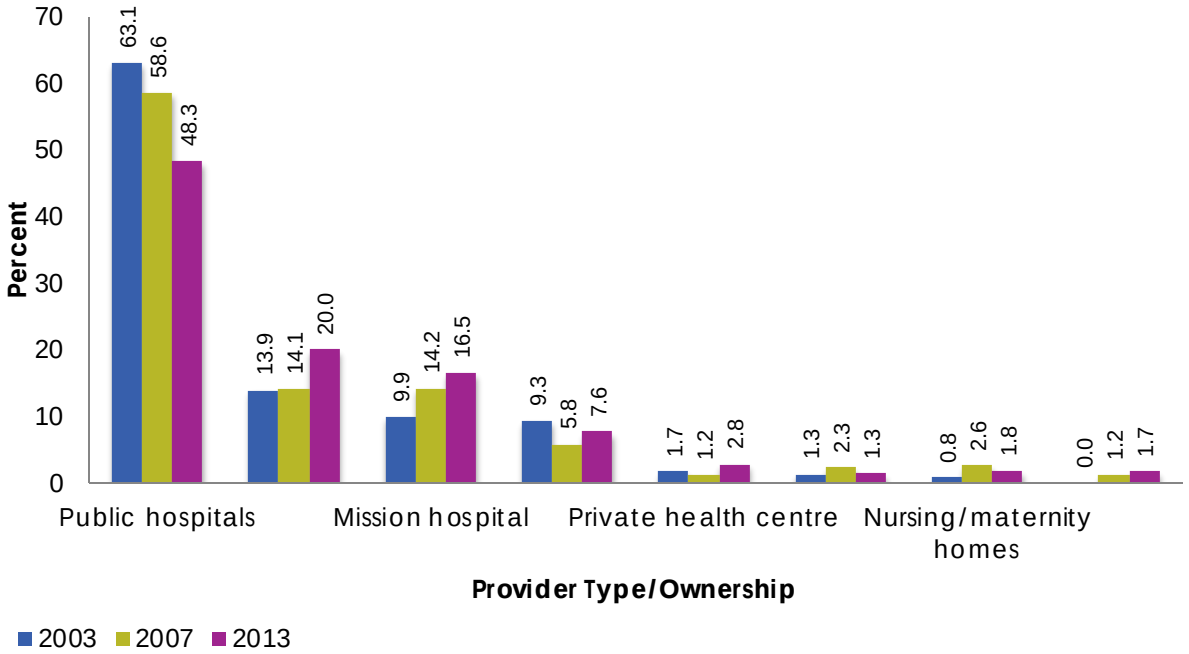


Table 3.12. Percent Distribution of Admissions by Health Facility Type/Ownership and Residence, 2013

Health Facility Type/Ownership	Rural (%)	Urban (%)	Overall (% of the total population)
Public hospitals	49.2	47.1	48.3
Private hospitals	14.2	27.9	20.0
Mission hospital	19.4	12.7	16.5
Public health centre	10.6	3.6	7.6
Private health centre	2.1	3.7	2.8
Mission health centre	1.7	0.8	1.3
Nursing/maternity homes	1.1	2.7	1.8
All others	1.7	1.5	1.7
Total	100.0	100.0	100.0

The distribution of admissions across types of facilities varies markedly across wealth quintiles with a pronounced shift toward private hospitals and away from public hospitals as wealth status increases. People in the poorest quintile accounted for the majority of admissions in public facilities (i.e., hospitals and health centres), much higher than for those in the richest quintiles. Members of affluent households (fourth richest and richest) most often sought inpatient care from private hospitals (19.3% for the fourth quintile and 36.4% for the richest quintile) (Table 3.13).

Among those who were hospitalised, the use of public hospitals by wealth index was mixed (Table 3.13). Overall, it appears that use of public health facilities is a function of affordability. For instance, the use of public hospitals for inpatient care shows an upward trend from the poorest to the middle quintile and then drops in the fourth and richest quintile, suggesting that economic status influences the choice of health service provider. Conversely, the use of private providers is positively correlated with wealth index quintiles.

Table 3.13. Admissions by Health Provider Type/Ownership and Wealth Index, 2013

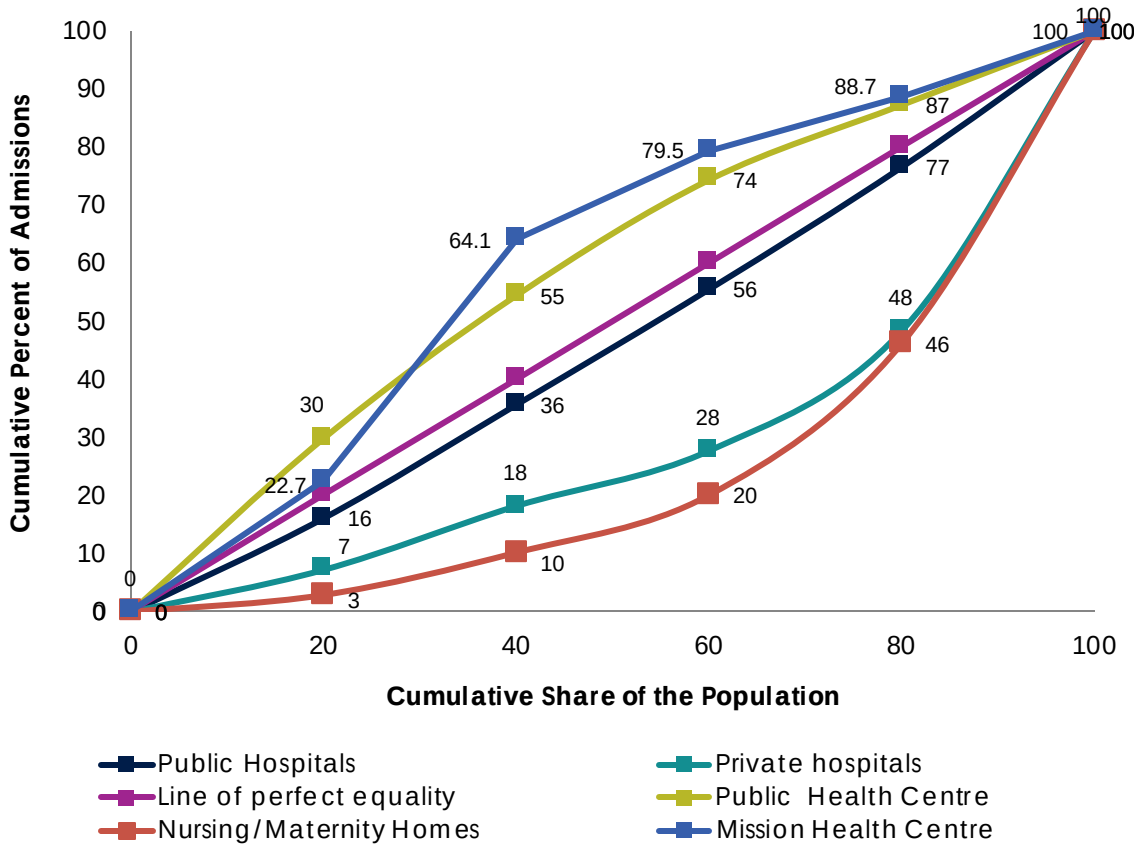
Health Facility Type/Ownership	Wealth Quintile				
	Poorest	Second	Middle	Fourth	Richest
Public hospitals	51.4	54.0	54.5	47.4	39.9
Private hospitals	9.5	12.6	10.8	19.3	36.4
Mission hospital	15.9	14.4	20.6	21.4	12.0
Public health centre	15.1	10.7	8.6	4.6	3.4
Private health centre	3.4	2.4	2.3	2.3	3.4
Mission health centre	2.0	3.1	1.2	0.6	0.5
Nursing/maternity homes	0.3	0.8	1.0	2.2	3.4
All others	2.4	2.0	1.0	2.2	1.0
Total	100.0	100.0	100.0	100.0	100.0

Generally, the survey results showed that the distribution of inpatient users was more unequal between public and private health facilities as observed in the Lorenz[4] curves for admissions shown in Figure 3.23.

As Figure 3.23 shows, the richest 20 percent of the population was overrepresented among private hospital users, as well as among private nursing/maternity home users. The poorest 20 percent of the population was overrepresented among public and mission health centres, revealing a pro-poor pattern. Further, it was observed that the second quintile had more of an overrepresentation among mission health centres than the poorest quintile.

A closer look at Figure 3.23 reveals that approximately 52 percent of all private hospital inpatient users were drawn from the richest quintile and nearly three quarters (72%) from the top two quintiles. Conversely, the poorest quintile was vastly under-represented among private hospital users relative to their share in total population, constituting only 7 percent of all private hospital inpatient admissions. Admissions to public hospitals were fairly distributed in all the wealth quintiles.

Figure 3.23. Lorenz Distribution of Admissions in Selected Health Facilities, 2013



Those in the poorest wealth quintile predominantly sought care at public health centres. This is largely the result of deliberate government policies to improve the poor's access to primary level public health facilities. Likewise, the dominance of wealthy individuals among private hospital users is undoubtedly the result of factors that facilitate access to private care. For instance, geographical access to private hospitals is better for urban dwellers than for poorer rural residents because the majority of private hospitals are located in urban centres. The high cost associated with private hospital use is also a factor. The cost of private facilities is much greater than that of public facilities

[4] The Lorenz curve is used in economics to describe inequality in wealth or size. If there is any inequality, the curve(s) falls below the line of perfect equality.

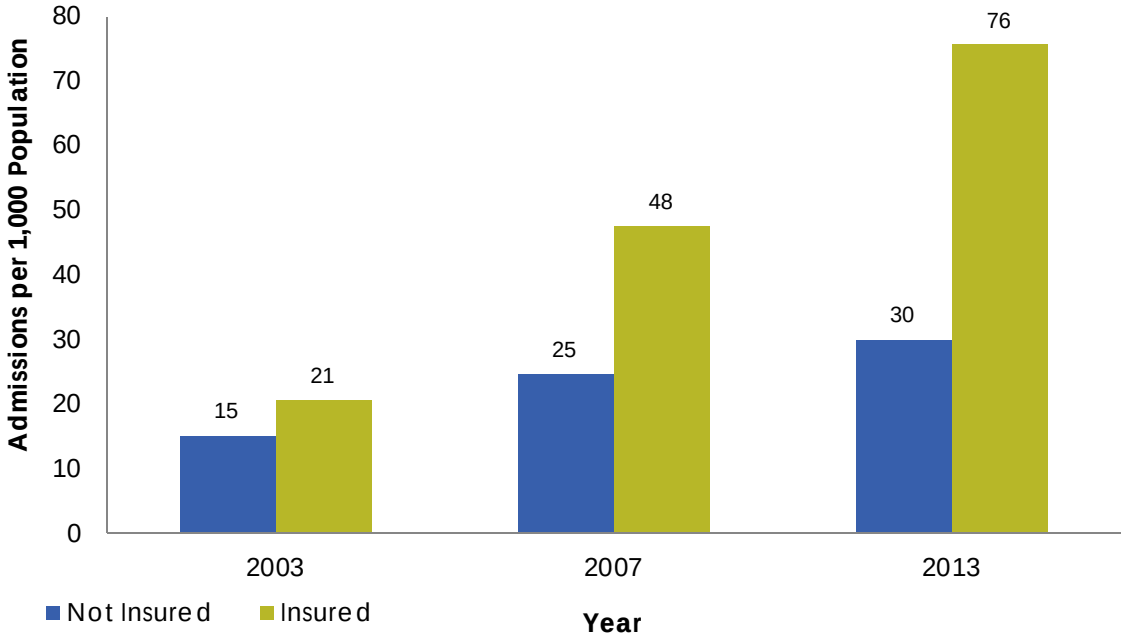
because private hospitals need to recover the full cost of their services. Further, private facilities also offer more specialised and perceived higher-quality treatment than public facilities.

Higher rates of private facility use by the wealthier quintiles also relates to health insurance coverage. Individuals with health insurance tend to be from the wealthier quintiles than from the poorer quintiles. This is most likely because health insurance is mandatory for persons in formal employment. Presumably, wealthier individuals can also afford private health insurance, and therefore may have a bias toward greater use of private hospital services.

Admission rate by insurance coverage

People who were covered by health insurance used inpatient health services more than the non-insured. The insured/non-insured admission ratio increased from 1.4:1 in 2003 to 1.9:1 in 2007 and to a high of 2.5:1 in 2013 (Figure 3.24). This means that, given their respective utilisation levels, insured people used inpatient services at a greater frequency in 2013 compared to non-insured people.

Figure 3.24. Trends in Admission Rates by Insurance Coverage (Insured/Uninsured Population)

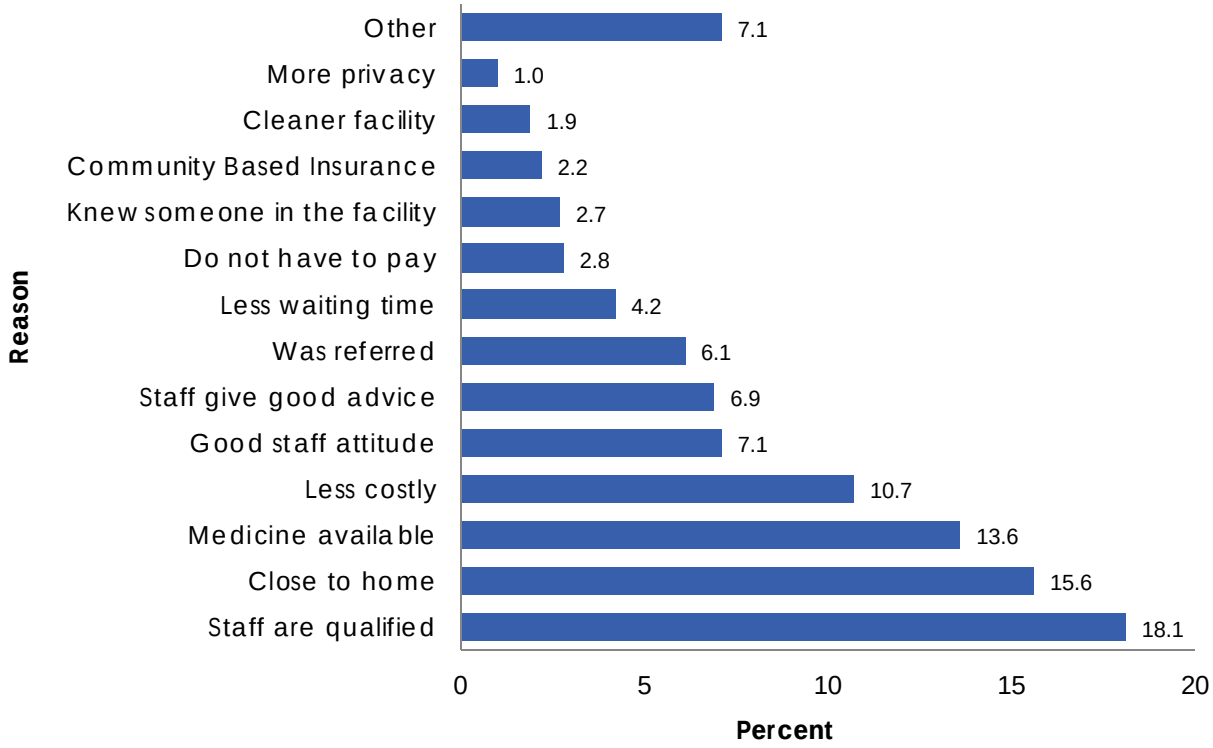


The annual hospital admission rates among the insured were significantly higher (more than twofold) than that of the uninsured population in 2013 (Figure 3.24). In addition, the admission rate for those without insurance coverage doubled over the 10-year survey period, while that of those with coverage almost quadrupled.

Reasons for choosing facility for inpatient services

Respondents were asked why they chose the health facility where they were hospitalised. The most commonly reported reason was “staff are qualified” (18.1%). Proximity to households’ residence and the availability of medicine were other factors that strongly influenced the choice of the facility (Figure 3.25).

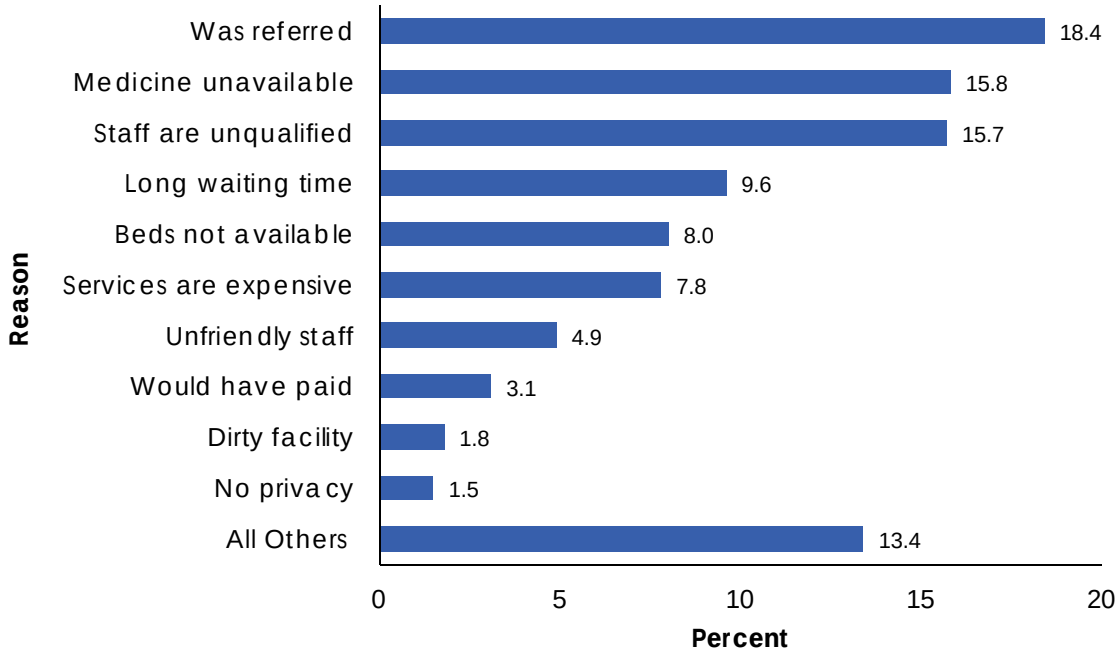
Figure 3.25. Distribution of Reasons for Choosing the Inpatient Health Provider, 2013



Reasons for bypassing nearest healthcare provider

Figure 3.26 presents the reasons that individuals gave for bypassing the facility nearest to their household while seeking inpatient services. The most frequent reason given was that the individual "was referred" from another facility (18.4%), followed by "medicine unavailable" (15.8%), and "unqualified staff" (15.7%).

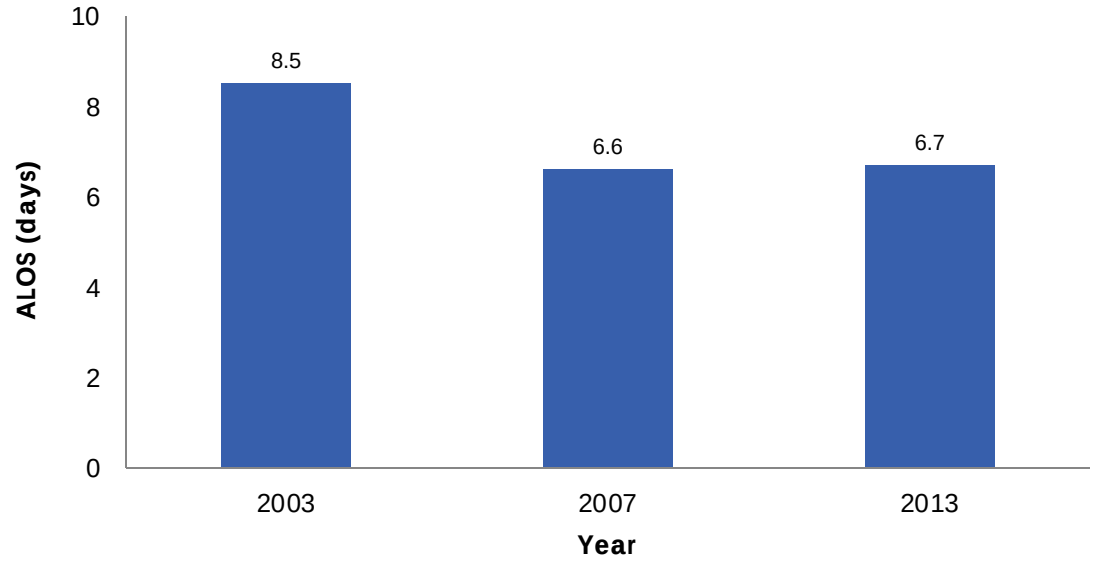
Figure 3.26. Distribution of Reasons for Bypassing the Nearest Inpatient Health Provider, 2013



Average length of stay

Another measure of utilisation of inpatient health services is the average length of stay. The findings show that the ALOS (days) decreased over the past decade from 8.5 in 2003 to 6.7 in 2013 (Figure 3.27). This decline can be attributed to the management of HIV and AIDS through outpatient care and to the introduction of effective anti-malaria drugs.

Figure 3.27. Trend in Average Length of Inpatient Stay (days)



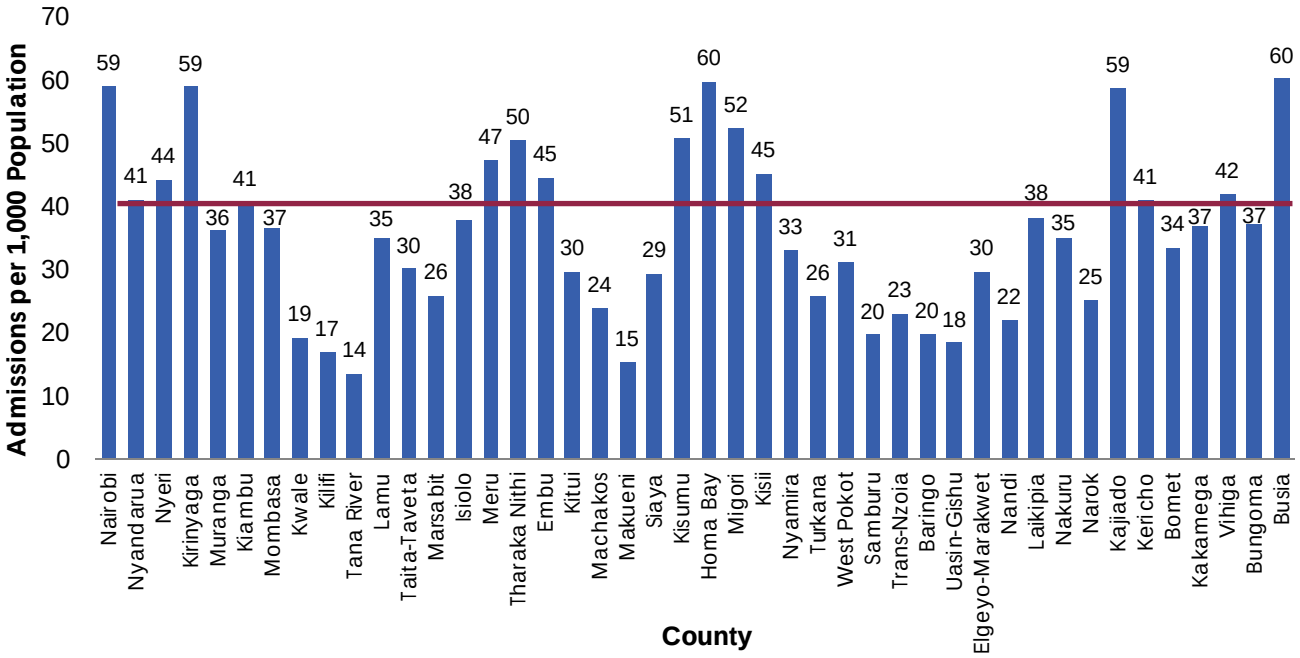
Reduction in the average length of stay means that more hospitalisations can be achieved without significantly increasing resources. Careful monitoring, however, is required to ensure that reductions are achieved through advances in technology and quality of care, not through inappropriately early discharges. Strong health information systems can monitor admission rates and other key indicators to ensure that patient safety and the quality of services do not suffer as efficiency and productivity improve.

The data showed that the average length of stay did not vary considerably across wealth quintiles; ALOS was 6.3 days for the poorest, 6.0 days for the second, 6.7 days for the middle, 7.4 days for the fourth, and 6.7 days for the richest quintile.

Inter-county variations in inpatient admission rates

Inter-county variations in per capita utilisation of inpatient services are given in Figure 3.28. Only 16 counties reported high per capita admission rates (i.e., above the national average of 38 admissions per 1,000 population). These counties also reported high proportions of individuals who required hospitalisation, which then translates to a high number of admissions per 1,000 population.

Figure 3.28. Average Annual Distribution of Admissions per 1,000 Population by Counties, 2013



CHAPTER 4: HOUSEHOLD HEALTH EXPENDITURES

This section provides valuable information on trends and patterns of household spending on healthcare in Kenya. Total household spending on healthcare is the summation of household expenditures on outpatient, inpatient, and routine health expenses. To generate the outpatient expenditure, households were requested to report illness visits made to a health provider in the four weeks preceding the survey and the amount of money paid (P) for each visit. A sum of Ps was then calculated and annualised to obtain household expenditure on outpatient services. The same methodology was adopted to generate annual expenditures for routine expenses.

In the case of households' inpatient expenditure, information on all admissions in the last 12 months was collected, including the corresponding expenditures for each admission. A sum of expenditures for all admissions was estimated to give the total household expenditure for inpatient services.

Based on the above estimation processes, the total annual out-of-pocket expenditure on health (sum of outpatient, routine health expenses, and inpatient spending) was projected to have decreased in nominal terms, from KShs 61.5 billion in 2003 to KShs 43.9 billion in 2007. Out-of-pocket health expenditures then rose to KShs 62.1 billion in 2013, an increase of about 42 percent.

In 2013, OOP spending on outpatient care accounted for approximately 78 percent (KShs 48.4 billion) of total household health expenditures, while spending on inpatient services accounted for close to 22 percent (KShs 13.7 billion) (Table 4.1). The average annual per capita spending for all outpatient and inpatient visits in 2013 was estimated at KShs 1,254 and Kshs 355, respectively.

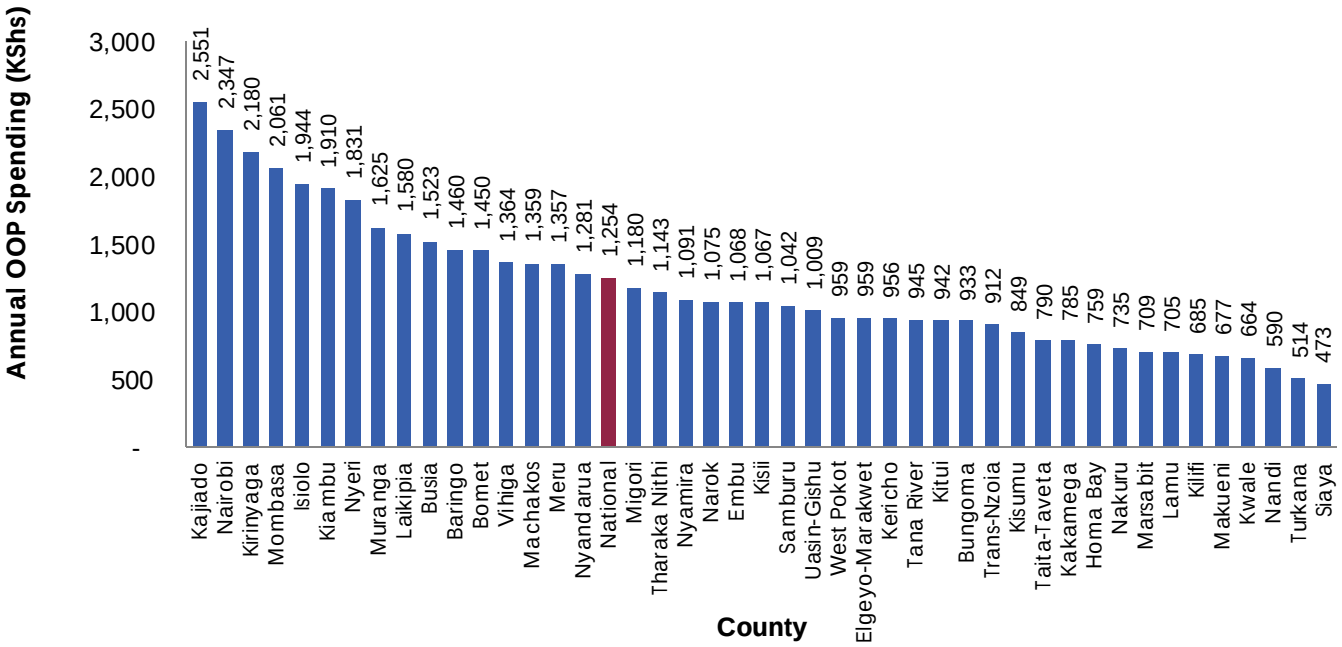
Table 4.1. Trends in Out-of-pocket Expenditures

		2003	2007	2013
Outpatient[5]	Overall spending (KShs billions)	50.4	25.1	48.4
	Per capita spending (KShs)	1570	676	1,254
Inpatient	Overall spending (KShs billions)	11.1	18.8	13.7
	Per capita spending (KShs)	343	505	355
Total	Overall spending (KShs billions)	61.5	43.9	62.1
	Per capita spending (KShs)	1,913	1,181	1,609

The annual per capita spending on outpatient care varied considerably between counties with Kajiado, Nairobi, Mombasa, and Kirinyaga spending above KShs 2,000 on outpatient care compared to Siaya and Turkana, both of which spent around KShs 500. This is illustrated in Figure 4.1.

[5] Here, outpatient includes routine health expenses.

Figure 4.1. Annual Per Capita Out-of-pocket Spending on Outpatient by County, 2013

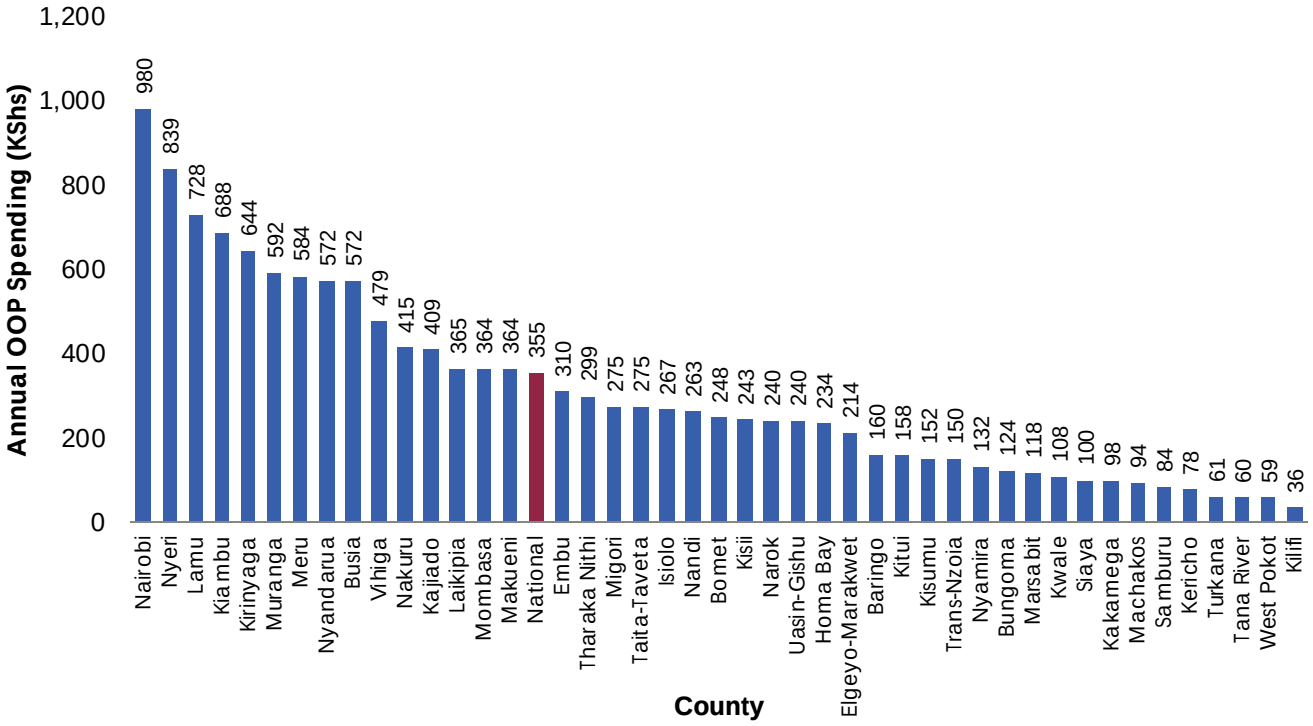


These variations can be attributed to underlying differences in the distribution of socioeconomic factors which influence the use of healthcare services. Poorer counties, including Turkana, Lamu, and Makueni, spent less on health in per capita terms when compared with richer counties such as Nairobi, Kajiado, and Kirinyaga.

Admissions are very expensive events, but relatively rare. The annual average per capita spending on inpatient treatment in nominal terms increased from KShs 343 in 2003 to KShs 505 in 2007, and then declined to KShs 355 in 2013.

As shown in Figure 4.2**,** 15 counties spent more than the national average on hospital admissions. Nairobi spent the most (KShs 980 per capita) while Kilifi spent the least (KShs 36 per capita).

Figure 4.2. Annual Per Capita Out-of-pocket Expenditure on Admissions by County, 2013



Expenditure by Sex

Across all expenditure types, females spent more on healthcare than males (Table 4.2). Females (KShs 1,469) spent an estimated 43 percent more on outpatient care than males (KShs 1,026) and nearly 41 percent more than males on all types of health services (KShs 1,869 spent by female versus KShs 1,329 by males).

Table 4.2. Annual Per Capita Health Spending by Type of Service and Sex, 2013

	Annual Per Capita Health Spending (KShs)		
	Outpatient	Inpatient	Overall
Male	1,026	303	1,329
Female	1,469	400	1,869
Overall	1,254	355	1,609

Expenditure by Residence

Table 4.3 presents household health expenditures by residence. There is a substantial rural/ urban difference in per capita health spending, with urban households spending 81 percent more (KShs 2,279) than the rural households (KShs 1,259) on all inpatient and outpatient health services/visits.

Table 4.3. Annual Per Capita Health Spending by Type of Service and Residence, 2013

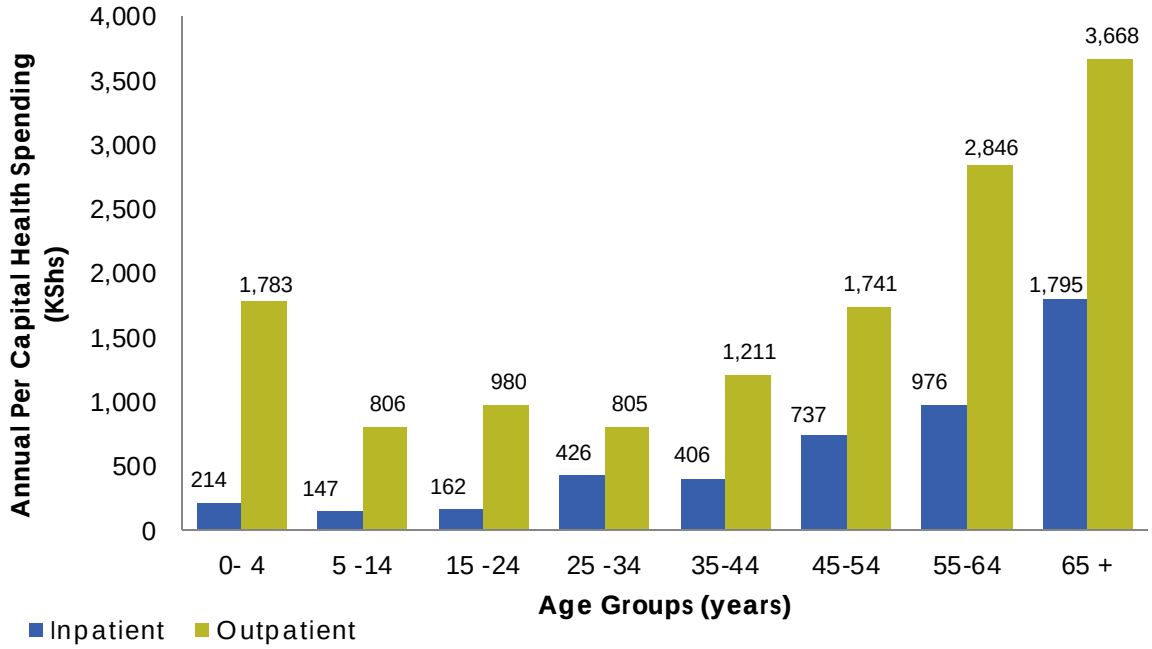
Residence	Annual Per Capita Health Spending (KShs)		
	Outpatient	Inpatient	Total
Urban	1,733	546	2,279
Rural	1,003	256	1,259

Expenditure by Age

The *2013 KHHEUS* also provides household health expenditure data by age (Figure 4.3). For inpatient and outpatient care, the highest expenditures are for Kenyans ages 65 years and older, although children under five years old have also reported high health expenditures. From age five, health expenditures per capita increased steadily with age. The 0–4 and 25–34 age groups are an exception to the steady increase in per capita expenditure.

Overall, children under five years old have a higher expenditure than all age groups with the exception of those 55–64 years and 65 years and older. The 25–34 year age group had a higher expenditure on inpatient services than age groups 0–4, 5–14, 15–24, and 35–44, and a lower expenditure for outpatient services than all other age groups.

Figure 4.3. Annual Per Capita Health Spending by Type of Service and Age, 2013



Expenditure by Levels of Education

Table 4.4 presents the annual per capita out-of-pocket spending on health for inpatient and outpatient care by level of education. Except for those without formal education, the data shows an inverse relationship between levels of education and annual per capita expenditure on health.

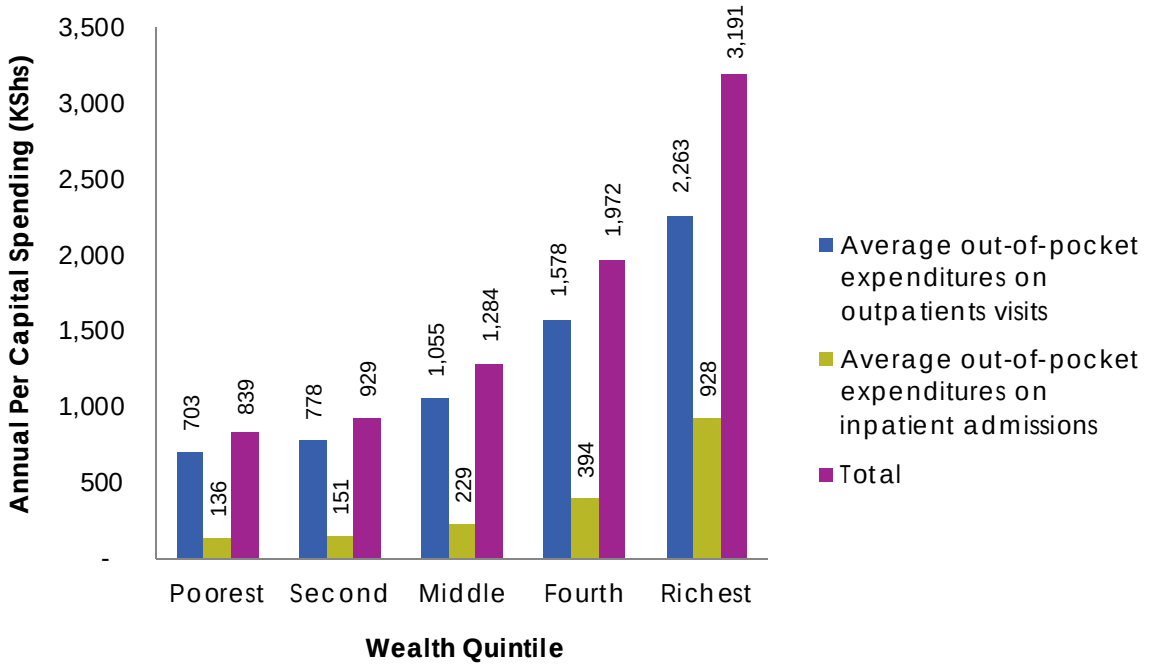
Table 4.4. Annual Per Capita Expenditure on Health by Households by Education Levels, 2013

Level of Education	Annual Per Capita Expenditure (KShs)		
	Outpatient	Inpatient	Total
None	1,683	310	1,993
Primary	1,072	265	1,337
Post-primary/secondary	1,211	392	1,603
College and university	1,647	1,150	2,797
Overall (all education levels)	1,254	355	1, 609

Expenditure by Wealth Index

Figure 4.4 shows the total annual per capita out-of-pocket spending on outpatient and inpatient healthcare by households in different wealth quintiles. The amount spent increased systematically with households' increased wealth status. Households in the richest quintile spent more than three times on outpatient care and six times on inpatient care compared to those in the poorest and second-poorest quintiles, indicating inequalities in health spending.

Figure 4.4. Annual Per Capita Spending on Outpatient and Inpatient Care by Wealth Quintile, 2013

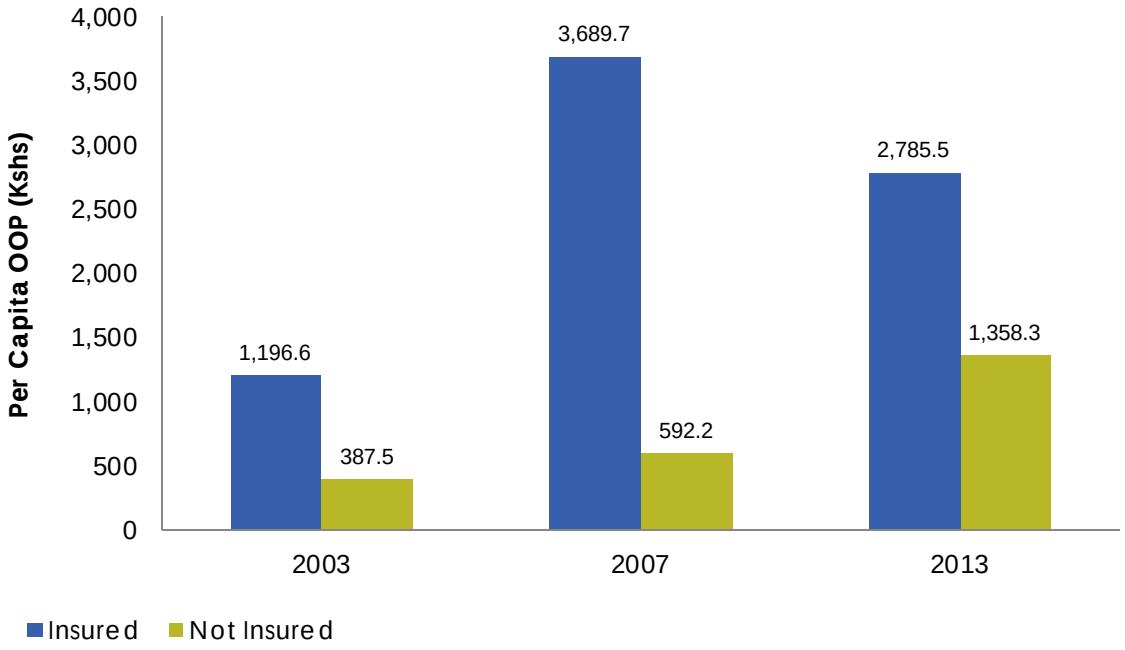


Expenditure by Insurance Status

Results from the survey demonstrate expenditure differences between the insured and the uninsured in Kenya. As shown in Figure 4.5, those with health insurance coverage consistently spent more on healthcare (inpatient and outpatient) than those without insurance.

The population that sought care and had health insurance coverage spent, on average, close to KShs 1,197 compared to KShs 387.50 spent by the uninsured in 2003. The annual per capita spending by the insured, which rose to Kshs 3,690 in 2007, declined to KShs 2,785 in 2013.

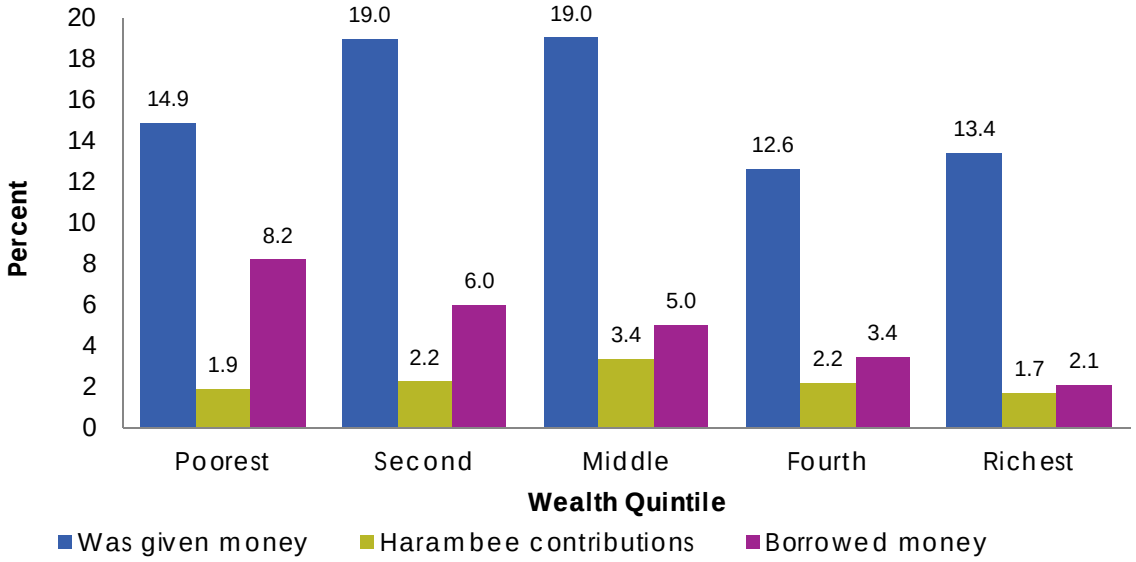
Figure 4.5. Annual Per Capita Expenditures by Health Insurance



Coping Mechanisms

Those without health insurance or readily available cash to pay for healthcare services resorted to donations, borrowing, and *harambees* [6] to pay for care (Figure 4.6). The majority of individuals in all wealth quintiles were given money by friends and/or relatives to pay for inpatient care. Others borrowed money and some paid through *harambee* contributions.

Figure 4.6. Coping Mechanisms: Percent Distribution of Admissions by Sources of Payment, 2013



[6] *Harambee* is Kiswahili for "pulling resources together."

Catastrophic Health Spending

One of the main goals of a country's health system is to provide financial protection against the risks associated with having to pay for healthcare through OOP payments. Households without financial protection are, at times, forced to pay substantial medical bills when seeking medical care. Out-of-pocket payments have the potential to interrupt households' material living standards because the money they spend on healthcare might otherwise have been spent on items such as food and clothing (O'Donnell et al., 2008). A number of methods to estimate the impact of out-of-pocket healthcare payments on living standards have been applied in recent times. One of the two standard methods is to measure how many households have to devote a large portion of the resources at their disposal for healthcare.

When healthcare payments are large, relative to a household's budget, the disruption to living standards can be catastrophic. Specifically, health spending is considered catastrophic when out-of-pocket health spending exceeds a certain proportion of total household consumption (10% of total expenditure and 40% of non-food expenditure thresholds are the most commonly used). The incidence of catastrophic health spending is therefore the proportion of households that exceed either of these two thresholds.

All three rounds of the KHHEUS showed mixed results of the incidence of catastrophic health spending. As shown in Table 4.5, 6.7 percent of households allocated at least 10.0 percent of their total expenditure to medical treatment costs in 2003, compared to 15.5 percent and 12.7 percent in 2007 and 2013, respectively.

Table 4.5. Incidence of Catastrophic Health Spending

2003		2007		2013	
OOP as share of total expenditure	OOP as share of non-food expenditure	OOP as share of total expenditure	OOP as share of non-food expenditure	OOP as share of total expenditure	OOP as share of non-food expenditure
Headcount (%)	**Headcount (%)**	**Headcount (%)**	**Headcount (%)**	**Headcount (%)**	**Headcount (%)**
10% threshold	40% threshold	10% threshold	40% threshold	10% threshold	40% threshold
6.7	5.2	15.5	11.4	12.7	6.2

At the 40 percent of non-food expenditures threshold, the results were quite different. For instance, in 2003, 5.2 percent of households who utilised healthcare services experienced catastrophic expenditures, compared to 11.4 percent in 2007 and 6.12 percent in 2013.

Moreover, the rates of catastrophic expenditures varied considerably between counties. For instance, in 2013, 22 counties reported a rate of catastrophic health spending (>/= 40 of total non-food expenditure on health) that was higher than the national average, suggesting the influence of poverty (Figure 4.7).

Figure 4.7. Proportion of Household Spending >/= 40 Percent of Total Non-food Expenditure on Health, 2013

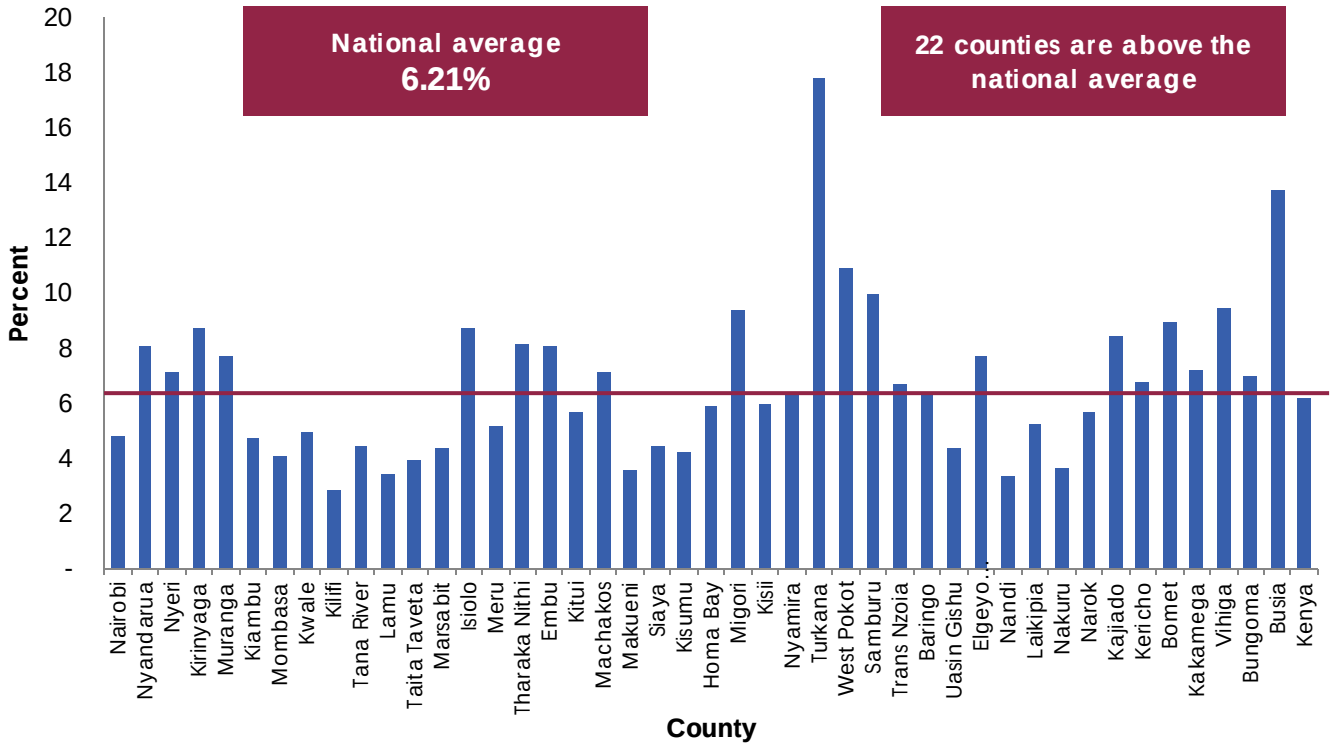
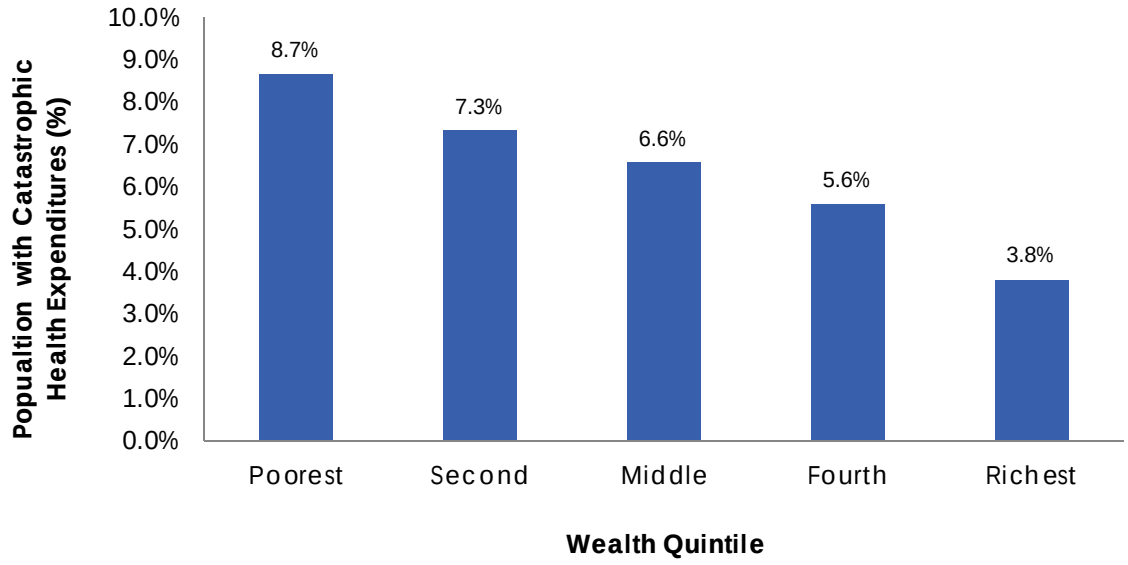


Figure 4.8 shows the incidence of catastrophic health expenditures by socioeconomic groups (wealth quintiles) for the >/= 40 percent of total non-food expenditure on health threshold. The chart shows an inverse relationship between catastrophic health headcount and the >/= 40 of total non-food expenditure on health threshold. The poorest had the highest number of households (8.7%) experiencing catastrophic health expenditures while the richest quintile had the lowest incidence of catastrophic expenditures (3.8%).

Figure 4.8. Out-of-pocket Spending as a Share of Non-food Expenditure (40%), 2013



CHAPTER 5: HEALTH INSURANCE COVERAGE

Background

Healthcare financing in many developing countries is predominantly based on OOP payments and has low levels of prepayment insurance mechanisms. In the absence of adequate insurance coverage, illness both reduces the well-being of individuals and increases the risk of impoverishment due to high healthcare costs. Given this, it is now widely acknowledged that healthcare expenditures can drive individuals and households into poverty.

The level and frequency of healthcare utilisation is consistent with the health insurance coverage in a country. The *2013 KHHEUS* included a module of questions concerning health insurance coverage. Information was obtained for each person listed on the household questionnaire. This chapter outlines findings on insurance coverage and the socioeconomic and demographic characteristics of the insured and uninsured populations.

Types of Insurance Coverage

In Kenya, there are various types of health insurance, including public, private, and community-based insurance schemes. NHIF is the government mandatory insurance scheme, which is compulsory for the formal employment sector and voluntary for the informal sector.

It is important to note that several survey respondents reported having more than one health insurance coverage. Among those insured, NHIF covers 88.4 percent, private insurance 9.4 percent, community-based insurance 1.3 percent, and other forms of insurance 1.0 percent (Table 5.1).

Table 5.1. Insurance Coverage by Type, 2013

Insurance Type	Population Covered (%)*
NHIF	88.4
Private insurance	9.4
Community-based health insurance	1.3
Others	1.0

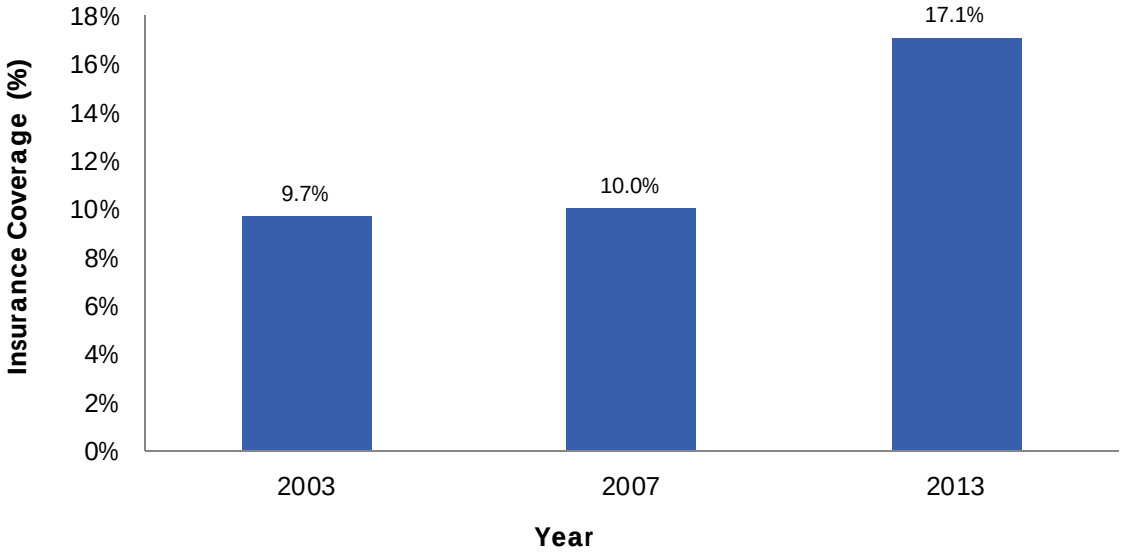
** Numbers do not add up to 100% because multiple choices were allowed*

Annex 5.1 presents the various types of insurance coverage by county. NHIF had the widest coverage across all counties, ranging from 74 percent in Kirinyaga to 100 percent in Narok. The prominence of NHIF is due, in part, to the requirement under Kenya's health insurance law for all those who are formally employed to be enrolled with NHIF. Also, low premiums and the accessibility of NIHF's countrywide network make it a popular choice. Private insurance was highest in Nairobi at 22.2 percent; most private insurance companies are located in urban areas and do not have countrywide coverage. Community-based insurance was highest in Kirinyaga, representing 7 percent of those with health insurance.

Insurance Coverage

Insurance coverage in Kenya improved from 9.7 percent in 2003 and 10 percent in 2007, to 17.1 percent in 2013 (Figure 5.1). This trend shows that there was no significant growth between 2003 and 2007. However, some notable growth occurred between 2007 and 2013.

Figure 5.1. Trends in Health Insurance Coverage

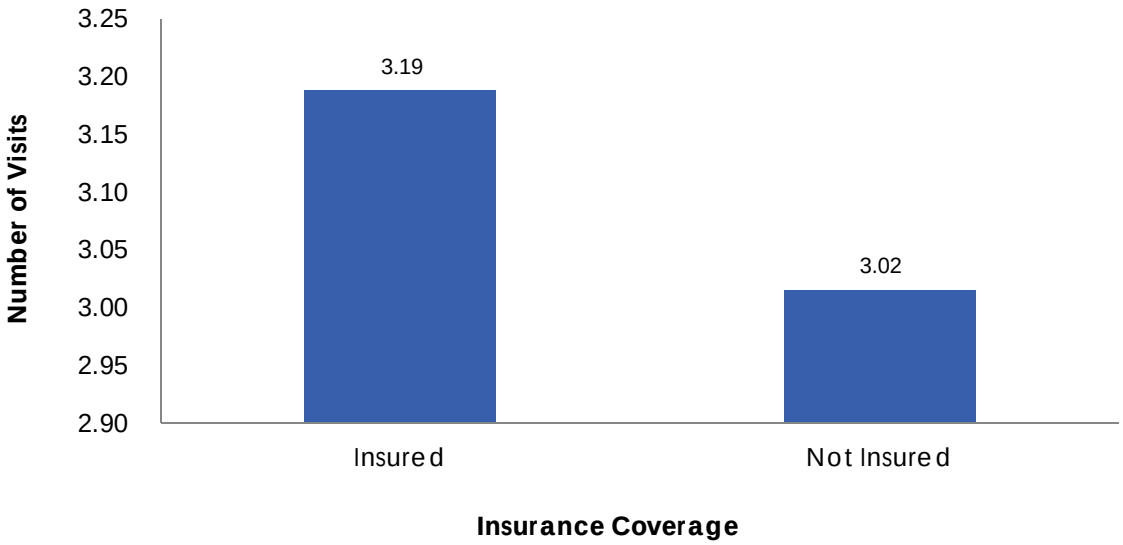


Some of the reasons behind the rise in coverage can be explained. Most notably, while there is room for improvement, there has been a deliberate effort by the NHIF to cover the informal sector on a voluntary basis.

Services Utilisation by Insured and Uninsured

The 2013 survey results showed that both insured and uninsured persons had almost the same number of per capita visits: 3.2 and 3.0 visits for insured and uninsured, respectively. This indicates that insurance was not significant in explaining the demand for outpatient care (Figure 5.2). However, for inpatient services, the insured had a higher utilisation rate (76 admissions per 1,000 population) compared with the uninsured (30 admissions per 1,000 population), demonstrating that, in some instances, insurance has been shown to enhance access to healthcare.

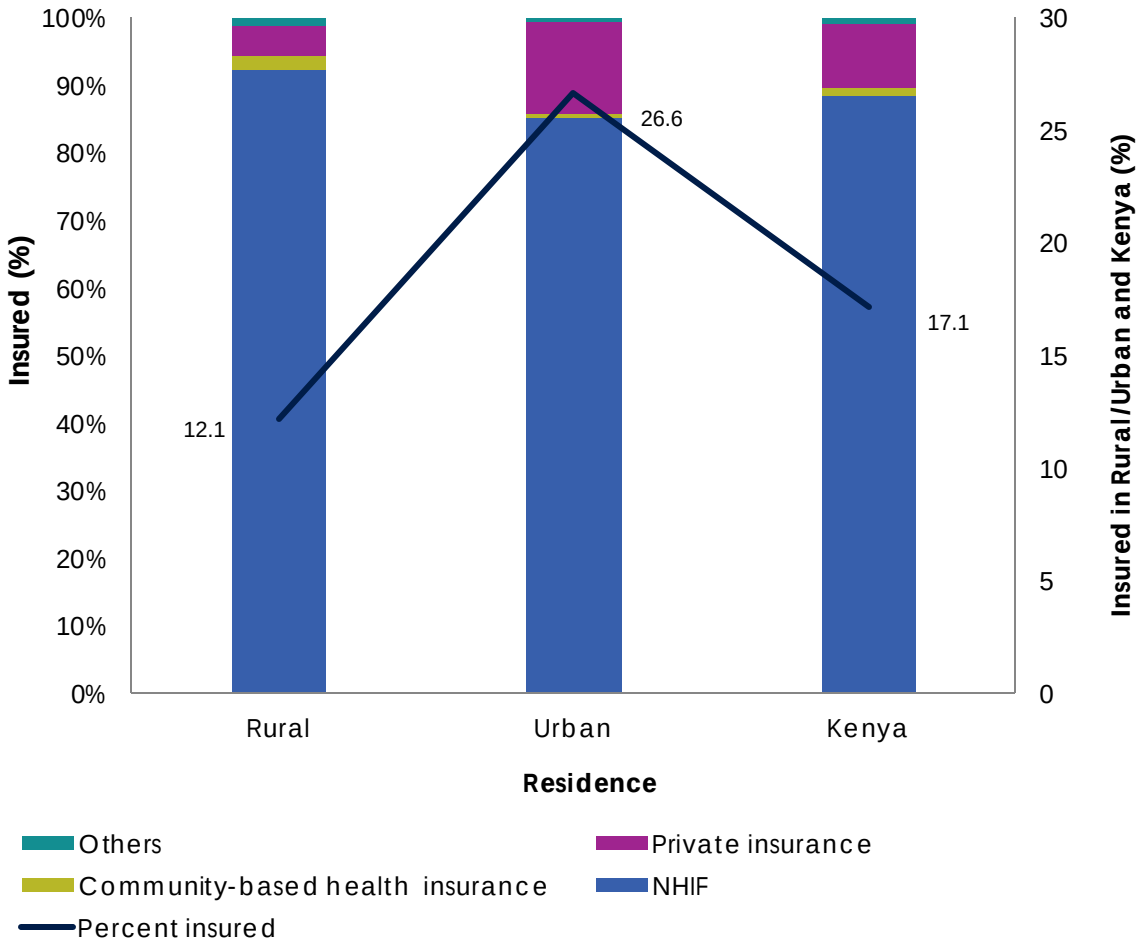
Figure 5.2: Per Capita Visits for Insured and Uninsured Individuals, 2013



Coverage by Residence

The 2013 survey results showed that insurance coverage is higher among the urban population, at 26.6 percent, than the rural population (12.1%). The high coverage for the urban areas is most likely due to higher levels of employment and therefore a greater ability to pay for health insurance. NHIF coverage dominates in both rural and urban areas at 92.2 percent and 85.2 percent, respectively. Private insurance covers far fewer people: just over four percent in rural areas and not quite 14 percent in urban areas. Figure 5.3 summarises the health insurance coverage by area of residence.

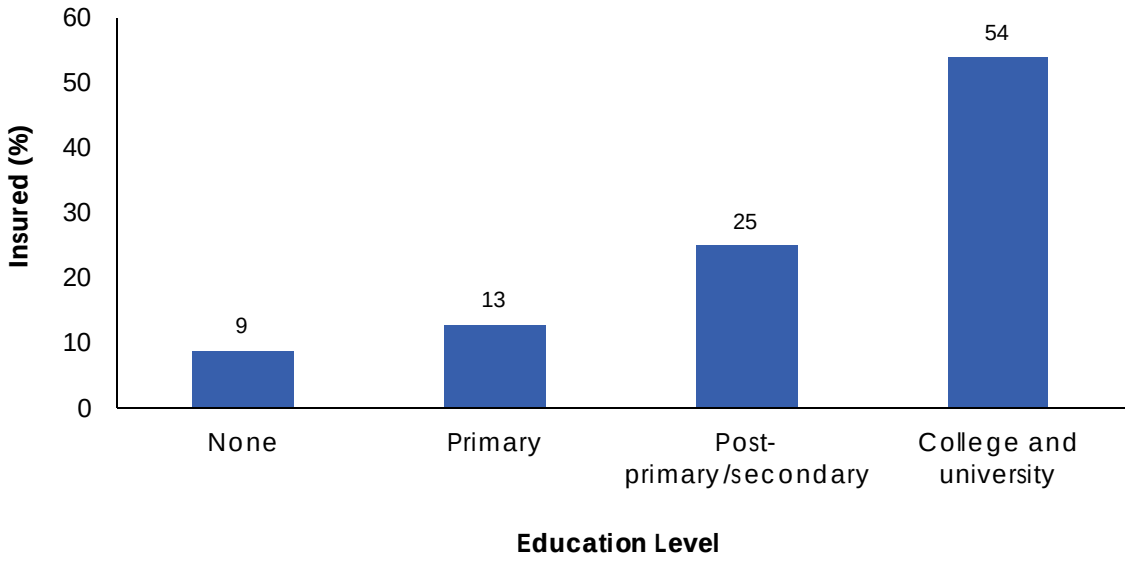
Figure 5.3 Insurance Coverage by Residence, 2013



Coverage by Education, Employment, and Health Status

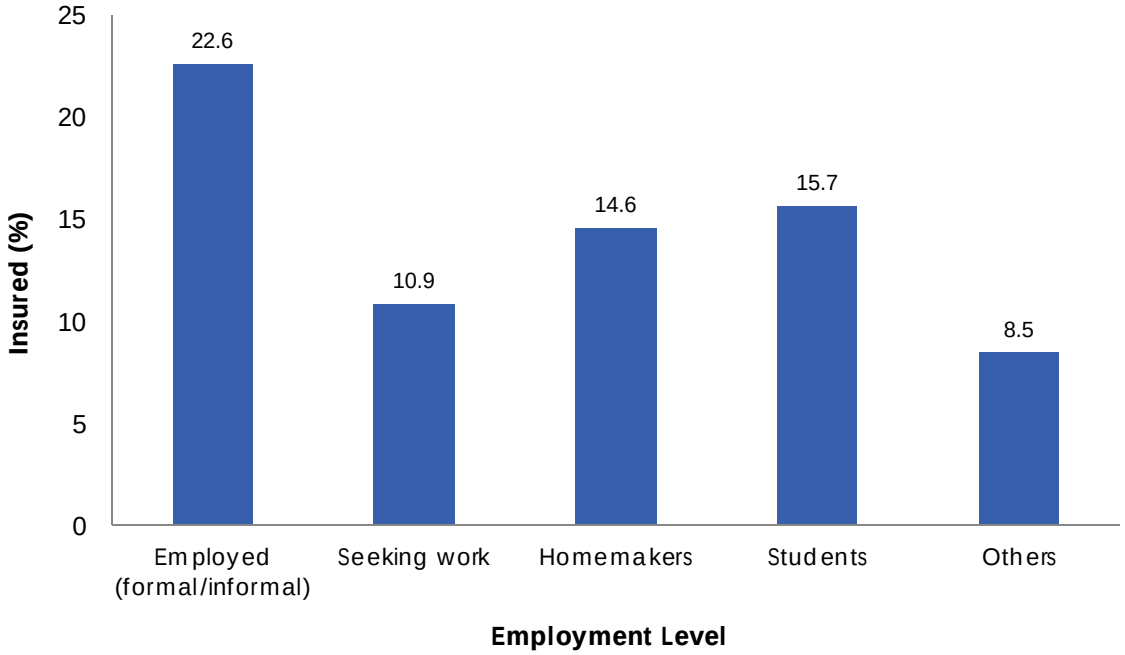
The survey results showed that insurance coverage was highest (54%) among those with a college and university education and lowest among those without any form of education (9%) (Figure 5.4).

Figure 5.4 Health Insurance Coverage by Education Levels, 2013



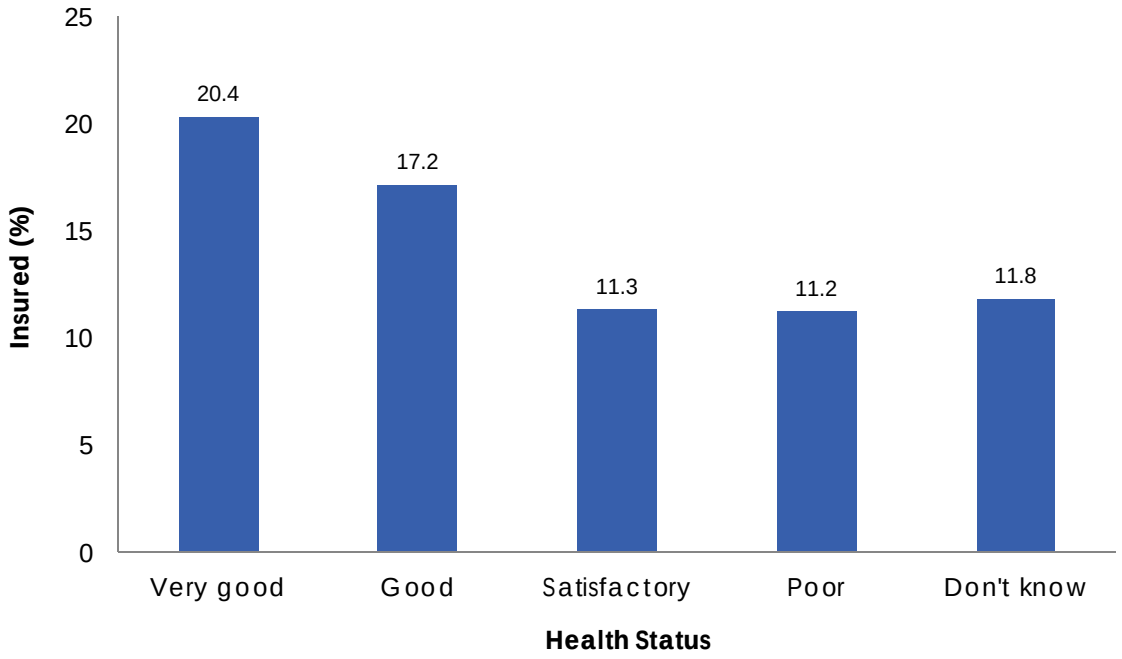
Coverage was also highest among those employed (formal and informal sectors) at 23 percent, an increase from the 14 percent recorded in 2007 (Figure 5.5).

Figure 5.5. Health Insurance Coverage by Employment, 2013



Coverage was also highest among respondents who reported their health status as "very good" and "good," which was also the case in 2007 (Figure 5.6).

Figure 5.6. Health Insurance Coverage by Health Status, 2013



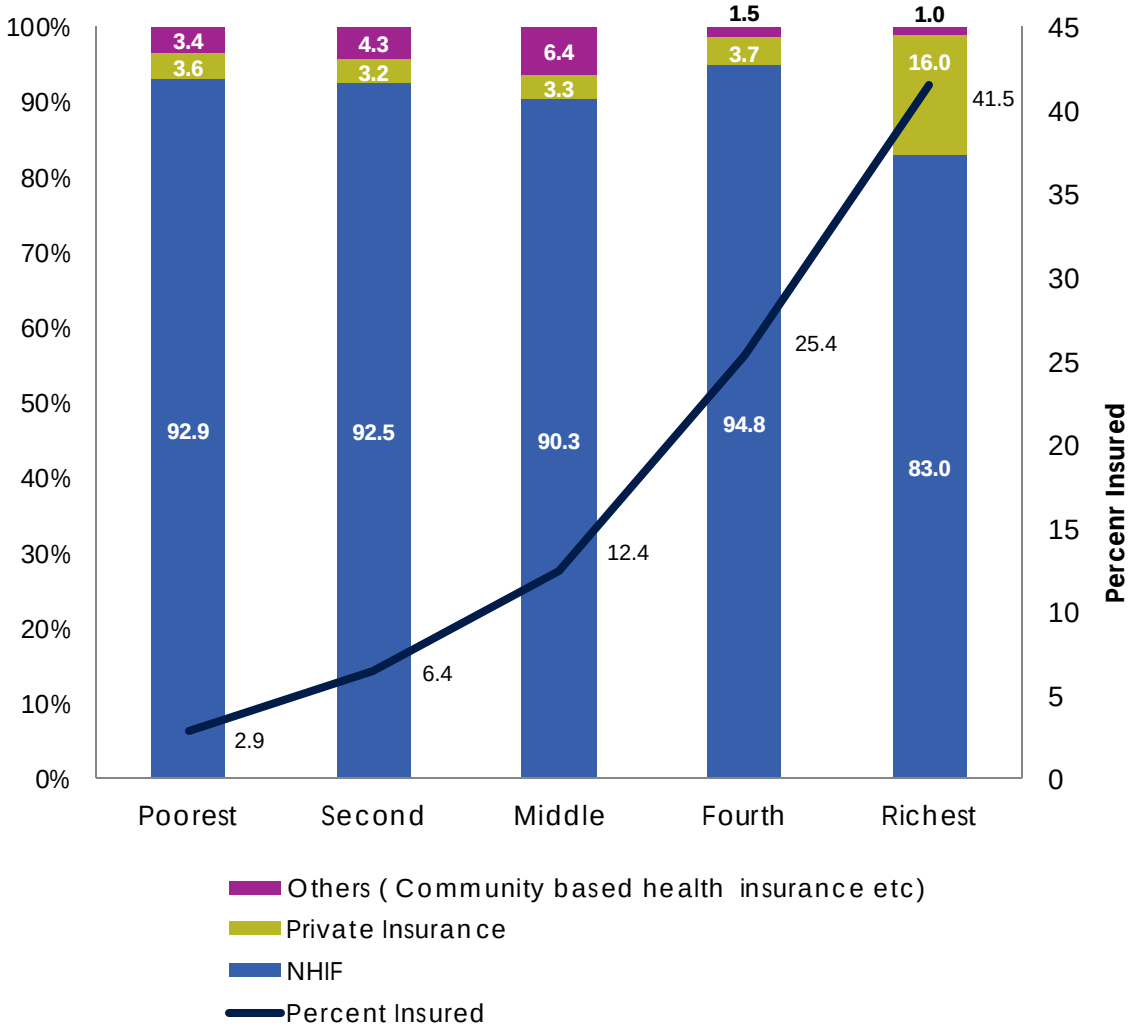
Coverage by Wealth Index

There has been an elaborate effort by the government to extend health insurance to more Kenyans. The NHIF and community-based health insurance groups, among others, have led efforts to extend coverage to those in the informal sector and the poorest quintile. However, the 2013 survey results raise concerns about the effectiveness of these initiatives.

Coverage of the poorest quintile remains low at 2.9 percent. The majority of those insured, regardless of income group, were covered by the NHIF (just under 93% of the poorest and 83% of the richest). Community-based insurance covered mostly the middle quintile at 2.8 percent, while private insurance largely covered the richest quintile at 17 percent.

Figure 5.7 highlights the insurance coverage in the country among different income groups. It also highlights the depth of coverage by NHIF, private, and community-based insurance. Overall, the fourth and richest quintiles have the highest coverage (25.4% and 41.5% respectively), an increase of 31 percent from 2007.

Figure 5.7. Depth of Health Insurance Coverage, 2013



Coverage by County

Table 5.2 shows health insurance coverage by county. Coverage is highest in Kiambu (34%), Nyeri (32.9%), Nairobi (31.9%), Kericho (31.5%), Kirinyaga (29%), Bomet (25.4%), and Laikipia (23.1%).

The counties with the lowest coverage include Lamu (6.7%), Samburu (6.7%), Trans-Nzoia (5.4%), Tana River (5.1%), Kwale (4.6%), Turkana (3.0%), and Marsabit (1.8%). This disparity in the counties can be attributed to several factors. For example, Nairobi county is the capital city, with a large number of people employed (formal and informal sectors) and with high living standards. Furthermore, Kiambu, Nyeri, Kericho, Kirinyaga, and Bomet are generally richer counties.

These results show that there is a need to focus on improving health insurance coverage in the poorest performing counties. Although inequality in living standards is expected between counties, there are pockets of poverty that need to be targeted even in those counties that appear to be rich.

Table 5.2. Insurance Coverage by County, 2013

Below 9%		10%–19%		21%–29%		30+%	
County	Population with Insurance Coverage (%)	County	Population with Insurance Coverage (%)	County	Population with Insurance Coverage (%)	County	Population with Insurance Coverage (%)
Marsabit	1.8	Bungoma	10.7	Nyandarua	20.0	Kericho	31.5
Turkana	3.0	Migori	11.3	Mombasa	20.9	Nairobi	31.9
Kwale	4.6	Busia	11.3	Nakuru	21.9	Nyeri	32.9
Tana River	5.1	Isiolo	11.7	Embu	22.6	Kiambu	34.0
Trans Nzoia	5.4	Narok	11.8	Laikipia	23.1		
Samburu	6.7	Kajiado	12.4	Bomet	25.4		
Lamu	6.7	Nandi	13.1	Kirinyaga	29.0		
West Pokot	7.1	Kisumu	13.8				
Kilifi	7.2	Taita-Taveta	13.9				
Kitui	8.1	Baringo	14.7				
Makueni	8.8	Elgeyo-Marakwet	15.2				
Homa Bay	9.0	Nyamira	16.1				
Vihiga	9.0	Tharaka Nithi	17.1				
Siaya	9.4	Kisii	17.9				
Kakamega	9.7	Uasin-Gishu	18.2				
		Meru	19.5				
		Muranga	19.7				
		Machakos	19.7				

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ANNEXES

Annex 1.1. Distribution of Clusters and Households by County and Place of Residence, 2013

County	Cluster Type			Household			Household Response Rates		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Nairobi	-	32	32	-	793	793		91.0	91.0
Nyandarua	20	10	30	498	250	748	89.0	83.6	87.2
Nyeri	18	11	29	450	275	725	89.6	92.7	90.8
Kirinyaga	16	13	29	400	325	725	88.0	85.5	86.9
Muranga	21	9	30	524	225	749	91.0	87.6	90.0
Kiambu	12	17	29	300	421	721	88.3	77.9	82.2
Mombasa	-	34	34	-	850	850		83.1	83.1
Kwale	22	12	34	549	300	849	87.6	84.0	86.3
Kilifi	19	14	33	475	350	825	90.5	80.9	86.4
Tana River	26	7	33	609	163	772	84.6	87.1	85.1
Lamu	22	12	34	550	300	850	87.6	85.3	86.8
Taita-Taveta	23	11	34	575	275	850	91.1	86.2	89.5
Marsabit	21	10	31	518	262	780	87.1	81.7	85.3
Isiolo	19	14	33	471	350	821	83.4	82.3	82.9
Meru	24	8	32	599	200	799	91.0	81.0	88.5
Tharaka Nithi	23	9	32	575	225	800	88.0	84.9	87.1
Embu	22	11	33	538	272	810	89.0	86.0	88.0
Kitui	23	10	33	575	250	825	90.1	84.0	88.2
Machakos	15	17	32	375	424	799	92.3	93.9	93.1
Makueni	24	8	32	600	200	800	88.3	81.0	86.5
Siaya	15	14	29	375	350	725	93.3	90.0	91.7
Kisumu	14	14	28	350	374	724	91.4	85.3	88.3
Homa Bay	16	12	28	400	300	700	88.8	88.7	88.7
Migori	15	14	29	374	350	724	92.8	86.0	89.5
Kisii	19	10	29	475	250	725	93.7	87.6	91.6
Nyamira	21	8	29	524	200	724	89.5	90.0	89.6
Turkana	20	9	29	395	168	563	99.7	100.0	99.8
West Pokot	22	7	29	550	174	724	86.4	81.0	85.1
Samburu	17	12	29	425	300	725	87.1	88.3	87.6
	19	11	30	475	276	751	85.9	84.1	85.2

County	Cluster Type			Household			Household Response Rates		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Baringo	19	11	30	451	274	725	91.1	83.2	88.1
Uasin-Gishu	15	14	29	375	350	725	91.2	86.9	89.1
Elgeyo-Marakwet	21	9	30	523	224	747	94.1	96.9	94.9
Nandi	22	8	30	534	199	733	90.8	89.9	90.6
Laikipia	18	11	29	450	273	723	79.1	75.8	77.9
Nakuru	14	15	29	350	374	724	85.1	89.8	87.6
Narok	22	7	29	550	175	725	86.7	82.3	85.7
Kajiado	15	15	30	375	375	750	78.7	69.3	74.0
Kericho	14	15	29	350	375	725	89.7	84.8	87.2
Bomet	22	8	30	550	200	750	92.2	95.5	93.1
Kakamega	21	9	30	524	225	749	92.2	88.9	91.2
Vihiga	18	12	30	449	300	749	89.1	88.0	88.7
Bungoma	20	9	29	500	225	725	91.0	89.8	90.6
Busia	21	8	29	523	200	723	89.3	85.0	88.1
Total	810	531	1,341	20,028	13,221	33,249	89.2	85.8	87.8

Annex 2.1. Percentage Distribution of Sampled Population by Various Characteristics, 2013

Background Characteristics		Population	%
Sex	Male	19,105,418	49.5
	Female	19,514,973	50.5
Age	0–4	5,222,039	13.5
	5–14	10,899,175	28.2
	15–24	7,583,825	19.6
	25–34	5,748,376	14.9
	35–44	3,855,179	10.0
	45–54	2,439,595	6.3
	55–64	1,445,765	3.7
	65 +	1,426,437	3.7
Marital status	Never married /never lived together	23,495,321	60.8
	Married/ living together	12,317,174	31.9
	Divorced /separated	774,051	2.0
	Widowed	1,321,175	3.4
	NS	712,671	1.8
Level of education	Primary	21,247,949	55.0
	Post-primary/ secondary	7,702,643	19.9
	College and university	2,468,385	6.4
	None	7,201,414	18.6
Employment status	Working (formal/ informal employment)	13,165,604	58.5
	Seeking work	1,120,771	5.0
	Homemakers	2,638,709	11.7
	Students	4,404,989	19.6
	Others	1,169,103	5.2

Background Characteristics		Population	%
Residence	Rural	25,361,149	65.7
	Urban	13,259,242	34.3
Health coverage	Insured	6,610,054	17.1
	Not insured	32,010,337	82.9
Rating of own health	Very good	9,970,647	25.8
	Good	22,818,772	59.1
	Satisfactory	4,338,185	11.2
	Poor	1,301,366	3.4
	Don't know	11,142	0.0

Annex 3.1. Percentage of Distribution of Outpatient Visits by Type of Healthcare Provider, 2013

		Health Facility by Type/Ownership				
		Public[1]	Private[2]	Faith-based[3]	Other[4]	Total Outpatient Visits
County	Nairobi	28.7	48.9	11.3	11.1	999,099
	Nyandarua	60.6	28.5	10.3	0.7	161,649
	Nyeri	66.8	26.4	6.0	0.7	186,934
	Kirinyaga	62.7	26.8	10.2	0.2	204,870
	Muranga	72.9	18.5	7.7	0.9	342,021
	Kiambu	46.8	43.5	8.6	1.2	385,418
	Mombasa	27.3	63.0	7.7	2.0	219,227
	Kwale	66.7	26.8	4.8	1.7	142,517
	Kilifi	55.1	36.2	6.9	1.8	285,534
	Tana River	68.8	24.1	6.0	1.1	62,471
	Lamu	56.9	31.8	5.3	6.0	24,543
	Taita-Taveta	75.6	16.8	6.8	0.8	68,725
	Marsabit	54.1	15.3	29.5	1.1	29,080
	Isiolo	48.3	36.4	12.8	2.5	22,653
	Meru	51.5	30.8	17.3	0.3	336,629
	Tharaka Nithi	55.6	27.5	16.5	0.4	93,736
	Embu	72.9	20.4	5.7	1.0	140,376
	Kitui	70.4	21.5	7.7	0.5	233,588
	Machakos	55.3	37.5	6.1	1.1	333,708
	Makueni	65.6	26.4	7.0	1.0	177,500
	Siaya	74.3	19.2	4.5	2.0	287,108
	Kisumu	59.9	30.8	7.1	2.2	282,647
	Homa Bay	62.8	27.6	8.2	1.4	236,986
	Migori	68.3	21.6	8.9	1.2	380,602
	Kisii	71.9	15.6	11.1	1.3	269,498
	Nyamira	71.4	23.9	3.9	0.8	136,533
	Turkana	68.1	7.0	22.3	2.6	130,017
	West Pokot	66.7	15.2	10.7	7.5	129,540
	Samburu	68.1	12.2	19.6	0.1	32,832
	Trans-Nzoia	65.8	24.8	8.4	1.1	178,898
	Baringo	77.4	15.5	4.0	3.1	132,229
	Uasin-Gishu	73.7	20.5	4.7	1.1	154,544
	Elgeyo-Marakwet	75.7	11.2	12.4	0.6	66,968
	Nandi	78.0	16.2	4.9	0.9	140,769
	Laikipia	55.8	33.7	8.9	1.5	108,453
	Nakuru	62.2	30.8	6.8	0.2	274,012
	Narok	62.5	23.1	14.3	0.1	161,830
	Kajiado	54.6	35.6	9.5	0.3	173,430
	Kericho	72.3	22.6	4.5	0.6	202,086
	Bomet	73.1	16.8	8.6	1.6	150,937

		Health Facility by Type/Ownership				
		Public[1]	Private[2]	Faith-based[3]	Other[4]	Total Outpatient Visits
	Kakamega	54.0	39.0	5.1	1.9	325,397
	Vihiga	59.9	32.4	7.2	0.5	147,372
	Bungoma	51.2	42.0	6.5	0.3	428,077
	Busia	62.2	28.9	8.0	0.9	126,260
Residence	Rural	66.7	23.5	8.5	1.3	5,807,652
	Urban	44.1	43.0	8.8	4.1	3,299,651
Sex	Male	56.4	32.2	8.5	2.9	3,739,578
	Female	60.0	29.3	8.8	1.9	5,316,740
Age group (years)	0–4	63.9	21.6	9.1	5.4	2,217,842
	5–14	60.8	30.8	6.9	1.5	1,771,188
	15–24	56.9	33.5	8.9	0.7	1,162,123
	25–34	54.3	36.7	7.7	1.3	1,203,068
	35–44	53.5	37.2	7.9	1.5	960,943
	45–54	53.6	34.4	10.7	1.4	684,759
	55–64	57.6	31.8	9.1	1.5	491,175
	65 +	57.6	28.9	12.0	1.5	616,205
Marital status	Never married/ never lived together	60.3	28.4	8.2	3.1	4,870,971
	Married/ living together	55.7	33.9	9.0	1.3	3,188,709
	Divorced/ separated	52.8	36.9	9.3	1.0	254,350
	Widowed	58.1	30.1	10.6	1.3	553,335
	Not specified	69.1	19.2	9.6	2.1	188,952
Education level	Primary	60.2	29.8	8.0	1.9	4,494,268
	Post-primary/ secondary	52.1	38.4	8.9	0.6	1,506,792
	College and university	33.8	56.4	8.7	1.1	477,919
	None	63.9	22.2	9.6	4.2	2,577,339
Employment Status	Working (formal/ informal employment)	54.4	35.3	9.0	1.3	3,356,569
	Seeking work	49.8	42.0	7.7	0.5	162,401
	Homemakers	58.7	30.9	8.8	1.7	766,990
	Students	58.3	32.3	8.9	0.5	529,887
	Others	55.8	30.9	12.2	1.2	251,440
Rating of own health status	Very good	56.4	32.8	9.2	1.7	1,885,132
	Good	58.1	31.0	8.1	2.8	4,847,059
	Satisfactory	62.1	28.5	7.8	1.5	1,474,626
	Poor	58.8	26.0	12.5	2.7	796,743
	Don't know	66.6	23.8	9.0	0.5	52,757

		Health Facility by Type/Ownership				
		Public[1]	Private[2]	Faith-based[3]	Other[4]	Total Outpatient Visits
Presence of chronic problem	Not Present	59.2	30.1	8.2	2.5	7,464,103
	Present	55.4	32.6	10.6	1.5	1,643,199
Religion	Christian (Catholic)	56.4	29.7	11.4	2.6	2,139,875
	Christian (Protestant)	60.3	30.0	7.8	2.0	6,079,304
	Muslim	48.5	42.4	7.6	1.4	462,685
	Traditionalist	69.2	22.4	6.8	1.6	94,042
	Atheist	57.5	21.3	14.3	6.9	29,166
	Other	42.6	36.7	6.0	14.6	162,505
Health insurance coverage	Insured	45.1	42.1	10.4	2.4	1,723,807
	Not Insured	61.7	27.8	8.3	2.3	7,332,511
Wealth index quintile	Poorest	69.8	20.0	8.2	2.0	1,698,758
	Second	67.5	24.4	7.0	1.2	1,873,492
	Middle	65.1	25.0	9.0	0.9	1,835,667
	Fourth	54.3	33.5	10.4	1.9	1,831,691
	Richest	36.3	49.2	8.9	5.7	1,816,710
Total		**58.5**	**30.6**	**8.6**	**2.3**	**9,107,302**

[1] **Public** includes public hospitals, public health centres, and public dispensaries.

[2] **Private** includes private hospitals; private clinics; nursing/maternity homes; company/parastatal clinics; community pharmacies; and chemists, pharmacies, and shops.

[3] **Faith-based** includes mission hospitals, mission health centres, mission dispensaries, and NGO clinics.

[4] **Other** includes traditional, religious, and cultural healers; village health workers (including traditional birth attendants and community health workers); and others.

Annex 3.2 Percentage of Distribution of Admissions by Type of Health Care Provider, 2013

Description	Public Hospitals	Private Hospitals	Mission Hospital	Public Health Centre	Private Health Centre	Mission Health Centre	Nursing/ Maternity Homes	All Others	Total
County									
Nairobi	41.5	35.9	12.1	2.7	2.4	0.6	3.4	1.4	100.0
Nyandarua	54.1	19.6	21.5	4.8	0.0	0.0	0.0	0.0	100.0
Nyeri	51.2	18.3	24.5	6.0	0.0	0.0	0.0	0.0	100.0
Kirinyaga	50.1	19.6	25.5	0.3	3.2	1.0	0.4	0.0	100.0
Muranga	54.0	16.0	17.2	9.5	1.1	0.0	2.2	0.0	100.0
Kiambu	41.0	35.2	11.9	5.4	1.6	1.0	3.8	0.0	100.0
Mombasa	33.7	36.3	3.5	2.7	18.7	0.0	4.3	0.7	100.0
Kwale	63.6	7.0	6.4	7.3	7.3	3.4	1.4	3.5	100.0
Kilifi	55.7	13.7	8.5	14.7	5.2	2.1	0.0	0.0	100.0
Tana River	83.7	9.5	0.0	6.8	0.0	0.0	0.0	0.0	100.0
Lamu	60.7	22.3	0.0	3.1	3.7	0.0	3.5	6.7	100.0
Taita-Taveta	62.8	17.8	14.0	4.0	0.0	0.0	0.0	1.4	100.0
Marsabit	70.7	12.7	15.1	0.0	1.5	0.0	0.0	0.0	100.0
Isiolo	45.8	30.7	14.4	2.9	0.9	4.0	1.2	0.0	100.0
Meru	28.2	6.6	52.8	7.6	2.0	1.5	1.4	0.0	100.0
Tharaka Nithi	42.4	10.2	42.7	2.2	0.0	1.7	0.9	0.0	100.0
Embu	50.5	12.1	28.6	2.2	0.0	1.0	5.6	0.0	100.0
Kitui	47.5	13.2	28.4	2.0	3.1	1.5	4.3	0.0	100.0
Machakos	52.6	25.0	12.7	6.0	0.0	0.0	2.7	1.1	100.0
Makueni	59.6	11.1	3.4	16.8	0.0	0.0	0.0	9.2	100.0
Siaya	41.0	23.2	16.2	9.8	0.4	0.0	0.0	9.5	100.0
Kisumu	45.1	23.5	14.2	6.9	5.7	0.0	0.0	4.6	100.0
Homa Bay	40.4	25.1	8.8	13.7	3.2	0.6	1.8	6.5	100.0

Description	Public Hospitals	Private Hospitals	Mission Hospital	Public Health Centre	Private Health Centre	Mission Health Centre	Nursing/ Maternity Homes	All Others	Total
Migori	51.2	14.2	22.6	7.2	0.7	0.0	0.0	4.1	100.0
Kisii	54.7	20.9	15.7	8.0	0.7	0.0	0.0	0.0	100.0
Nyamira	42.4	18.2	10.2	9.3	2.8	7.5	2.2	7.5	100.0
Turkana	34.6	7.2	28.6	4.0	4.3	9.1	0.0	12.1	100.0
West Pokot	50.0	0.0	15.2	13.2	6.1	8.7	0.6	6.4	100.0
Samburu	41.8	5.3	41.4	9.7	0.0	1.9	0.0	0.0	100.0
Trans-Nzoia	69.0	5.8	2.5	11.0	4.4	7.3	0.0	0.0	100.0
Baringo	65.7	9.5	12.3	10.2	0.0	0.0	0.0	2.2	100.0
Uasin-Gishu	60.2	31.3	2.4	3.9	0.0	0.0	0.0	2.2	100.0
Elgeyo-Marakwet	38.7	6.0	31.2	10.6	3.6	10.0	0.0	0.0	100.0
Nandi	54.4	7.4	14.2	22.2	1.8	0.0	0.0	0.0	100.0
Laikipia	73.1	9.0	4.4	8.0	3.7	0.0	0.0	1.9	100.0
Nakuru	59.9	16.9	6.1	10.2	4.1	1.1	1.7	0.0	100.0
Narok	64.6	12.5	13.6	4.6	3.3	1.3	0.0	0.0	100.0
Kajiado	35.7	26.2	11.6	18.8	5.1	1.1	0.8	0.7	100.0
Kericho	41.6	29.6	17.7	1.5	0.5	1.0	8.1	0.0	100.0
Bomet	42.9	7.9	42.6	6.6	0.0	0.0	0.0	0.0	100.0
Kakamega	53.6	11.4	8.5	19.0	5.9	0.4	0.7	0.4	100.0
Vihiga	60.9	4.9	13.9	11.8	3.1	2.9	1.2	1.3	100.0
Bungoma	51.4	10.9	14.3	13.1	2.9	4.1	3.4	0.0	100.0
Busia	61.5	9.2	15.4	8.4	1.1	2.4	0.9	1.1	100.0
Residence									
Rural	49.2	14.2	19.4	10.6	2.2	1.7	1.1	1.8	100.0
Urban	47.1	27.9	12.7	3.6	3.7	0.8	2.8	1.5	100.0

Description	Public Hospitals	Private Hospitals	Mission Hospital	Public Health Centre	Private Health Centre	Mission Health Centre	Nursing/ Maternity Homes	All Others	Total
Sex									
Male	50.1	20.1	17.8	5.9	2.9	1.3	0.6	1.3	100.0
Female	47.3	19.9	15.9	8.6	2.7	1.3	2.4	1.9	100.0
Age groups									
0–4	59.1	16.5	12.7	7.0	2.1	0.8	1.1	0.7	100.0
5–14	48.2	20.3	12.6	9.8	3.9	3.5	1.1	0.6	100.0
15–24	49.3	17.4	15.8	8.4	2.2	1.4	2.0	3.4	100.0
25–34	43.0	22.3	15.7	10.0	3.2	0.7	3.1	2.0	100.0
35–44	48.3	20.6	17.7	6.6	2.7	1.3	0.6	2.2	100.0
45–54	43.8	25.4	19.2	6.5	2.2	1.3	0.4	1.3	100.0
55–64	42.0	22.7	23.7	3.8	3.4	2.0	2.4	0.1	100.0
65 +	50.0	16.7	24.3	2.1	3.0	0.8	1.9	1.1	100.0
Marital status									
Never married /never lived together	53.0	19.2	13.1	7.8	2.6	1.8	1.4	1.1	100.0
Married/ living together	45.1	20.8	17.7	8.2	3.2	0.9	2.2	1.9	100.0
Divorced /separated	48.8	19.0	21.4	7.9	1.4	0.3	0.0	1.2	100.0
Widowed	44.8	18.2	25.1	3.4	2.4	1.6	2.2	2.3	100.0
NS	53.6	20.7	15.6	3.5	0.0	1.9	0.0	4.6	100.0
Level of education									
Primary	50.9	14.2	16.9	9.5	3.7	1.6	1.4	1.9	100.0
Post primary Secondary	45.1	26.3	14.6	6.6	2.2	0.6	3.0	1.6	100.0
College and University	27.7	40.3	23.2	1.9	3.1	0.5	1.4	1.8	100.0
None	55.0	16.0	15.3	7.5	1.8	1.8	1.3	1.3	100.0

Description	Public Hospitals	Private Hospitals	Mission Hospital	Public Health Centre	Private Health Centre	Mission Health Centre	Nursing/ Maternity Homes	All Others	Total
Employment status									
Working (formal/ informal employment)	44.9	21.3	18.6	7.3	2.7	0.8	2.6	1.7	100.0
Seeking work	43.0	28.6	15.7	5.6	0.8	1.7	2.6	1.9	100.0
Homemakers	46.5	19.6	17.2	7.7	4.1	1.4	1.0	2.4	100.0
Students	49.9	17.4	18.8	7.3	2.7	0.8	0.1	3.0	100.0
Others	52.3	16.3	14.4	9.4	0.3	3.1	1.6	2.6	100.0
Rating of own health									
Very good	46.4	24.2	16.1	6.6	3.2	0.8	1.7	1.1	100.0
Good	46.3	20.1	16.8	9.0	2.4	1.1	2.3	2.1	100.0
Satisfactory	50.2	18.8	15.8	7.8	3.9	1.0	0.8	1.7	100.0
Poor	56.8	14.2	17.5	3.6	2.5	3.4	1.0	1.0	100.0
Don't know	0.0	0.0	80.8	0.0	19.2	0.0	0.0	0.0	100.0
Presence of chronic problem									
Not Present	48.7	19.9	15.5	8.3	2.8	1.2	1.9	1.6	100.0
Present	46.8	20.1	19.8	5.5	2.9	1.6	1.5	1.8	100.0
Religion									
Christian (Catholic)	43.7	22.3	21.6	6.6	2.2	1.3	1.0	1.4	100.0
Christian (Protestant)	50.2	18.0	15.4	8.5	2.6	1.4	2.3	1.7	100.0
Muslim	38.9	40.0	8.9	2.6	7.4	0.9	0.1	1.2	100.0
Traditionalist	43.8	12.6	25.8	11.6	0.0	0.0	0.0	6.2	100.0
Atheist	61.2	19.4	6.6	12.7	0.0	0.0	0.0	0.0	100.0
Others (specify	56.9	6.9	20.0	1.3	8.1	0.0	0.0	6.8	100.0

Description	Public Hospitals	Private Hospitals	Mission Hospital	Public Health Centre	Private Health Centre	Mission Health Centre	Nursing/ Maternity Homes	All Others	Total
Health cover									
Insured	33.2	34.0	22.5	2.5	2.5	0.5	3.6	1.2	100.0
Not Insured	55.9	12.9	13.6	10.2	3.0	1.7	0.9	1.8	100.0
Wealth index quintiles									
Poorest	51.4	9.5	15.9	15.1	3.4	2.0	0.3	2.4	100.0
Second	54.0	12.6	14.4	10.7	2.4	3.1	0.8	2.0	100.0
Middle	54.5	10.8	20.6	8.6	2.3	1.2	1.0	1.0	100.0
Fourth	47.4	19.3	21.4	4.6	2.3	0.6	2.2	2.4	100.0
Richest	39.9	36.4	12.0	3.4	3.4	0.5	3.4	1.0	100.0
Overall	**48.3**	**20.0**	**16.5**	**7.6**	**2.8**	**1.3**	**1.8**	**1.7**	100.0

Annex 5.1. Insurance Coverage by Counties and Types, 2013

	Population	Percent Insured	NHIF	Community-based Health Insurance	Private Insurance	Others
Nairobi	3,556,148	31.9	76.6	0.3	22.2	0.8
Nyandarua	635,741	20.0	96.3	0.1	3.6	0.0
Nyeri	740,831	32.9	78.9	6.1	8.5	6.5
Kirinyaga	561,005	29.0	74.0	7.0	18.5	0.6
Muranga	1,195,097	19.7	91.0	5.1	3.5	0.4
Kiambu	1,542,215	34.0	88.7	0.1	10.6	0.6
Mombasa	1,046,834	20.9	84.6	0.0	15.1	0.3
Kwale	717,554	4.6	87.5	0.0	12.5	0.0
Kilifi	1,220,448	7.2	88.2	1.7	6.2	4.0
Tana River	264,482	5.1	97.8	0.0	2.2	0.0
Lamu	112,751	6.7	96.4	0.6	2.7	0.3
Taita-Taveta	323,462	13.9	97.7	0.0	2.3	0.0
Marsabit	303,445	1.8	93.3	0.0	5.9	0.8
Isiolo	151,010	11.7	98.3	0.1	1.6	0.0
Meru	1,406,807	19.5	94.7	0.9	2.7	1.8
Tharaka Nithi	380,735	17.1	95.4	0.0	4.0	0.6
Embu	535,562	22.6	97.1	0.0	1.0	1.9
Kitui	1,059,506	8.1	89.2	6.6	4.2	0.0
Machakos	1,134,287	19.7	80.5	3.5	15.0	1.0
Makueni	923,875	8.8	97.8	1.1	1.1	0.0
Siaya	902,752	9.4	97.5	0.2	2.3	0.0
Kisumu	1,044,690	13.8	89.7	0.0	6.5	3.9
Homa Bay	983,037	9.0	98.4	0.0	1.6	0.0
Migori	1,031,645	11.3	99.4	0.0	0.6	0.0
Kisii	1,350,132	17.9	98.0	0.0	1.8	0.1
Nyamira	519,564	16.1	93.5	2.6	3.7	0.2

	Population	Percent Insured	NHIF	Community-based Health Insurance	Private Insurance	Others
Turkana	937,767	3.0	80.7	0.8	18.5	0.0
West Pokot	561,418	7.1	97.8	0.0	2.2	0.0
Samburu	246,826	6.7	93.8	1.9	4.1	0.2
Trans-Nzoia	901,131	5.4	94.1	0.0	5.9	0.0
Baringo	613,099	14.7	97.4	0.3	0.5	1.8
Uasin-Gishu	989,190	18.2	91.2	0.0	8.8	0.0
Elgeyo-Marakwet	407,131	15.2	95.8	0.0	4.2	0.0
Nandi	824,197	13.1	91.7	0.6	7.7	0.0
Laikipia	442,712	23.1	92.9	1.9	4.1	1.2
Nakuru	1,765,978	21.9	94.6	0.4	4.4	0.6
Narok	940,310	11.8	100.0	0.0	0.0	0.0
Kajiado	759,909	12.4	86.2	0.7	11.1	2.1
Kericho	836,815	31.5	88.7	1.6	8.4	1.2
Bomet	796,682	25.4	99.3	0.3	0.5	0.0
Kakamega	1,113,714	9.7	93.9	0.0	6.1	0.0
Vihiga	594,879	9.0	94.9	0.0	5.1	0.0
Bungoma	1,723,710	10.7	85.2	5.3	7.2	2.3
Busia	521,311	11.3	95.0	0.0	3.3	1.7

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