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KENYA INSTITUTE FOR PUBLIC POLICY RESEARCH AND ANALYSIS (KIPPRA)

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Social Sector Department

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Executive Summary

Access to and provision of quality health care is a basic right guaranteed by the 2010 Constitution of Kenya. In the Kenya Vision 2030, the government targets to have the entire population having access to quality and effective health services. Further, the government emphasizes on Universal Health Care (UHC) coverage in the "Big Four" Agenda. Devolution of the health services has granted county governments the role of coordinating and managing the delivery of county healthcare services including promotion of primary health care, public health and sanitation, ambulance services, disease surveillance and response among others. The national government coordinates and manages the national referral hospitals and laboratories, planning and budgeting for national health services, and Health Information Management Systems (HIMS). The roles of the two government systems are coordinated by the County Health Bill (2016) that provides a regulatory framework for health care services and service providers, health products and health technologies.

Four years into devolution of public health care delivery, therefore provided a good opportunity to assess the status of health care services in the country. In this regard, KIPPRA undertook the study titled "An Assessment of Healthcare Delivery under Devolution" to evaluate the delivery and uptake of health care services in the country with the accession to devolved system of government in 2013. The study mainly focused on: the extent of citizen participation in planning and budgeting for the sector; exploring citizens' uptake of and perceptions on primary health care services in the context of a devolved system; level of citizens' satisfaction with the health services; availability of health inputs (human, capital, commodities) in primary health care facilities.

Public participation in health policy process

Public participation in policy process is provided for in the constitution. In the health sector it is expected that public will be involved in the planning and budgeting of health care to in enhancing health systems and outcomes. However, there was limited awareness among citizens on their role in the health policy making, planning and budgeting process across all counties. This was attributable to limited access to information by citizens on how they can engage with county duty bearers as well as lack of structures for health public participation to guide the process. To ensure effective public participation, a clear public participation framework for health should be formulated and implemented. There is also need

for a clear channel of communication and relevant structures to allow public engagement, enhanced civic education and capacity-building of the county officials to facilitate social accountability and productive policy engagement, respectively.

Improved health sector performance

There was significant improvement in the health sector performance, although the country lags various international benchmarks such as WHO targets and the 2001 Abuja Declaration. Child survival improved over the last five decades, with reduction of under-five, infant, neonatal and maternal mortality. Nutrition status of children also improved there were significant disparities across the counties where especially the ASAL areas recorded relatively high levels of stunting, wasting and underweight. Communicable disease burden declined significantly due to efforts by the government to combat preventable diseases such as Malaria and Tuberculosis (TB). HIV prevalence declined marginally with the country achieving its ART coverage target of 1.03 million people in 2016. However, adolescents continue to bear the biggest brunt of new HIV cases. More importantly, significant efforts are required to address the increasing burden of non-communicable diseases including cancer, hypertension and diabetes.

Investing in human resources for health

Human resources for health (HRH) are requisite for delivery of better health services and outcomes. For efficient service delivery, HRH should be quality, adequate and equitably distributed. Despite the impressive growth in the number of health workers, most counties are yet to meet the national health human resource norm of 3 health workers per 10,000 population. Furthermore, various challenges persist including inadequate and inequitably distributed of workforce as well as a non-conducive environment that attracts and retains health workers. HRH across counties also lack effective training, capacity building and general workforce development, across all categories. Given that HRH challenges are interrelated and multi-sectoral, more holistic interventions encompassing policy, education/training, leadership/stewardship, finance, partnership and better human resources management are recommended.

Improving health infrastructure

Adequate health system infrastructure enhances access to health care and contributes to high quality of outcomes. With the devolved function, significant investment has gone into increasing the number of health facilities especially

those at lower levels. As a result, the average density of health facilities in the country has increased, but it falls below the WHO minimum threshold, and there are disparities across the counties. In addition, there was a weak balance between level of health infrastructure development and provision of recurrent inputs such as human resources. As such there is need to balance investments in health infrastructure, with provision of adequate health commodities and equipment across all counties to ensure effective delivery of health services. Other amenities whose provision require more attention include access to water, sanitation and electricity.

Enhance provision of medical supplies and maintenance of equipment

The country does relatively well on availability of key medical equipment that are required of a health facility and essential medicines though there are some gaps especially in the availability of tracer drugs for mothers and children. Further the use of malaria resistant drugs was registered in some facilities though not rampant in the country. Shortages of medicines, uneven distribution of health services and low availability of equipment, as well as lack of adequate guidelines must be considered as part of service management. Further, the gaps were also identified in the availability of key drugs used in the management of communicable and non –communicable diseases across the health system.

To address gaps in availability of essential medicines for mothers and children, the county government should revisit their procurement and distribution arrangement in light of the shortages of key lifesaving medical supplies and equipment. Counties and Kenya Medical Supplies Agency (KEMSA) should ensure efficiency on supply chain management system based on needs and have alternative options to order drugs while ensuring principles of economy, quality, timelines and rational use.

Support health services uptake and citizen satisfaction

The level of health services uptake and citizen satisfaction provide a key indication of how households rate quality of public health care services. Generally, there was improved satisfaction with service delivery among citizens since devolution, with health facilities having more essential equipment and drugs than before. Further, utilization of public health facilities was high at the public health centres and dispensaries, and higher in rural areas. Access to maternal health care increased significantly and more women were giving birth in health facilities. There, are however, barriers to accessing maternal health care such as inadequate drugs in the county pharmacies. Health facilities need to improve the stocking of the essential

medical supplies such as drugs. Each county also need to budget adequately for community health workers.

Healthcare service delivery index

In measuring the level of health care delivery at county level an index was constructed comprising seven key components: availability of medical drugs, public participation, citizen satisfaction, availability of medical equipment, access to basic amenities including water and sanitation, infrastructure and equipment and human resources for health. The findings indicate that recent government initiatives towards promoting universal health care have contributed to improved health care service delivery in the country. However, there is need for county governments to address challenges contributing to unavailability of medical officers across facilities and counties and support public participation on health policy making. Finally, it is important for counties to regularly monitor the performance of the health sector under devolution and address any emerging gaps to meet the high expectations among citizens given that universal health is enshrined in the bill of rights in the constitution.

Abbreviations and Acronyms

ACT	Artemisinin-based combination therapy
AIDS	Acquired Immunodeficiency Syndrome
AMPATH	Academic Model Providing Access to Healthcare
ANC	Antenatal Care
ART	Antiretroviral Therapy
ASAL	Arid and Semi-Arid lands
AU	Africa Union
BEmONC	Basic emergency obstetric and neonatal care
CBA	Collective Bargaining Agreement
CBEF	County Budget and Economic Forum
CBR	Crude Birth Rate
CCM	Comitato di CollaborazioneMedica
CD	Communicable Diseases
CDR	Crude Death Rate
CEC	County Executive Committee
CG	County Government
CGA	County Government Act
CHWs	Community Health Workers
CIDPs	County Integrated Development Plans
CoK	Constitution of Kenya
CPR	Contraceptive Prevalence Rate
CPSB	County Public Service Board
CRA	Commission for Revenue Allocation
DANIDA	Danish International Development Agency
E&PWSD	Elderly Persons with Severe Disabilities
EHS	Essential Health Services
EMMS	Essential Medicines and Medical Supplies
FGDs	Focus Group Discussions
GDP	Gross Domestic Product
GoK	Government of Kenya
HFMC	Health Facility Management Committees
HIMS	Health Information Management Systems
HISP	Health Insurance Subsidy Programme
HIV	Human Immunodeficiency Virus
HMSF	Hospital Management Service Fund

HPV	Human Papilloma Virus
HRD	Human Resources Development
HRH	Human Resources for Health
HSSF	Health Sector Services Fund
ICT	Information Communication Technology
ICU	Intensive Care Units
IFMIS	Integrated Financial Management Information System
IRS	Indoor Residual Sprays
ITNs	Insecticide-treated nets
KDHS	Kenya Demographic Household Survey
KEMRI	Kenya Medical Research Institute
KEMSA	Kenya Medical Supplies Authority
KEMSL	Kenya Essential Medical Supplies List
KEPH	Kenya Essential Package of Health
KEPI	Kenya Expanded Programme on Immunization
KHP	Kenya Health Policy
KHPF	Kenya Health Policy Framework
KIHBS	Kenya Integrated Household Budget Survey
KII	Key Informant Interviews
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KMTC	Kenya Medical Training College
KNBS	Kenya National Bureau of Statistics
KNHA	Kenyan National Health Accounts
KPMG	Klynveld, Peat, Marwick, and Goerdeler
LLINs	Long-lasting insecticidal nets
MACs	Mixed Advisory Committees
MCAs	Members of County Assembly
MDGs	Millennium Development Goals
MEDS	Mission for Essential Medicines
MES	Managed Equipment Services
MoH	Ministry of Health
MTEF	Medium-Term Expenditure Framework
MTPs	Medium Term Plans
NCD	Non- Communicable Diseases
NGOs	Non-Governmental Organizations
NHA	National Health Accounts
NHIF	National Health Insurance Fund
NHSSP	National Health Sector Strategic Plan
OCOB	Office of the Controller of Budget
OOP	Out of Pocket

OP&PWSD	Older Persons and Persons with Severe Disabilities
OPD	Outpatient Department
PETS	Public Expenditure Tracking Survey
PFMA	Public Financial Management Act
PGH	Provincial General Hospital
PHC	Primary Healthcare
PPP	Public Private Partnerships
SARAM	Service Availability and Readiness Mapping
SDGs	Sustainable Development Goals
SWG	Sector Working Groups
TA	Transition Authority
TB	Tuberculosis
TFR	Total Fertility Rate
THE	Total Health Expenditures
TSC	Teacher Service Commission
UHC	Universal Health Coverage
UN	United Nations
UNDP	United Nations Development Fund
UNICEF	United Nations Children Education Fund
USA	United States of America
USAID	United States Agency for International Development
WASH	Water Sanitation and Hygiene
WB	World Bank
WHO	World Health Organization

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Chapter 1: Background and Study Context

1.1 Introduction

Health entails a state of complete physical, mental and social well-being and not merely the absence of disease (Government of Kenya, 2016). Consequently, provision of and access to quality healthcare is fundamental in human capital development, with the global objective being to ensure a healthy, skilled and productive population for sustainable development (WHO and SDG, 2015). In Kenya, access to quality healthcare is a basic right granted by various articles in the 2010 Constitution, including Article 43 (1) for the general population, Article 53 (c) for children, and Article 56 (e) for minorities and marginalized groups (Constitution of Kenya 2010). The government is obliged to ensure universal health coverage of the population. As such, Universal Health Care (UHC) coverage is emphasized in the "Big Four" agenda of the government, and aims to ensure that the entire population has access to quality and effective health services, including prevention, promotion, treatment, rehabilitation and palliation while giving financial protection to poorer households.

Kenya adopted a devolved system of government in March 2013 as provided for in the 2010 Constitution of Kenya, resulting in one National government and 47 County governments. As stipulated in the Constitution, the National government is mainly responsible for policy formulation, provision of technical support, monitoring quality of health services, formulating guidelines on health service charges, and carrying out research on health services management and administration. The National government is also responsible for the national referral hospitals and laboratories, planning and budgeting for national health services, and Health Information Management Systems (HIMS). The County governments' health-related roles entail coordinating and managing the delivery of county healthcare services, the key components being the promotion of primary healthcare, public health and sanitation, ambulance services, disease surveillance and response, among others (Government of Kenya, 2014). Further, the County Health Bill (2016) establishes a unified system to coordinate the relationship between the National government and County government health systems, and provides a regulatory framework for healthcare services and healthcare service providers, health products and health technologies.

The Kenya Health Policy 2014-2030 (KHP) guides the attainment of the constitutional obligations and the long-term health goals outlined in the Social Pillar of Vision 2030 (Government of Kenya, 2014). The overarching goal of health

provision in Kenya is 'to attain the highest possible health standards by ensuring the provision of equitable, affordable and quality health and related services to all Kenyans. However, emerging areas of improvement include the need to ensure that healthcare services and interventions are continuously premised on people's health needs and expectations; deepening citizen participation in healthcare decision making process; encouraging uptake of health technologies for improved health outcomes; and ensuring a multi-sectoral approach in healthcare provision. The link between health and other sectors such as environment, housing, education, infrastructure, transport services, water and sanitation are critical for improved health outcomes. This study focused on citizen participation in healthcare decision making process and the effect of other sectors such as water and sanitation on health outcomes;,among other issues.

As devolution of health services takes hold, various areas for intervention have been identified. For example, the end-term reports of the defunct Transition Authority and the Commission on Implementation of the Constitution identified gaps in health human resource management, and lack of a clear inter-governmental framework defining relationships in roles of National and County governments in healthcare delivery (Transition Authority, 2016). The National and County governments were prone to duplication of effort, unsatisfactory fiscal performance of devolved units due to capacity constraints, and lack of clear legal framework for transferring resources and functions from the County level to sub-county levels, or and micro units such as wards within the counties. This has led to concentration of resources at County headquarters health facilities, while the sub-county facilities remain either under resourced and or under supported.

The Ministry of Health (MOH) in 2013 also conducted a baseline survey on 'Service Availability and Readiness Mapping (SARAM)' (Government of Kenya, 2014) which identified expansion of facilities offering Kenya Essential Package of Health (KEPH) and management of non-communicable diseases as areas for improvement in strengthening devolved healthcare delivery. SARAM focused on health facility level service delivery. The SARAM baseline of 2013 and the follow-up of 2016 established that health facilities were commonly urban-based and ill-equipped, with long distances separating them especially in rural areas. However, the SARAM study focused on only four items of KHP's interpretation of the objectives of devolution; that is items on: i) service delivery; (ii) enhancing capacities; (iii) fostering devolution; and (iv) enhancing checks and balances. Little attention was paid on evaluating aspects of service delivery as provided for in constitutional, policy and legislative frameworks. These encompassed upstream issues such as public participation in planning and budgeting, and downstream issues such as uptake and satisfaction with health services at household and community levels.

Kenya lags various international benchmarks in the health sector. For example, the country is yet to attain the 2001 Abuja Declaration commitment to ring-fence 15 per cent of public spending for public healthcare (African Union, 2001), only managing a high of 8 per cent share for a single year 2001/02 after which the share has remained at around 5 to 7 per cent level between 2013/14 to 2015/16. Kenya has also performed below the World Health Organization (WHO) benchmark on primary healthcare annual spending of US$ 36 per person, which has since risen to US$ 64 per person per annum. The per capita is based on the minimum unit cost of healthcare per annum. In 2015/16, Kenya's annual per capita expenditure on health was estimated at US$ 25.1 per person. Further, the Government of Kenya (2014) confirms a disproportionate focus on urban hospital-based curative care which undermines affordable access for most of the population who often reside in rural areas. For example, while successive National Health Sector Strategic Plans (NHSSP) since 1999 have recognized the community as the basis for public healthcare delivery, the Government of Kenya 2014's readiness assessment did not assess community healthcare services despite this level being more cost-effective in promotive and preventive healthcare delivery.

Participation of the people in planning and budgeting can enhance the relevance of the services delivered to targeted households and communities. Besides public participation, the Constitution, County Government Act 2013 and PFM Act 2012 all emphasize civic education for an informed citizenry able to engage leaders at all levels of government. Knowledge about the services offered at the various categories of public health facilities can enable households to reduce direct and indirect spending that arises from focusing on hospitals as the sole source of care, while putting less emphasis on services at Levels 1, 2 and 3. Additionally, in the context of 'Universal Health Coverage' (UHC) that is designed to protect households from catastrophic healthcare spending (Kimani and Maina, 2015; Atela and Githure, 2016; and Mwaura et al., 2015), participation that includes civic education can enlighten households on financing alternatives such as the re-structured payment of premiums that is now permitted by the National Health Insurance Fund (Githinji, 2016) and other non-government financing initiatives.

Consequent to the foregoing, four years of devolved public healthcare delivery has provided a good opportunity to assess the status of healthcare in the country. The KIPPRA study on an Assessment of Health Delivery under Devolution thus involved evaluation of the extent of citizen participation in planning and budgeting for the sector, considering the systems county governments use to allocate budget resources across sectors, and interrogating the system the public health sector uses to allocate its budget resources internally. The study also analyzed issues surrounding healthcare human resource management, health infrastructure, medical supplies and equipment. The study period also provided a

good opportunity to estimate a health service delivery index and assess household uptake of public health services, and their satisfaction with the services offered.

1.2 Objectives of the Study

The overarching objective of the study was to assess the changes brought about by some key policy reforms aimed at improving the delivery and uptake of healthcare services in the country since the accession to devolution in 2013. This was achieved through an assessment of the extent of interaction between target communities and their respective county governments in planning and budgeting for the delivery of healthcare compared to other sectors' resources, as well as across the different levels of the public health system. A further objective was to explore Kenyans' uptake of and perceptions on primary healthcare services in the context of a devolved system in the country. Against the backdrop of evaluations like the SARAM 2013 and 2016, the intention was to assess the areas in which public healthcare has improved under devolution, while also highlighting those of persisting constraints.

Specifically, the study assessed:

(i) Compliance with the constitutional, policy and legislative provisions for preparing citizens for, and their participation in planning and budgeting for healthcare;

(ii) Availability of health inputs (human, capital, commodities) in primary healthcare facilities;

(iii) Uptake of primary healthcare services;

(iv) Level of citizens' satisfaction with the health services from health facilities;

(v) Emerging issues; and

(vi) Drew implications for policy.

The study addressed the following research questions:

(i) To what extent had citizens been informed and prepared to participate in planning and budgeting for health care?

(ii) Under what circumstances had citizens been participating in planning and budgeting for their healthcare priorities? To what extent were citizens satisfied with the health services in the country?

(iii) Had resource flows to the various public health facility levels changed since devolution of healthcare services?

(iv) What was the level of availability of human resources in the health sector?

(v) To what extent were health equipment, drugs, other products and commodities available at the facility level?

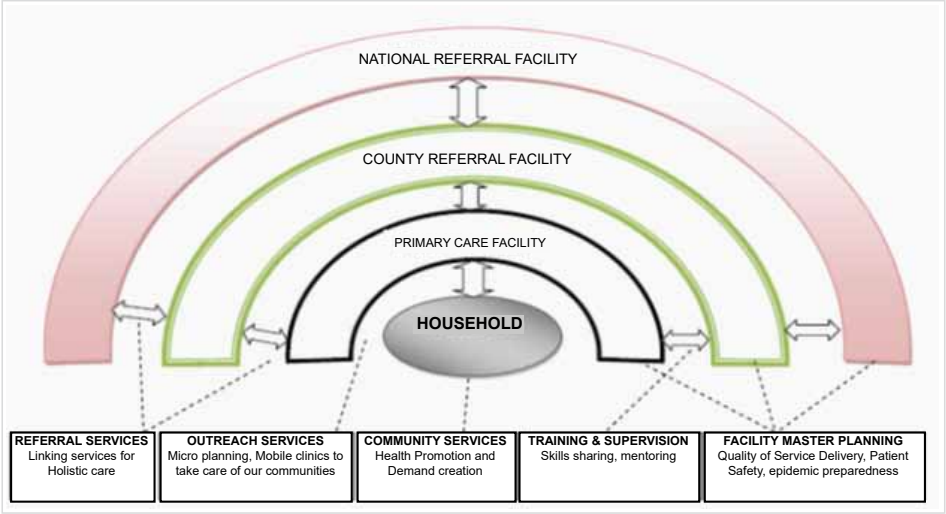
(vi) To what extent had financial, physical and cultural factors constrained access to public healthcare since the advent of devolution?

(vii) What other factors were critical for improved health outcomes? For instance, access to water, sanitation, nutrition, quality environment, among others.

1.3 Healthcare System in Kenya

The Kenyan healthcare system is divided into three sub-systems: the public sector, the private for-profit sector, and the private not-for-profit sector which includes faith-based organizations (FBOs). In the formal sector, the public sector is the largest in terms of the number of healthcare facilities, but the non-government sector also includes informal or non-formal providers. Figure 1.1 provides a schematic representation of the vertical relationships between the different levels of Kenya's healthcare system. The Kenya Essential Package of Health (KEPH) service delivery structure is essentially a referral system that requires investment at the community level (Level 1) to prevent affliction and promote good health to avert the need for facility-based care. The referral system involves knowledge in households and the community that enables coping with own resources over health promoting conduct. Examples of interventions focus on sleeping under insecticide treated mosquito nets to avert malaria. When affliction arises, the system expects the first port of call to be the dispensary (Level 2), which can refer cases to the health centre (Level 3) and thereafter to Levels 4, 5 and 6 as necessary. This referral system depicts an escalation to greater costs of care for both the patient and providers that should be based entirely on need. Level 4 facilities include the major County Referral Hospitals (former Provincial General Hospitals) that were funded directly by the Ministry of Health (MoH) through a conditional grant to the respective managing host counties, even as discussions continued over their most appropriate locus between the county and national levels of government. Under the Constitution's Fourth Schedule, the National Government is responsible for health policy and capacity building, and for the two national referral hospitals: Kenyatta National Hospital, and Moi Teaching and Referral Hospital in Eldoret, and the other national referral institutions, including the psychiatric facilities and the National Spinal Injury Hospital. Level 6 public health institutions include Kenya Medical Research Institute (KEMRI), Radiation Protection Board, Kenya Medical Supplies Agency (KEMSA), and Kenya Medical Training College (KMTC).

Figure 1.1: Vertical relationships between the different health levels/ tiers



Source: Ministry of Health (2014a)

The figure also highlights the other issues in the system, such as skills training, outreach, planning and quality monitoring. Some of these additional functions are implemented by the National and County governments.

1.4 Legal and Policy Frameworks

Kenya health policy has evolved over time. The inaugural health policy, the Kenya Health Policy Framework of 1994 (KHPF), guided healthcare management until 2011. KHPF's focus was largely on healthcare as a source of health, and needed to adopt WHO's broader 1948 definition of health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (Bircher and Kuruvilla, 2014). KHPF's successor, the Kenya Health Policy (KHP) 2014-2030 redresses the inherent historical oversights of the WHO definition. In addition, it is aligned to the Constitution of Kenya which provides for the right to life and the highest attainable standard of health, as well as Kenya Vision 2030. One of the policy's objective is to "strengthen collaboration with other sectors that have an impact on health". The framework maps directly to the health policy's principle of integrating a "multi-sectoral approach to realizing health goals." The policy further specifies other health determinants which include nutrition, maternal education, safe water, adequate sanitation, proper housing, among others.

Kenya Vision 2030 stresses equitable and affordable healthcare for citizens. The priorities under the Vision include preventive care at community and household levels through a decentralized healthcare system. Besides, Sustainable Development Goals (SDGs) focus on ensuring healthy lives and promoting well-being for all at all ages. To this end, the KHP has the following key objectives:

(i) Eliminate communicable diseases: This is to be attained through reducing the burden of communicable diseases, until they are not of major health concern to the public.

(ii) Halt, and reverse the rising burden of non-communicable diseases. This is to be achieved by designing and implementing feasible strategies to address the identified non-communicable conditions among the population.

(iii) Reduce the burden of violence and injuries. This is to be attained through direct and indirect collaborative initiatives with other sectors that address the various causes of injuries and violence.

(iv) Provide essential healthcare. This objective relates to provision of medical services that are affordable, equitable, accessible and responsive to citizen's health needs.

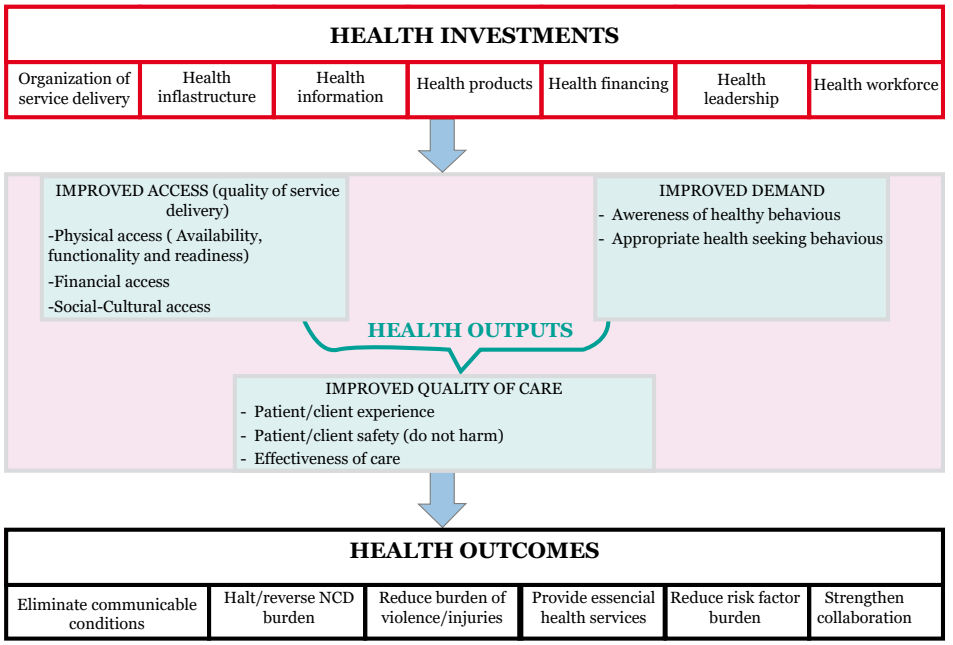
(v) Minimize exposure to health risk factors. The aim is to strengthen the health interventions, which address risk factors to health, while facilitating use of products and services that lead to healthy behaviour among the population.

(vi) Strengthen collaboration with other sectors. This aims to adopt approaches that ensure sustainable and collaborative approach with other sectors in the design, implementation and monitoring processes in all health-related sector actions. Examples of related sectors include water and sanitation, food and nutrition, infrastructure, among others.

1.5 Methodological Approaches

The analysis drew on the existing literature and conceptual frameworks and their applications, linking health sector investments (human and capital inputs) and outputs (Figure 1.2). The SARAM conceptual framework was ideal since the study offered the most vivid and indeed, comprehensive picture of service delivery readiness for 2013. Health investments should lead to three categories of outputs, including: improved access, improved demand, and improved quality of care. These intermediate measures should lead to improved health outcomes. The study reviewed the pre-devolution and devolution era status of each of the health

Figure 1.2: Framework for linking health investments (inputs), outputs and outcomes



Source: Government of Kenya (2014b)

components, considering how they had influenced the status of outputs.

The health investments are largely self-evident. The organization of service delivery was based on the constitutional imperative of health as a basic right, which feeds into the various frameworks including Vision 2030, the Medium-Term Plans (MTPs), Sustainable Development Goals (SDGs), among others. The KHP is critical in providing the cross-over from health into the administrative framework within which it is delivered. The other investment worthy of elaboration is 'Health Leadership', covering 'service delivery organization', 'stewardship', 'partnership', and 'governance' – essentially the quality of the health managers' outreach into their respective communities and to their stakeholders to ensure transparency in planning, budgeting and service delivery. Improved access requires functionally ready facilities at reasonable distances, with adequate staff, equipment and drugs and non-drug health supplies. It also requires 'financial access', meaning prospective patients can afford and are willing to pay for existing services. Finally, and critically, it requires 'socio-cultural access' which removes the impediments that, for example, bar mothers from facility delivery even after diligently attending ante-natal clinics (Moyer et al., 2013).

Improved demand can arise from household and community level interventions, such as civic and public health education that promotes healthy behaviour, as well as to rationalized healthcare-seeking behaviour such as by emphasizing the referral system. Such interventions enhance cost-effective demand for needed care, thus improving uptake of the same.

1.5.1 Data sources

The underlying objective of this study was to assess the impact of devolution on the readiness of counties and health facilities to deliver healthcare. Consequently, the first objective was to review the constitutional, policy and legislative frameworks that relate to healthcare delivery under devolution. Examples of reviewed documents include the Constitution, health sector strategic plans, and strategy documents on the management of health human resources. The survey used data from other secondary data sources, including related evaluation reports at the national or county levels.

Conducted on the eve of the March 2013 accession to devolution, SARAM 2013 and health Public Expenditure Tracking and Service Delivery (PETs Plus) study of 2012/13 effectively provided a benchmark against which to evaluate any changes in the preparedness for service delivery since 2013. Another key source of data was KDHS (2014), and recent national and international studies on the health sector. Primary data collection took place in March-April 2017. Both qualitative and quantitative data collection methods were applied, including key informant interviews (KII) and focused group discussions (FGDs) with health policy makers, health workers, community leaders, and devolved government managers. A household survey provided information on health seeking behaviour, healthcare uptake, and satisfaction with health services. Given the study objective, the obvious approach would have been to ask respondents to compare the current with the pre-devolution status. However, a 4-year recall period was likely to undermine accuracy; consequently, the study related current perceptions to comparable studies around 2013.

1.5.2 Sample design

A total of 1,437 households and 217 health facilities were surveyed using a random and multilevel sampling approach, respectively. The household sampling frame was drawn by the Kenya National Bureau of Statistics (KNBS) using the National Sample Survey and Evaluation Programme (NASSEP V) framework. The facility sampling strategy aimed at producing nationally representative sample to enable comparison of key health assessment indicators. The sample strategy also allowed

for analysis by county, geographic location (rural/urban), by provider type (public/ private), and facility type/level (dispensary, health centr3 and hospital). Ideally, coverage extended to all the 47 counties. Table 1.1 contains type of information collected during the survey. The sub-sequent chapters focus on study findings.

Table 1.1: Study instruments, target respondents, information and respective sample sizes

Instrument	Respondent	Type of information	Target	Achieved
Instrument 1: Household Questionnaire	Any member of household aged 18 years and above	i) Health status ii) Health uptake iii) Health satisfaction level	1,500	1,437
Instrument 2: County Questionnaire	County Executive in charge of health, finance, and administration, and County Assembly	i) Appropriateness of Legal frameworks and emerging issues ii) Sources of health finances iii) Status of financing iv) Human resource v) Health provision vi) Challenges affecting uptake of health care across counties	47	47
Instrument 3: Facility Instrument (Public and Private)	Facility in-charge tool	i) Medical equipment ii) Health care financing iii) Human resource development and management iv) Capital resources v) Issues and challenges	294	217
Instrument 4: FGD and KII	Key stakeholders (including Council of Governors, MoH, County health managers)	Qualitative information and issues affecting health service delivery: i) Medical equipment ii) Financing iii) Human resource iv) Capital resources v) Public participation vi) Readiness to deliver health care vii) User satisfaction with health services	47	47

Overall, all the 47 counties were covered. Household and facility response rates were estimated at 95 per cent and 73 per cent, respectively. Secondary data including indicators on health performance, health inputs, outputs and outcomes were obtained from existing public and stakeholder documents.

Chapter 2: Public Engagement in the Health Sector

Public participation in health is critical in enhancing health outcomes and systems. However, there was limited awareness among citizens on their role in participation in health policy making, planning and budgeting across all counties. This lack of awareness can partly be attributed to limited access to information by citizens on how they can engage with county duty bearers, as well as lack of structures for health public participation to guide the process. To enhance public participation in health sector at county level, there is need to have in place a clear public participation framework for health; put in place relevant structures to allow public engagement; adopt effective and efficient means of communication; build capacity of county officials to facilitate productive engagement; improve civic education; and strengthen monitoring and evaluation of health programmes across counties.

2.1 Role of Public Participation in Health Policy Making

The role of public participation in the policy making process is clearly articulated in the Constitution of Kenya. Article 1 of the Constitution (2010) declares that sovereign power belongs to the people but may be exercised indirectly through democratically elected representatives at the national and county levels of government, among other platforms. Consequently, the Constitution provides for public participation at various points, notably in Article 10's National Values and Principles of Governance, and Article 232 (1)'s "involvement of the people in the process of policy making." Public participation is one of the objectives of devolution (Article 174 (c)) and effective public finance management (Article 201 (1)(a)). Article 69 (1)(d) provides for public participation in management, protection and conservation of the environment, which is critical for securing various health enhancing assets such as safe water and pollution free environment while ensuring that citizens are informed about healthcare delivery strategies. Further, the Constitution institutionalizes the role of public participation as one of the objectives of effective public finance (Articles 174 (c) and 201 (1)(a)). Article 118 (b) provides for facilitation of public participation and involvement in legislative and other businesses of Parliament and its committees. Article 184(1)(c) provides for public participation in governance and by extension service delivery in urban areas and cities and rural areas; and Article 196 (1)(b) provides

for public involvement in legislative and other businesses of county assemblies.

Further, Part VIII of the County Governments Act 2012 is dedicated to 'Citizen Participation', with section 30 (3)(g) providing that one function of the County Governor is to "promote and facilitate citizen participation in the development of policies and plans, and delivery of services, health included". This obligation also falls on all sub-county administrations, and section 87 outlines the principles of citizen participation while section 91 obligates the County government to establish structures for the same.

The Public Finance Management Act (PFMA) similarly emphasizes on public participation, with section 207 providing for regulations that govern the same. While the County Government Act 2012 refers to citizen participation, the Constitution and the PFMA refer to *public participation*. This study uses the term interchangeably. The Act mandates participation at various levels of government and the budget process, including the Parliamentary Budget Office (section 10 (2)), Cabinet Secretary (section 35 (2)), County Executive (section 125 (2), and sub-national levels (section 175 (9)). In the budget making process, the County government must develop a county development plan specifying the services and goods to be delivered and the budgets allocated to the programmes (section 126 (1) (c)), and establish the process to be followed by members of the public who wish to participate in the budget making process.

Since effective public participation requires informed participants, Article 35 of the Constitution also guarantees "access to information held by the State… (which) shall publish and publicize any important information affecting the nation." Consequently, CGA's Part X is on 'Civic Education', whose principles are to 'empower and enlighten continually and systematically in accordance with the principles and values of devolution' (section 98). Public participation is similarly emphasized in Part X of the Public Finance Management Act No. 18 of 2012 (PFMA) which provides for citizen participation in the planning process, notably development of the County Integrated Development Plan (CIDP), and in budgeting through the County Budget and Economic Forum (CBEF) (section 30 (3)(g)).

In the healthcare context, KHP's interpretation of the objectives of devolution already shows the importance it places on effective public participation (Government of Kenya, 2014b). The principles of the KHP are guided by Articles 10 and 232, together with Chapters 6 and 12 of the Constitution which outlines the values and principles that all State organs and officers are expected to uphold in the delivery of services. As such, the policy stipulates that the health sector will embrace: (i) public participation, in which a people-centred approach and social accountability in planning and implementation shall be encouraged, in addition to

the multi-sectoral approach in the overall development planning; and (ii) mutual consultation and cooperation between the national and county governments and among county governments.

Furthermore, the SDGs emphasize on broad mechanisms for consultation in involving the poor and vulnerable in health decision making and implementation processes. Consequently, National and County governments are expected to adopt optimal practices for creating effective partnerships between them and the citizens and other stakeholders to improve health service delivery and socio-economic well-being across communities. As an example, County governments should liaise with communities to design service delivery monitoring frameworks with pertinent indicators covering major functions, health included, which can form the basis for identifying health expenditure priorities while providing social accountability mechanisms for holding National and County governments to account.

One such mechanism was through Health Facility Management Committees (HFMC). HFMC as a mechanism to promote public participation in health is not a new concept in Kenya as it existed even before devolution. Previously, there were similar community-based or NGO supported mechanisms for public participation in some facilities. The HFMCs were introduced as part of wider reorganization of the health system based on principles of decentralization, community participation and inter-sectoral collaboration. The establishment of structures closer to service users, and inclusion of community representatives in those structures, was aimed at ensuring local problems were more easily seen or voiced, and responded to. A key role of facility committees is to oversee general operations and management of facilities.

2.2 Extent of Citizen Participation in Planning and Budgeting Processes

Effective health policy requires a responsive citizen participation supported with strong social accountability systems. The key levers of effective public participation involve principle of information, consultation, involvement and empowerment, supported with an effective communication framework. Decision makers, on the other hand, involve citizens through citizen assemblies and policy dialogues. This study assessed the extent to which there was public participation in sharing county resources across sectors, and in healthcare-focused processes, including planning, budgeting, delivery and in various legislative processes. Various indictors whose analysis are shown in the Table 2.1 were used to measure the extent of citizen participation.

Table 2.1: Household public participation indicators, 2017 (%)

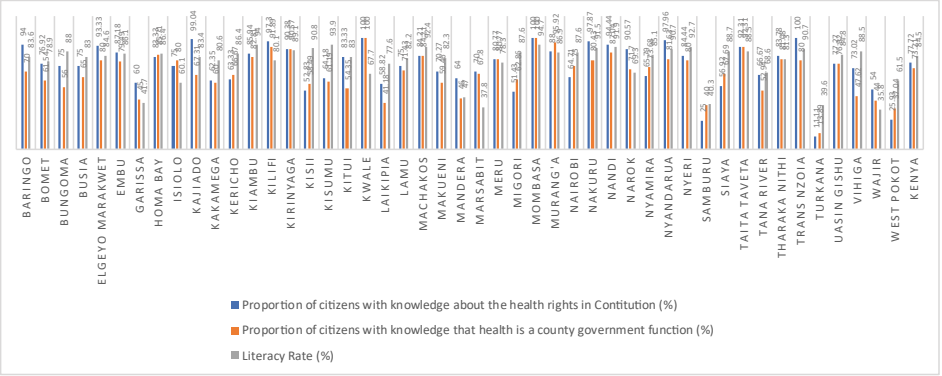
Indicator	Rural	Urban	All
Proportion of citizens with knowledge about the health rights in the Constitution	76.4	83.1	77.7
Proportion of citizens with knowledge that health is a county government function	71.0	82.1	73.2
Proportion of citizens who know importance of active participation in county decision making process	53.0	56.2	53.6
Proportion of citizens aware of civic education	14.2	23.9	16.1
Proportion of counties with established civic education unit	11.2	17.7	12.5
Proportion of citizens aware that they should be involved in planning and budgeting process	30.7	38.0	32.1
Proportion of citizens who attended any public engagement forum	29.9	54.5	38.6
Proportion of citizens that has ever been invited to a general county policy making forum	16.3	29.6	18.9
Proportion of citizens that has ever been invited to a health public policy making forum	6.1	11.3	7.1
Proportion of citizens that attended a health public policy making forum	29.7	36.2	31.8
Proportion of citizens that has ever been invited to a health planning and budgeting forum	1.6	2.4	1.8

Source: Health Assessment Survey (2017)

At the national level, majority of the citizens (77.7%) had knowledge about the health rights in the Constitution, 73.2 per cent were aware that health is a county government function and 53.6 per cent were aware of the importance of active participation in county decision making process. Even though awareness at national level seems impressive, a comparison across counties shows that some counties were lagging, with their scores below average (Figure 2.1). This can partly be attribute to low literacy levels in those counties.

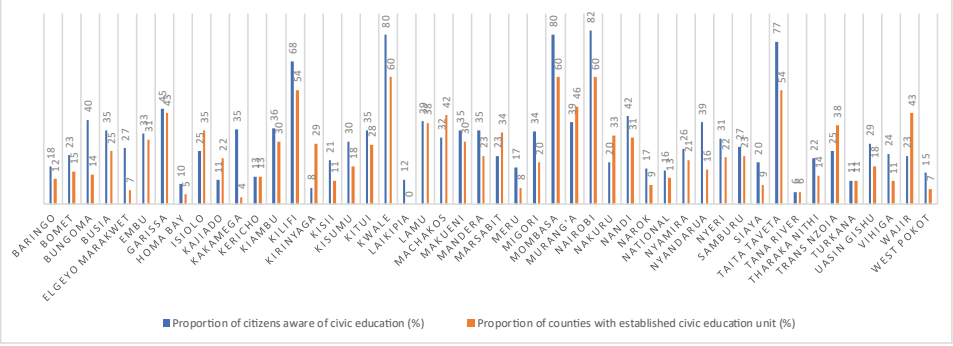
On civic education, it emerged that most people were not aware of civic education programmes that were being undertaken by their counties as depicted by an average of 16.1 per cent at national level. This can partly be attributed to weak civic education structures at county level. For instance, only 12.5 per cent of the counties had established civic education units (Figure 2.2). For those counties where civic education occurred, it was reported that it seldom focused on health matters but rather on general planning and budgeting issues.

Figure 2.1: Link between literacy rate and awareness of constitutional health rights, and of health as a county government function (%)



Data Source: Health Assessment Survey (2017) and Government of Kenya (2018)

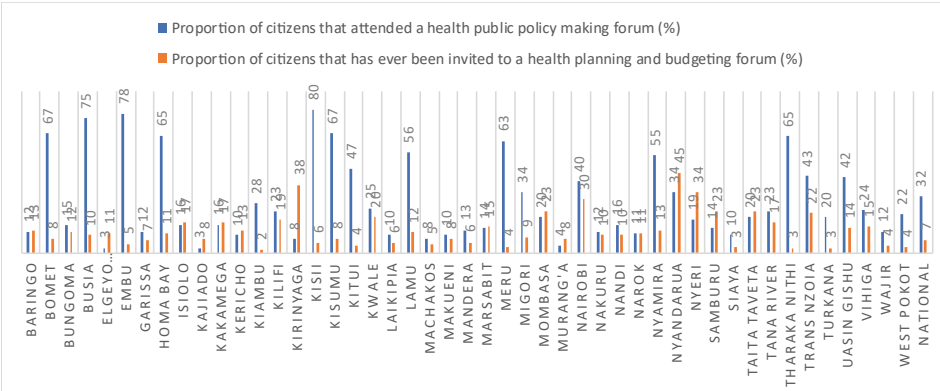
Figure 2.2: Awareness of civic education and availability of civic education unit (%)



Data Source: Health Assessment Survey (2017)

An examination of the level of citizens' awareness of participate in planning and budgeting shows that only 32.1 per cent were aware that they should participate and 38.6 per cent had attended a public engagement forum. This scenario can be attributed to the fact that very few individuals (18.9%) had been invited to a general county policy making forum. When this was narrowed down to the health sector, the proportion of citizens that had ever been invited to a health public policy making forum were only 7.1 per cent, with a lower proportion reported for urban areas; only 31.8 per cent had attended such public health policy making forums. In addition, the advertisements or invitations to attend public meetings were not made on time, which can also explain the poor attendance in public health policy making forums.

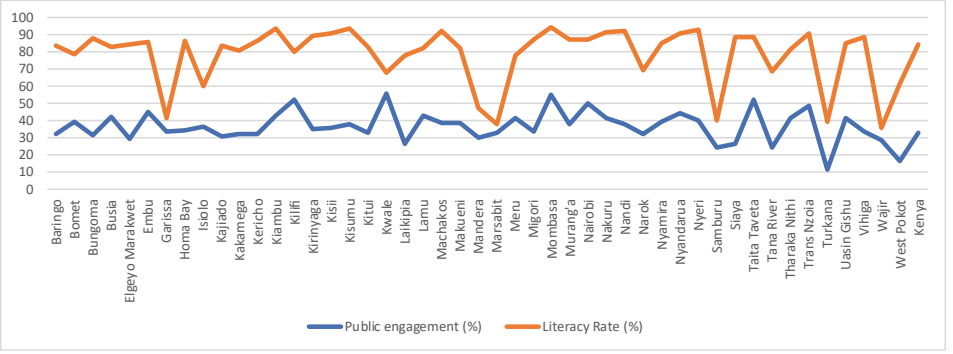
Figure 2.3: Public participation in health public policy making processes (%)



Data Source: Health Assessment Survey (2017)

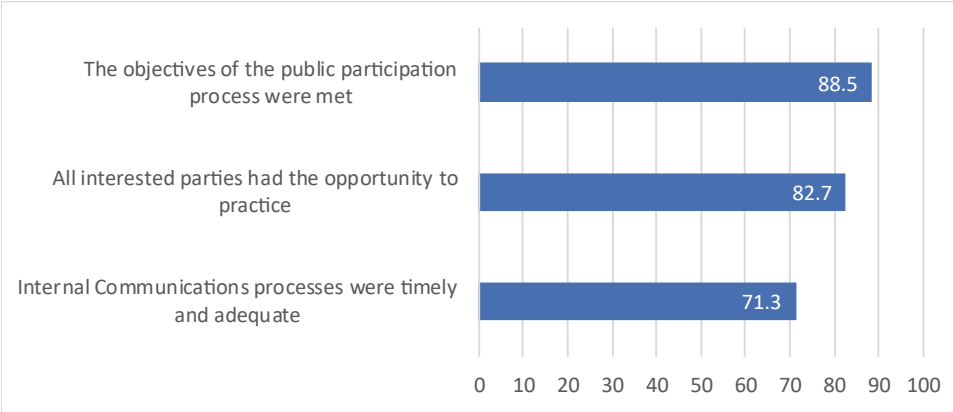
A comparison of rural and urban households reveals that the level of public participation was higher among urban households (Figure 2.4). This can partly be attributed to differences in literacy levels which were at 78.8 per cent in rural areas and 93.2 per cent in urban areas based on 2015/16 KIHBS. It can be argued that most urban dwellers are more educated and can easily access information from various sources than their rural counterparts. As such, they take a greater role in public participation because they understand and appreciate political and social benefits of public participation (Figure 2.5). Some of the major innovating tools for public engagement were mainly ICT tools such as county websites (77.1%) and social media (e.g. Facebook and Twitter) which may not be easily accessible to the rural population (Figure 2.6).

Figure 2.4: Link between public participation and literacy rates (%)



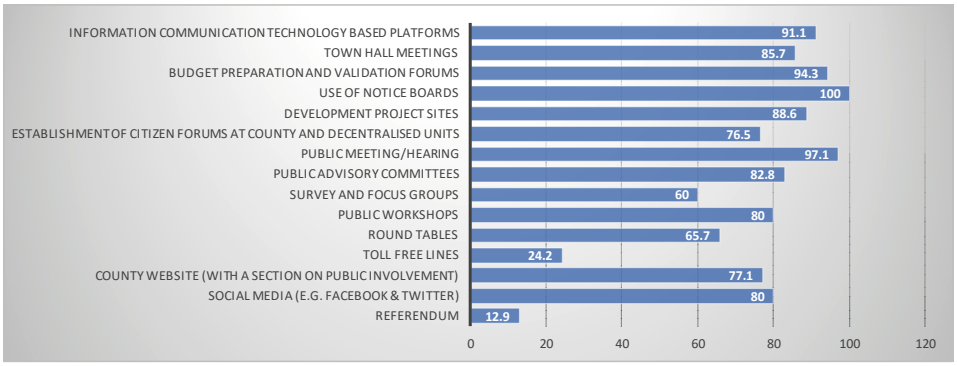
Data Source: Health Assessment Survey (2017) and Government of Kenya (2018)

Figure 2.5: Overall evaluation of public participation process (%)



Data Source: Health Assessment Survey (2017)

Figure 2.6: Existence of public participation tools (%)



Data Source: Health Assessment Survey (2017)

Overall evaluation of the public participation across counties was above average at over 70 per cent as shown in Figure 2.5. For these counties that organized public participation forums, the objectives of the public participation process were met; all interested parties had the opportunity to participate; and internal communications processes were perceived to be timely and adequate by the individuals who actually participated.

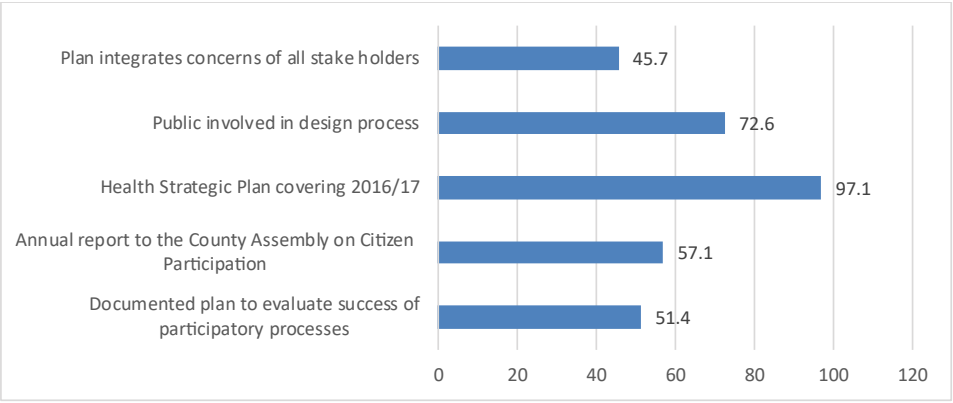
On people participation in policy making across counties, 76.5 per cent of the counties had institutionalized citizen forums at county and decentralized unit's framework and over 80 per cent of the counties involved stakeholders in decision making through information communication technology-based platforms, town hall meetings, budget preparation and validation for use of notice boards and development project sites. Most frequently used tools were public meetings/

hearings, public advisory committees, public workshops and social media (See Figure 2.6).

On tools to track citizen participation, most counties had documented plans to evaluate the success of participatory processes (51.4%) and annual report to the County Assembly on Citizen Participation (57.1%). Although 97.1 per cent of counties had health sector strategic plans, involvement of public in design process was rated at 72.6 per cent while the public felt that the plans rarely integrated concerns of all stakeholders at only about 45.7 percent for all counties (Figure 2.7).

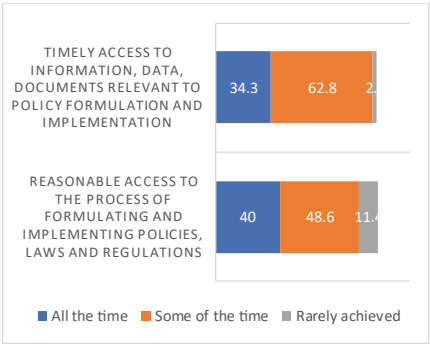
There was potential for improving public participation performance across counties. Public participation was measured using responses to a question on knowledge on importance of active participation in county decision making process, proportion of citizens who knew that health was a devolved government function, participation in a general and health focused public policy making forum. Four (4) out of every 10 citizens felt that there was reasonable access to the process of formulating and implementing policies, laws and regulations while only 34.4 per cent of the citizens felt that they had timely access to information and relevant data for policy making. The level can be explained by limited focus on public participation tools at the sub-county level. Only 35.2 per cent and 38.2 per cent of counties had an established information centre or citizen service centre in each ward and sub-county, respectively (Figure 2.8b). However, over 93 per cent of the counties had a sectoral plan on health and 61.7 per cent had a county development board in place.

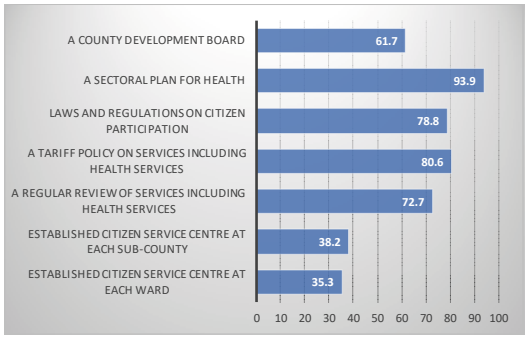
Figure 2.7: Tools for tracking citizen participation (%)



Data Source: Health Assessment Survey (2017)

Figure 2.8: a) Proportion of counties adhering to public participation principles in general (%); b) Proportion of counties with various instruments for public participation in place (%)





Data Source: Health Assessment Survey (2017)

In planning and budgeting processes at county level, citizen participation was convened by the County Secretary and member of County Executive Committee (CEC) in charge of finance. This allowed sharing of citizen views on budgets. One of the mechanisms for citizen participation at county level was through forums where opinion leaders and special interest groups such as the youth were invited to ensure that their views were captured. Another mechanism for participation was through the health facility management committees which involved local leaders in budgeting and planning of the facilities. In addition, the village health committees were represented in the health facility management committees and participated in budgeting and setting priorities. In some cases, chair persons of the HFMCs were signatories to expenditures in the health facilities, which means that local community leaders had been empowered to participate in programme implementation at facility level.

2.3 Challenges and Options for Improving Public Engagement in Health

Despite playing a critical role as a mechanism for promoting public participation in health, the potential of HFMCs has been limited by wider decentralization challenges such as lack of clarity in responsibilities at local levels, and broader factors such as inadequate access to financial resources. Other challenges include difficulty in sustaining voluntary membership over time, insufficient resources, inadequate representation of and links with the wider community, and inadequate interest in and support for involving communities among key health workers or managers.

For public participation to be effective, citizens should be adequately informed about the issues for them to contribute positively during discussions. However, lack of awareness among the citizenry concerning their role in county processes such as policy formulation, budgeting and planning was identified as one of the major challenges. This was partly attributed to the fact that the majority of the citizens did not have access to information or invitation to public participation forums. Lack of awareness can, to some extent, also be attributed to low levels of education. If participation in health is to be strengthened at county level, it will be important to promote innovative mechanisms for information sharing at county level by key stakeholders, including information on planning and budget-making processes; opportunities for public participation; and roles of elected leaders as duty bearers while promoting social accountability. For civic education to be effective, county governments will also need to come up with structured and institutionalized public participation frameworks to guide citizen engagement in health policy making processes.

Access to information about county processes and activities was still a challenge. This was attributed to poor communication and information-sharing mechanisms. The public in most cases were not informed or only had partial information regarding public participation forums. In other instances, whenever communication was made, citizens were given short notices which they were not able to work with. The poor communication and information-sharing observed had resulted in poor involvement of the public in development and implementation of county plans and policies. Apart from civic education, counties should also enhance public communication to enhance access to information on county activities and transparency. Without proper access to information, the public cannot hold their leaders accountable, a right which is safeguarded in Article 35 of the Constitution. Some of the platforms that can be used to promote public communication include: social media; county websites; mobile phones and SMS; local radio stations; and public noticeboards. Counties can also consider disseminating popular versions of key documents for county planning, budgets, and bills through accessible channels. Other aspects that should be covered include public health, nutrition, role of immunization, hygiene, among others.

Another innovative intervention is use of community scorecards to monitor the performance of healthcare at sub-county and ward levels. Counties should also be encouraged to develop and use community scorecards that take into account major parameters for measuring quality and monitoring health service delivery (Box 2.1).

Box 2.1: Benefits and challenges of a community scorecard

Benefits	Challenges
It promotes dialogue and improves relationship with the service provider	It requires time (holding service providers accountable might be a new concept and therefore a difficult concept to understand and get accepted by communities and service providers)
It facilitates a common understanding of issues and solutions to problems	It can sometimes lead to conflict if not facilitated well
It empowers service users leading to community monitoring of services and increased community ownership of services and projects	It requires good facilitation skills (the CSC deals directly with issues of behaviour and personalities and can be uncomfortable for those on the receiving end)
It facilitates accountability, transparency and responsibility from service providers	Sometimes individuals can be targeted ("finger-pointing")
It clarifies the roles and responsibilities of the service user in service delivery	It can raise expectations with the service users if not facilitated well (creating a demand that cannot be fulfilled by the service provider; need to balance between community demands and service providers ability to provide and how the two sides can support each other to improve services)
It promotes community participation and open dialogue and improves relationships with the service users	
It can expose corrupt practices	
It can show the service provider how to be accountable and responsible	
It is a tool that the service provider can use to monitor progress and service quality together with the community	
It can improve the behaviour of the service users which can assist in improved service delivery	
It promotes a common understanding of issues and solutions to problems	
It promotes accountability for funds and transparency in projects	

Source: CARE Malawi (2013)

Lack of sufficient resources to support implementation of public engagement was also a hindrance. The study found that there were no funds allocated for running committee activities. The members of HFMCs were performing their duties on voluntary basis. This contributed to the failure of the committees to perform their functions. As an example, the main roles of HFMCs include setting priority areas for policy intervention, guiding management of facility finances, encouraging direct engagement of communities in health activities, and ensuring local health problems are identified and included in county health budgets, and addressed

during programme implementation. However, greater emphasis was needed on financial management training, targeted capacity support and ensuring greater community awareness and participation.

Most citizens also lacked capacity to engage in policy and developmental issues affecting them at county level. Whereas public opinion may have been sought on planning, budgeting and policy making, in most instances those invited to participate had limited knowledge about public policy making, planning and budgeting and their potential roles in the forums. For public participation to be successful, citizens not only needed to be aware of the legal provisions for them to participate but also have the knowledge and skills to do so. They also require to be informed about their roles and responsibilities and how to execute the same.

Box 2.2: Best practices from other countries

To enhance public participation in health, Kenya can consider borrowing from the experiences of other countries across the globe such as Italy. In 1978 the Italian government through the National Health Service introduced for the first-time universal health care and developed a decentralization process based on regional and local authorities. The reform recognized citizens' participation as a guiding principle and a strategic point in the whole process of reorganizing the health system. In 1992 a second reform was introduced following the inefficiencies of the first one through Legislative Decree No. 502/92. It outlined a system of quality of health care to be evaluated by users and their representatives as well as by health managers and professionals. One of the regions in Italy which recognized this law was Emilia-Romagna, which introduced Regional Law No. 19 of 1994 (Serapioni and Duxbury, 2012).

The Regional Law No. 19 of 1994, recommended the institution of the Mixed Advisory Committees (MACs) in both health districts and hospitals with the objective of monitoring and assessing the quality of health care from the users' perspective. Local health authorities were to provide user's associations with appropriate office space so that they could perform their activities of representing and promoting patients' rights. The Mixed Advisory Committees (MACs) were composed of representatives of patients and user's associations. One of which is responsible for the coordination of the committee and a minority of professional and health managers.

The impact of this initiative is that it led to improvements concerning humanization and information, control of hygiene in hospital areas and reduction in waiting lists for some medical specialties. However, it also faced some challenges, for instance, topics discussed were often beyond the competence of the local health district committee members and could not be changed by a simple local committee. Additionally, there were financial restrictions that limited the implementation of some proposals presented by the MACs.

Lack of clear guidelines on public participation was still lacking at county level. Whereas there had been public participation and engagements at county level, there was lack of a clearly spelt out framework to guide public participation. A lack of such a framework had partly contributed to poor quality of citizen participation in most counties due to the *ad hoc* way such public participation forums were conducted.

Apathy especially by the middle class and local elite was also a challenge to realizing successful public participation at county level. The middle class rarely attended chiefs' *barazas* or public hearing forums, yet their participation in such forums was crucial not only in providing their opinions but also to hold the County governments accountable. Apathy could also result from lack of knowledge on health matters among the population.

2.4 Conclusion and Recommendation

Having examined the extent of citizen participation in the 47 counties in Kenya, it is evident that whereas there are some forms of participation in the counties, incidence, and quality of health sector citizen participation remains low. This is depicted by the fact that very few respondents had participated in the county health public participation forums. Moreover, only a few of the counties had in place structures to support effective public participation or civic education units in health. Going forward, counties will need to strengthen the structures for citizen participation and adopt efficient and effective modes of public communication to create awareness on the forums and public participation.

The following recommendations are provided in line with the challenges:

(i) Each county should develop a citizen participation framework to guide the process at county, sub-county, ward and facility level. The framework should integrate innovative modalities such as use of both mobile technology and conventional tools such as radio and *barazas*. Counties also need to have in place structures that enable accountability at the local levels, such as citizen oversight committees or surveillance committees. These committees may be formed under the Sub-County Citizens' Forum and Ward Citizens Forums to compel effective health service delivery. Counties also need to form and institutionalize health boards and empower them to operate, fully and under specific guidelines.

(ii) Counties should strengthen mechanisms of communication to ensure all citizens get relevant information on health delivery, planning, budgeting, and ensure effective social accountability. This means publishing and widely disseminating any information of public significance in accordance with the

relevant health policies and legislative frameworks. The public should also be given sufficient notice of meetings to enable members of the public to adequately prepare to attend and participate effectively in consultations.

(iii) There is need to build capacity for county officials on how to productively facilitate public participation. This includes organizing continuous and refresher training courses for duty bearers on participatory methodologies. The training should also aim at facilitating attitude and behaviour change within government organizations.

(iv) Counties should roll out civic education programmes to create awareness among the citizenry on their role in public policy making process and what is required of them in the public participation forums. There is also need to ensure that adequate resources are allocated to facilitate forums at county, sub-county, ward and facility levels.

(v) Counties should strengthen the monitoring, assessment and evaluation process. This includes: identifying the key local level health performance indicators and coming up with a scorecard to guide the process, monitor health service delivery performance, and document key stakeholders affected by decisions made. There is also need to create a forum for discussing health issues on regular basis at county, sub-county, ward and facility levels.

Chapter 3: Performance of the Health Sector

The country recorded significant improvement in health performance indicators. As an example, child survival and nutrition improved while levels of stunting and wasting declined during the period between 1998 and 2015/16. However, the country is yet to meet some of the set policy targets. Further, there are disparities across counties, with more than 50 per cent of the counties below the national average, and with childhood mortality yet to get to the SDG target, a lot more investment is required in the first 1,000 days of life. Maternal mortality has improved, especially with implementation of Free Maternity Services. The nutritional status of children deteriorated in 2016, keeping it below the SDG target. While disease burden has been linked to communicable diseases, non-communicable diseases are on the increase. For example, although HIV prevalence declined marginally, adolescents continue to bear the biggest brunt of new HIV cases. As such, more efforts are required to meet the health targets.

3.1 Healthcare Policy Targets

Health service delivery is an immediate output of the inputs into the health system, such as health workforce effort, drugs and medical supplies and financing. Effective and efficient provision of such inputs thus determines the status of health outcomes. As such, ensuring availability of health services that meet minimum quality standard, and securing access to them are key functions of the health system. In enhancing equity in service delivery, it is expected that the government allocates health resources equitably and employs well trained health professionals, such that every citizen irrespective of their socio-economic background enjoys quality healthcare.

Globally, the healthcare sector challenges revolve around development, financing and maintenance of health systems. These are supply-side constraints which restrict provision of healthcare. They include: (i) shortages in health workers; (ii) shortage of funds allocated to health; (iii) inadequate infrastructure; and (iv) inadequate supply of essential drugs. Thus, to improve the health system, the health sector must undergo major policy, system, and infrastructural reforms aimed at improving access, enhancing service delivery, and promoting universal healthcare coverage (i.e. to all geographical areas and households).

At a regional level, in the context of the African Union Agenda 2063, health and nutrition is a key priority area with ten (10) targets based on the 2013 levels that include: increasing access to quality basic health care and services by at least 40 per cent and access to sexual and reproductive health services to women and adolescent girls by at least 30 per cent; reducing maternal, neonatal and child mortality rates by at least 50 per cent, and the proportion of deaths attributable to HIV/AIDs, malaria and TB by at least 50 per cent. The targets also include reducing under-5 mortality rate attributable to malaria by at least 80 per cent; incidence of HIV/AIDs, malaria and TB by at least 80 per cent; and prevalence of malnutrition by at least 50 per cent; and stunting by 10 per cent.

In Kenya, health forms a focal point in Vision 2030, "Big Four" agenda and Sustainable Development Goals. The SDG two and three are premised on the need to ensure healthy lives, end hunger, achieve food security and improve nutrition, and promote well-being for all. Specifically, the target by 2030 is to: reduce the global maternal mortality ratio to less than 70 per 100,000 live births, neonatal mortality to at least 12 per 1000 live births, and under-5 mortality to at least 25 per 1000 live births; and reduce premature mortality from non-communicable diseases by one third through prevention and treatment and achieve universal health coverage. The goal also targets ending the epidemics of AIDS, tuberculosis, malaria, and emerging tropical diseases such as hepatitis, water-borne diseases, and other communicable diseases; and all forms of malnutrition, including eliminating stunting and wasting in children under five years of age. Other targets include addressing the nutritional needs of adolescent girls, pregnant and lactating women, and older persons; halving global deaths and injuries from road traffic accidents; and strengthening prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.

The Government of Kenya is also building capacity of institutions and strengthening the regulatory and policy framework to address health challenges as clearly spelt out in Vision 2030 and emphasized in the "Big Four" agenda. The current Health Sector Plan provides one of the most important components for addressing issues of equity and the broader national socio-economic agenda in line with the aspirations of universal healthcare coverage. With the 2010 Constitution of Kenya, health services were devolved. The National and County governments were assigned specific functions and mandates to ensure realization of the right to healthcare by every Kenyan citizen. Devolution of healthcare aimed at improving efficiency and equity of health services, stimulating innovation, and promoting accountability and transparency in service delivery. This chapter presents health performance indicators relative to the policy targets.

3.2 Healthcare Outcomes

Over the years, there has been a significant improvement in various outcomes in the country. In 2014, the country recorded positive progress among demographic indicators listed in Table 3.1 (KDHS, 2014).

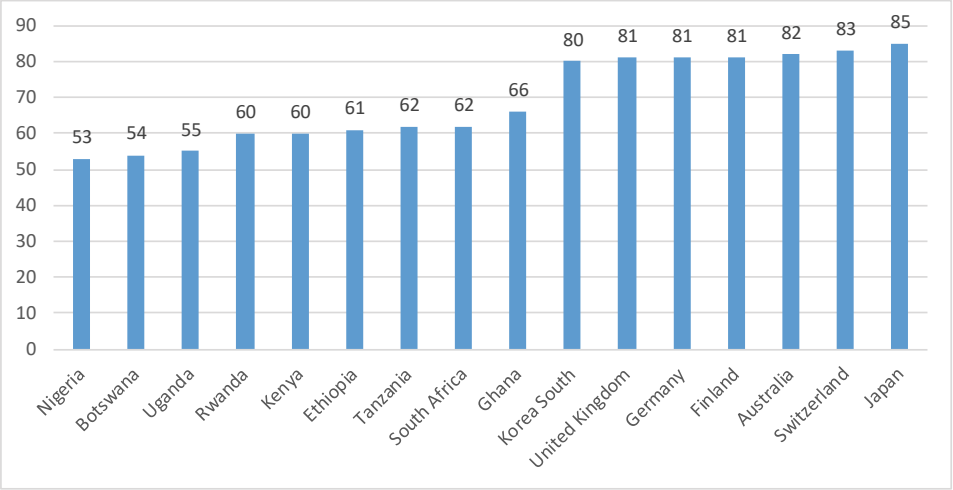
Table 3.1: General indicators for health performance

Indicators	1998	2003	2008	2014	Target
Crude birth rate	41.3 (1999)	38.92	34.8 (2009)	30.5	-
Crude death rate	11.7 (1999)	11.5	10.4 (2009)	10.4	-
Total fertility rate	5.0 (1999)	4.98	4.8 (2009)	3.9	-
Maternal mortality rate	590	414	488	362	70 (by 2030)
Proportion of births attended by a skilled health personnel	44.3	41.6	43	62	-
Contraceptive prevalence rate (CPR)	39 (2009)	38.3	46	58	-
Children 12-23 fully vaccinated	65.4	51.5	77	79	-
Exclusive breastfeeding in the first 6 months	-	-	-	61%	50% (by 2025)
HIV prevalence rate	-	6.7	-	5.9	-
Life expectancy at birth	56.6	-	58.0	60.0	-

Source: KDHS (2008, 2014); WHO (2014); UN (2015)

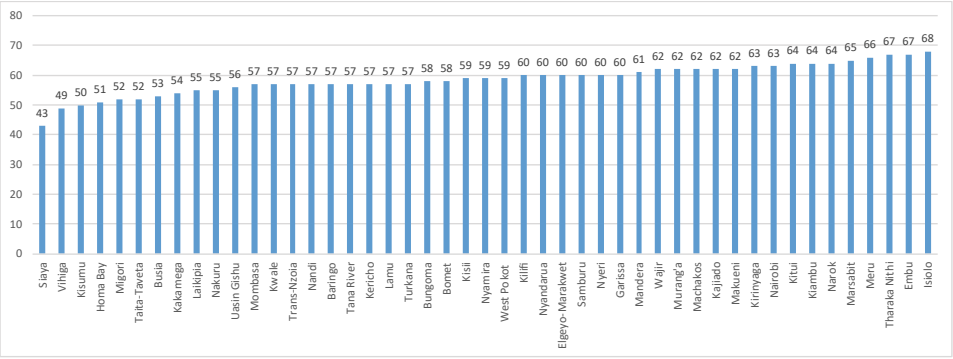
The data shows that crude birth rate declined by 10 percentage points from 41.3 per cent in 1998 to 30.5 per cent in 2014. The decline in crude death rates was more modest, having recorded a decline of one percentage point from 11.7 per cent in 1999 to 10.4 per cent in 2014. Life expectancy increased by two years from 56 years in 1998 to 60 in 2014 (Figure 3.1), which is now higher than that of some countries in the region. However, there are disparities across counties where more than 50 per cent of counties are below the national average (Figure 3.2).

Figure 3.1: Life expectancy for selected countries (years)



Source: KDHS (2014)

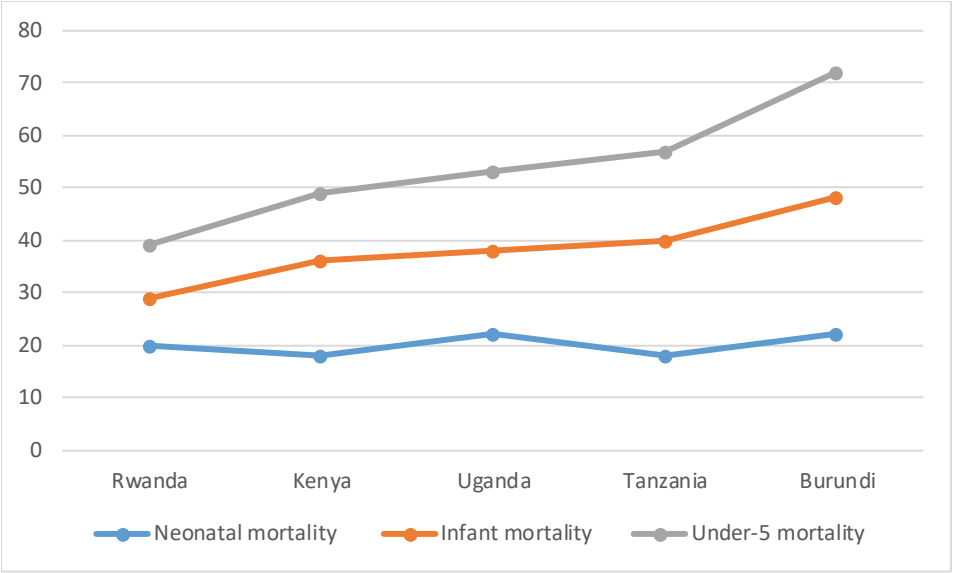
Figure 3.2: Life expectancy (years)



Source: KDHS (2014)

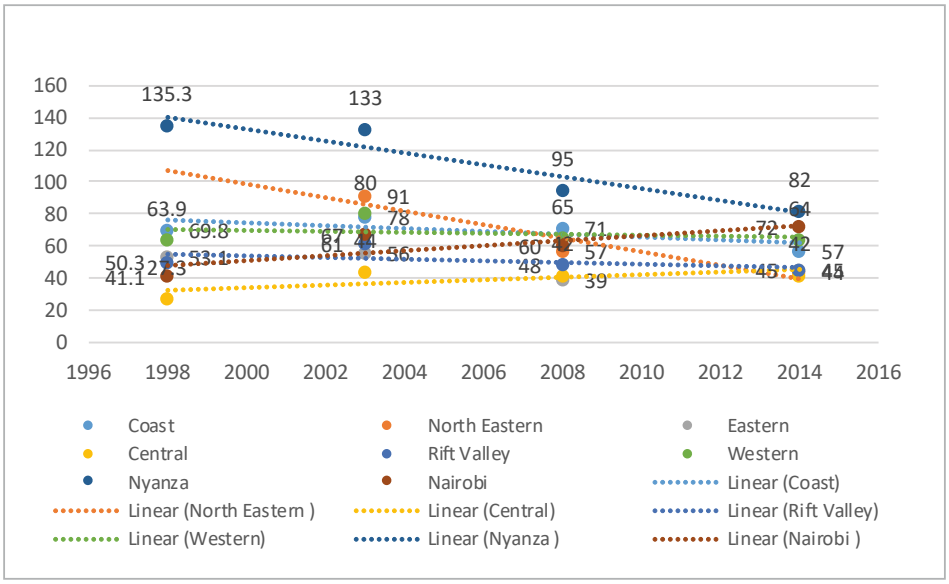
Substantial progress has also been made in improving newborn and child survival as well as maternal health. In the East African region, child mortality in Kenya is relatively lower than for most comparator countries (Figure 3.3). Burundi had the highest rates of child mortality in the region (48 infant deaths per 1,000 live births, 22 deaths during the first 28 days per 1,000 live births and 72 under-five deaths per 1,000 live births). Tanzania and Uganda are second and third, respectively, while Rwanda has the lowest rates of child mortality, which can be partly attributed to increased uptake of family planning methods. Over the last decade, fertility rate in the country has decreased from 6.1 to 4.2, a decline of 1.9 children from 2005.

Figure 3.3: Child mortality in East Africa, 2016 estimates (deaths per 1,000 live births)



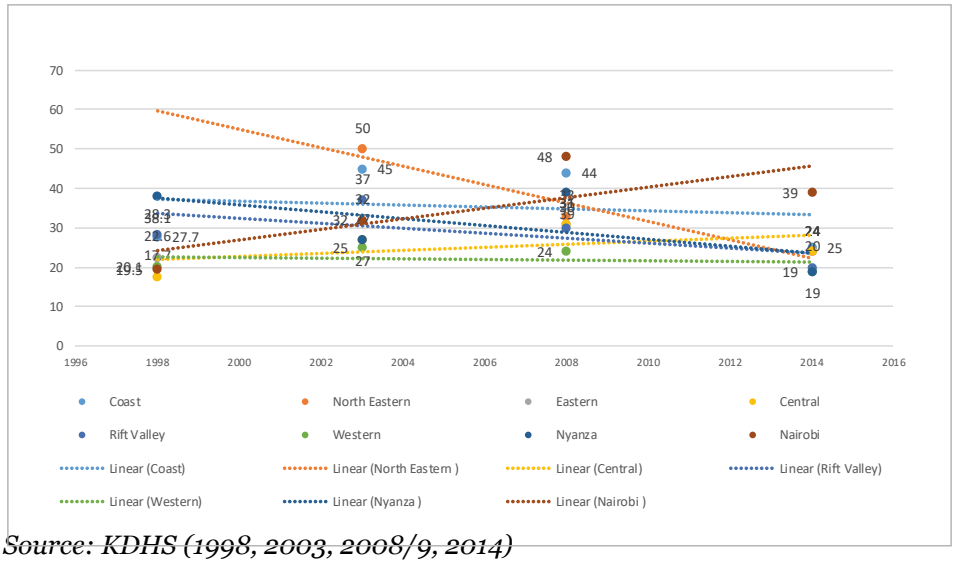
Source: UNICEF, WHO, World Bank (2017)

Figure 3.4: Trend in infant mortality by region (infant deaths per 1,000 live births)



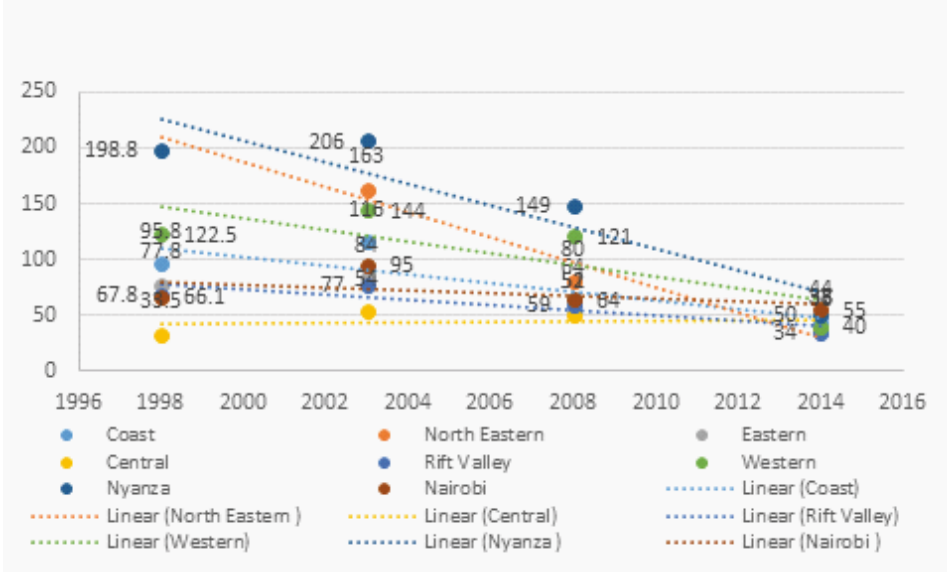
Source: KDHS (1998, 2003, 2008/9, 2014)

Figure 3.5: Trend in neonatal mortality by region (deaths during the first 28 days per 1,000 live births)



Source: KDHS (1998, 2003, 2008/9, 2014)

Figure 3.6: Trend in under-5 mortality by region (under-5 deaths per 1000 live births)



Source: KDHS (1998, 2003, 2008/9, 2014)

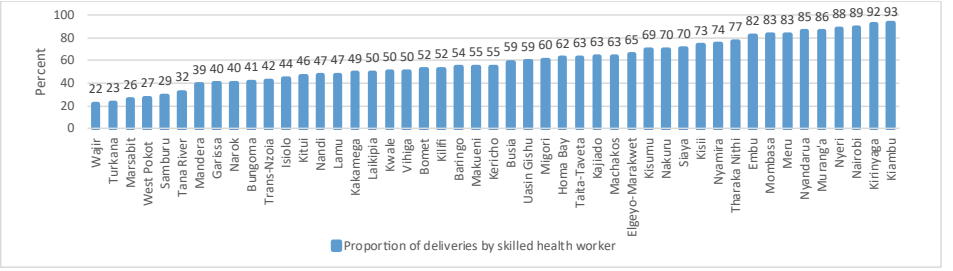
Nationally, childhood mortality continues to decline. With infant mortality standing at 39 deaths per 1,000 live births, this compares well to the 2008/09 rate of 52. Regionally, there has been significant progress in reducing mortality

rates across all the regions except in Nairobi (Figure 3.4). But Nyanza region has the highest levels of infant mortality while Central region has the lowest. The regions, however, are yet to achieve the SDG target of at most 25 deaths per 1,000 live births. Neonatal mortality stood at 21 deaths per 1000 live births in 2014 compared to 28 per 1000 live births for 1998. Regional analysis of child mortality in Kenya (Figure 3.5) reveals that Nairobi is leading in rates of neonatal mortality, while Western region had the lowest. Differences in under-5 mortality are most pronounced across regions, ranging from 34 under-5 deaths per 1,000 live births in Central region to 55 deaths per 1,000 live births in Nairobi in 2014. Nyanza region led with high levels of under-5 mortality between 1998 and 2003. Among regions with low under-5 mortality rate were Central, Eastern and Rift Valley (KDHS, 2014) regions (Figure 3.6).

Key among the factors attributable to improved child survival include: significant increase in the number of children being exclusively breastfed during the first six months, even surpassing the 2025 Global Nutrition Target of 50 per cent. The national rate of exclusive breastfeeding during the first six months of life increased from 32 per cent in 2008/09 to 61 per cent in 2014. Furthermore, the number of children aged 12 to 23 months that were fully immunized had increased by over 20 per cent. Other initiatives include supply of mosquito nets for use by mothers and children in rural and urban informal settlements, handwashing with soap and water, and appropriate management of common childhood illness, including oral rehydration therapy and zinc for diarrhea treatment by health providers. Improvement in maternal healthcare, including an increase in the proportion of births assisted by a skilled provider and delivered in a health facility, as well as an increase in uptake of postnatal care also contributed to improved child survival. However, the country would need to continue investing in the first 1,000 days of life for improved long-term health outcomes.

Maternal mortality has also improved substantially from 590 per 100,000 live births in 1998 to 362 deaths per 100,000 live births in 2014. The change was,

Figure 3.7: Proportion of deliveries by skilled health worker (%)

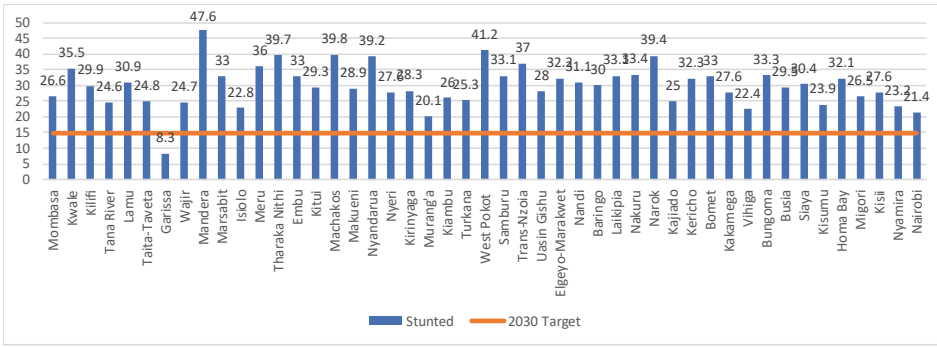


Source: KDHS (2014)

however, not commensurate with the substantial increase in population growth rates. In addition, fertility rate has been consistently decreasing. Whereas in 1978 a Kenyan woman gave birth to 7.8 children in her lifetime, in 2014 the number of children decreased to 3.9 births per woman. Ante-natal clinic coverage continues to register improvement from 51.7 per cent (2014/15), 51.9 per cent (2015/16) to 52.2 per cent (2016/17). This has been matched by an even more remarkable improvement in births by skilled attendants in health facilities from 73.7 per cent (2014/15), 77.4 per cent (2015/16) to 77.4 per cent (2016/17). This could largely be attributed to implementation of the Free Maternity Services, dubbed *Linda Mama* programme. Proper medical and hygiene conditions during delivery reduce the risk of complications, infections or death of the mother and baby. On average, 62 per cent of births in Kenya are delivered by a skilled health personnel. A similar proportion of deliveries (61%) took place in health facilities. At county level, skilled delivery attendance and delivery in a health facility varies considerably across counties as shown in Figure 3.7.

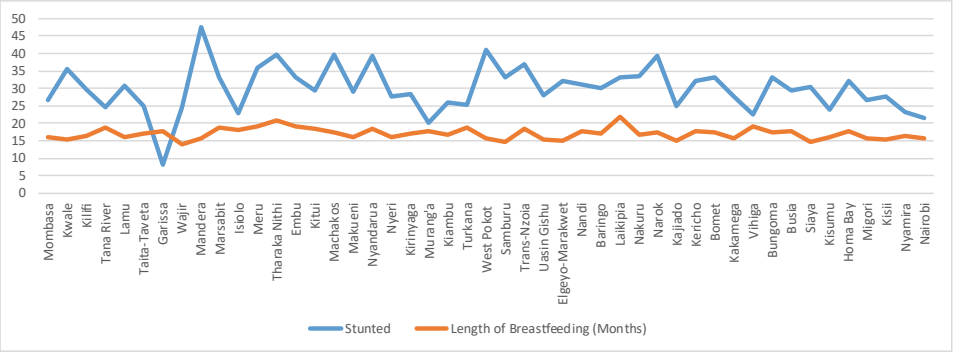
The nutritional status of children, which is measured by the percentage of those stunted, underweight, and wasted deteriorated during the period between 2014 and 2016 (Table 3.2). Nationally, the number of stunted children increased from 26 per cent in 2014 to 29.9 per cent in 2016. This is way below the SDG target of reducing the percentage of stunted children to 14.7 per cent by 2030. The percentage of wasted children has also increased from 4 per cent to 6.7 per cent against SDG target of less than 5 per cent. A similar trend was also witnessed for underweight children, which increased from 11 per cent to 13 per cent against SDG target of 8.4 per cent. Analysis of stunted children at county level reveals that only one county had attained and surpassed the SDG target of 14.7 per cent as it had only 8.3 per cent stunted children while the highest recorded was 47.6 per cent as shown in Figure 3.9. More than half of the counties had attained the SDG target of 5 per cent for wasted children; the lowest was 0.7 percent and the highest 30

Figure 3.8: Stunting levels versus SDG target (%)



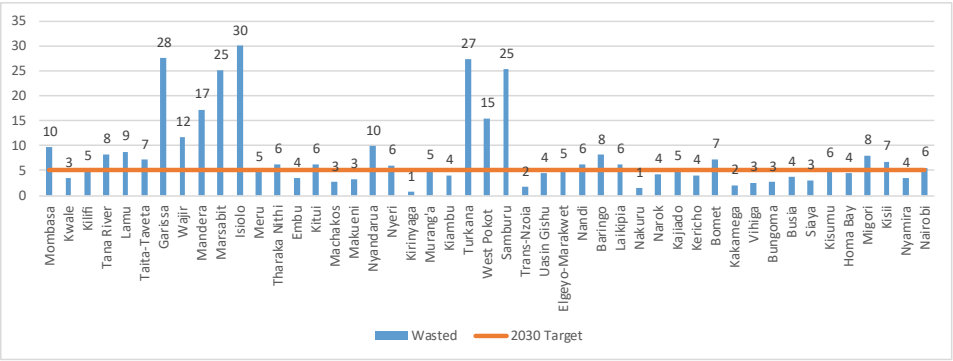
Source: KNBS (2018)

Figure 3.9: Stunting versus duration of breastfeeding (months)



Source: KNBS (2018)

Figure 3.10: Wasting levels versus SDG target



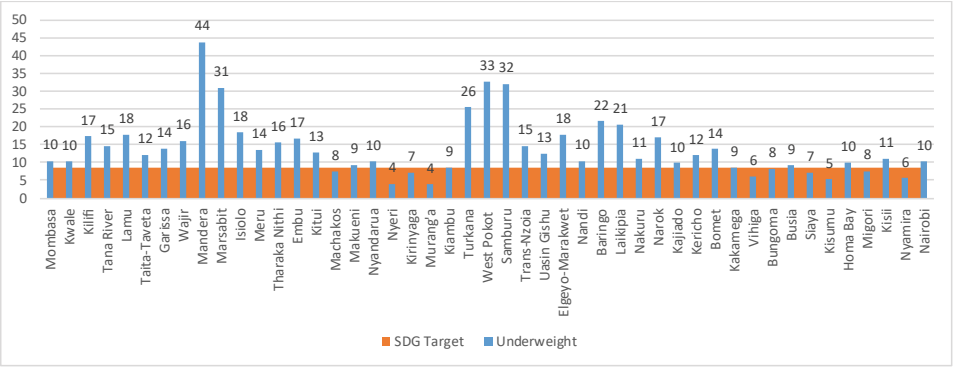
Source: KNBS (2018)

per cent. Other counties that registered high percentage of wasted children were mostly ASAL counties. This can be attributed to poor access to healthcare and poor food security characterized by low nutrient diet. There was also a close link between stunting and duration of breast feeding (Figure 3.8).

Table 3.2: Nutritional status of children (%)

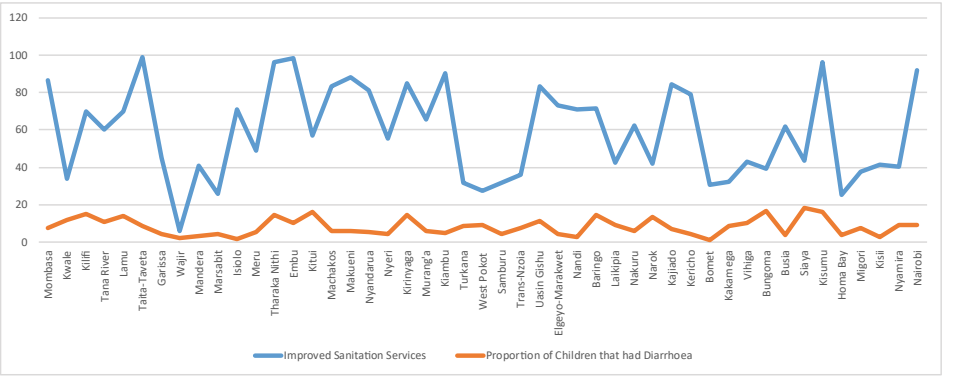
Indicators	1998	2003	2008	2014	2016	2030 Target
Stunted	38	36	35	26	29.9	14.7% (40% reduction from the 2012 levels)
Severely stunted		11	14.2	8	11.4	
Wasted	7	6	7	4	6.7	Less than 5
Severely wasted		1.2	1.9	1	2.5	

Figure 3.11: Underweight levels versus SDG target



Source: KNBS (2018)

Figure 3.12: Improved sanitation versus Diarrhoea



Underweight	18	16	16	11	13	8.4% (30% reduction in low birth weight from a baseline of 15% in 2012)
Severely underweight		4.1	3.6	2	2.6	
Overweight	6	6	5	4		No increase in childhood overweight

Source: KDHS (2008, 2014; WHO (2014); UN (2015), KNBS (2018)

On average, 21 counties did not meet the SDG target of wasting (of at most 5%) (Figure 3.9). Counties that are far apart from the SDG target will need to invest more resources in child health in the next decade to enable the country meet the set target. Regarding underweight levels at county level, 12 counties had attained the SDG target of at the most 8.4 per cent of underweight children. Majority of

the counties which had higher percentages of underweight children were in ASAL counties as with wasting (Figure 3.10).

Lack of access to basic sanitation and safe, clean drinking-water exposes users to high risks of contracting infectious diseases such as diarrhoea. The prevalence rates of diarrhoea was 18.2 per cent (Figure 3.11), attributable to the low levels of improved sanitation. Overall, the country will need to adopt an integrated approach that links health to other sectors such as agriculture (for nutrition), water and sanitation (for hygiene) and infrastructure services (transport to health facilities) for improved health outcomes.

3.3 Disease Burden and Deaths

The disease burden remained relatively high in the country, with communicable diseases (CD) and non-communicable diseases (NCD) posing the greatest burden. Kenya's disease burden has historically been linked to communicable diseases such as HIV/AIDS, malaria, respiratory infections and tuberculosis (TB). However, recent data indicates an increase in the NCDs, such as cardiovascular diseases and cancer. It is projected that by 2027, NCDs will be the main disease burden for the country if adequate interventions are not put in place (Kenya Health Sector Report 2016).

Pneumonia, malaria, cancer, HIV/AIDS and tuberculosis remain the top five leading causes of death in the country. Pneumonia accounted for 11.2 per cent of deaths in the country in 2015 and 2016 followed by malaria and cancer (Table 3.3). Despite the decrease in HIV prevalence rate, co-infection of HIV/AIDS and TB coupled with the emergence of drug resistant TB strains remains a challenge.

The proportion of registered deaths attributable to cancer rose from 7.8 per cent to 8.3 per cent during the two years. Other NCDs on the rise includes hypertension, heart disease and diabetes. Major challenges exist in terms of equipment and experts such as oncologists especially for cancer. Changing lifestyles linked to urbanization, unhealthy diets and modernization are associated with the increase in the incidence of non-communicable diseases.

The rise in deaths attributed to CDs and NCDs is an indication that the country needs to put more efforts in achieving the global health targets. Global health targets are usually established to help in identifying priority areas, inspiring ambition at country level, and developing accountable frameworks. The targets are selected on basis of their epidemiological and public health relevance, the coherence and alignment with targets expressed in relevant policy frameworks, the availability of evidence-based feasible public health interventions, the existence of surveillance systems or other data collection instruments that would allow to set a baseline and

monitor changes over time, and the country capacity to monitor indicators for the proposed targets.

Table 3.3: Registered deaths by major cause 2013-2016 (number)

Cause	2013	2014	2015	2016	2015 (%)	2016 (%)	Global Health Targets
Malaria	23,789	22,948	20,691	16,000	10.3	8.4	To end (by 2030)
Pneumonia	22,918	21,640	22,473	21,295	11.2	11.2	75% reduction from 2010 levels- children under 5 (by 2025 from 2013)
Cancer	13,720	14,175	15,714	15,762	7.8	8.3	-
HIV/AIDS	11,448	12,235	11,131	9,471	5.6	5.0	To end (by 2030)
Tuberculosis	11,186	10,986	10,183	4,735	5.1	2.5	To end (by 2030)
Anaemia	8,124	8,469	8,472	8,165	4.2	4.3	50% reduction (by 2025 from 2013)
Road traffic Accidents	4,942	4,710	5,488	4,809	2.7	2.5	To reduce by half of when and how much? (by 2020 from 2013)
Other Accidents	4,857	4,187	3,887	4,166	1.9	2.2	-
Heart Disease	4,544	5,030	5,799	5,353	2.9	2.8	Reduce prevalence of blood pressure by 25% (by 2025 from 2013)
Meningitis	4,265	4,555	4,499	4,374	2.2	2.3	-
Sub total	109,793	108,935	108,337	94,130	54.1	49.4	-
Others	84,539	89676	91,868	96,507	45.9	50.6	-
Total	**194,332**	**198,611**	**200,205**	**190,637**	**100**	**100**	**-**

Source: KNBS (2017), Economic Survey

3.4 Conclusion and Recommendations

Generally, healthcare performance has considerably improved but the SDG targets are yet to be achieved. This has also been the case across some counties, but there are regional disparities. Health indicators and outcomes reveal a positive change

over the post-devolution period. For instance, there has been decline in maternal and child mortality attributable to increased rates of deliveries by skilled health personnel, pre- and post-natal visits, exclusive breastfeeding and immunization of children between 12 to 23 months. Similarly, life expectancy has increased, although it is lower than most developed economies. As such, more efforts are required to meet the health targets.

The child nutrition status is below the SDG target and with significant disparities across the counties. As such, counties need to bring on board community health workers and nutritionists, and implement a well thought out campaign to educate Kenyans on how to stay healthy. Further, for the country to address stunting and undernourishment of children, it needs to ensure that food security for all citizens is guaranteed through strong food production and distribution systems across all counties and seasons.

The disease burden has increased. In addition to yet to be met communicable diseases targets, non-communicable diseases are on the rise. There is thus need for more concerted efforts by both the County and National governments to spur the country towards attaining the targets.

To enhance performance of the health sector and achieve universal healthcare, the country needs to align the universal healthcare strategy with preventive measures at county level. This is the most important part of the health are strategy because of the associated cost effectiveness.

Chapter 4: Health Financing

Healthcare financing strategies play a key role in determining the adequacy of health services provided, accessibility by the households, and ultimately the health outcomes. With the devolved system of government, the proportion of budgetary allocations to the health sector at both National and County government level matters in attaining universal healthcare. Currently, although budgetary allocations have increased, they are below the 15 per cent recommended by the African Union (AU), and there are significant disparities across counties. A quick win to improve health outcomes would be to reduce wastage and enhance efficiency in utilization of the current funds by strengthening public finance management at county level. Moreover, prompt disbursement of funds both by the government and development partners is important in supporting implementation of the annual work plans. With a significant share of health financing in form of out-of-pocket spending, expanded coverage of the National Health Insurance Fund will serve to reduce the financing burden of households. However, more innovative methods of health financing are required to achieve universal healthcare, and therefore the need to reorient legislation on health financing. In addition, investment in related sectors such as sanitation will complement in improving the health outcomes.

4.1 Sources of Health Financing

Healthcare in Kenya is financed from three main sources: government expenditure, household expenditure, and donor funding. Household expenditure includes both out-of-pocket and formal and non-formal insurance spending by households. With respect to government spending, the main expenditure flow is from the National government to the County governments. An important additional form of finance to counties is the conditional grants that are targeted at Level 5 hospitals, free maternal healthcare, compensation for user fees foregone, and leasing of medical equipment.

Financial resources also flow from the governments to the health facilities. County governments allocate and channel financial resources mainly to primary healthcare facilities while the National government through the Ministry of Health channels funds to Level 5 facilities and the national referral hospitals. The National government also channels financial resources to universities and teaching facilities offering medical science-oriented courses through the Ministry of Health and in some cases through County governments. Within the devolved

governance structures, County governments have clear budget lines for financing primary healthcare and other devolved health-related expenditures in the respective jurisdictions.

Other important players are donors, the private sector and households. Donors finance the health sector through direct support for targeted programmes to National and County governments and support for not-for-profit health facilities. The support can be received as conditional grants. Households, on the other hand, finance healthcare through out-of-pocket (OOP) spending while the private sector finances health through direct support for health programmes and or financing private health facilities.

4.2 Total Health Expenditure

Kenya's Total Health Expenditure (THE) comprising government, donor and private/household spending increased in absolute value from Ksh 271 billion in 2012/2013 to Ksh 346 billion in 2015/16, an increase of 28 per cent (Ministry of Health, 2017). This was equivalent to 6.8 per cent of GDP in 2012/13 and 5.2 per cent of GDP in 2015/16. The government expenditure on health as a percent of total government expenditure increased from 6.1 per cent in 2012/13 to 6.7 per cent in 2015/16. The total budget allocated by County governments to the health sector increased from 13 per cent of the total county budgets in 2013/14 to 25 per cent in 2015/16. This is a clear demonstration of the priority that healthcare has been gaining at both national and county levels.

The governments (national and county) were major financiers of healthcare, contributing 37 per cent of THE in 2015/16, up from 32.1 per cent in 2012/13. The private sector contributed 40 per cent of THE in 2015/16, an increase from 32 per cent in 2012/13 while the donor contribution was 23 per cent of THE in 2015/16 down from 25.5 per cent in 2012/13. In the devolved governments, the proportion of their total budgets allocated to health increased from Ksh 64 billion in 2014/15 to Ksh 105 billion in 2017/18. Owing to the increasing public expenditures on health, the share of public sector financing to THE has been rising.

Despite the increase in public sector expenditures in healthcare over time, the total government expenditure on health has persistently failed to meet the 15 per cent share of public spending recommended by the African Union (2001). In 2015/16, governments' allocations to health constituted just about 7 per cent of the total budget. Even so, care should be taken in using the 15 per cent benchmark as more financial resources is not a necessary and sufficient condition for better health services and/or outcomes. Reports of inefficiency and wastage within the

health sector points to the possibility of achieving better health outcomes with increased efficiency using the current level of resources.

Perhaps a more pragmatic aspect to monitor (and reduce) would be the share of out-of-pocket (OOP) expenditure which continues to be a major source of financing for health services in Kenya, accounting for 24.6 per cent of Total Health Expenditure (THE) in 2015/16. A high share of OOP expenditure has been shown to lead to various forms of inequity in accessing healthcare. It is associated with catastrophic health spending that may create a vicious cycle of ill health and impoverishment.

The Fourth Schedule of the Constitution devolves the delivery of primary healthcare to the county level. Consequently, the share of the National government spending on health has been declining while county spending has expanded since the roll out of devolution in 2013/14. The health spending by the National government as a percentage of total public spending was 100 per cent at the advent of devolution in 2012/13 and declined to 42 and 48 per cent in 2014/15 and 2015/16, respectively (Table 4.1). Correspondingly, the share of county spending has increased to over 50 per cent since 2014/15.

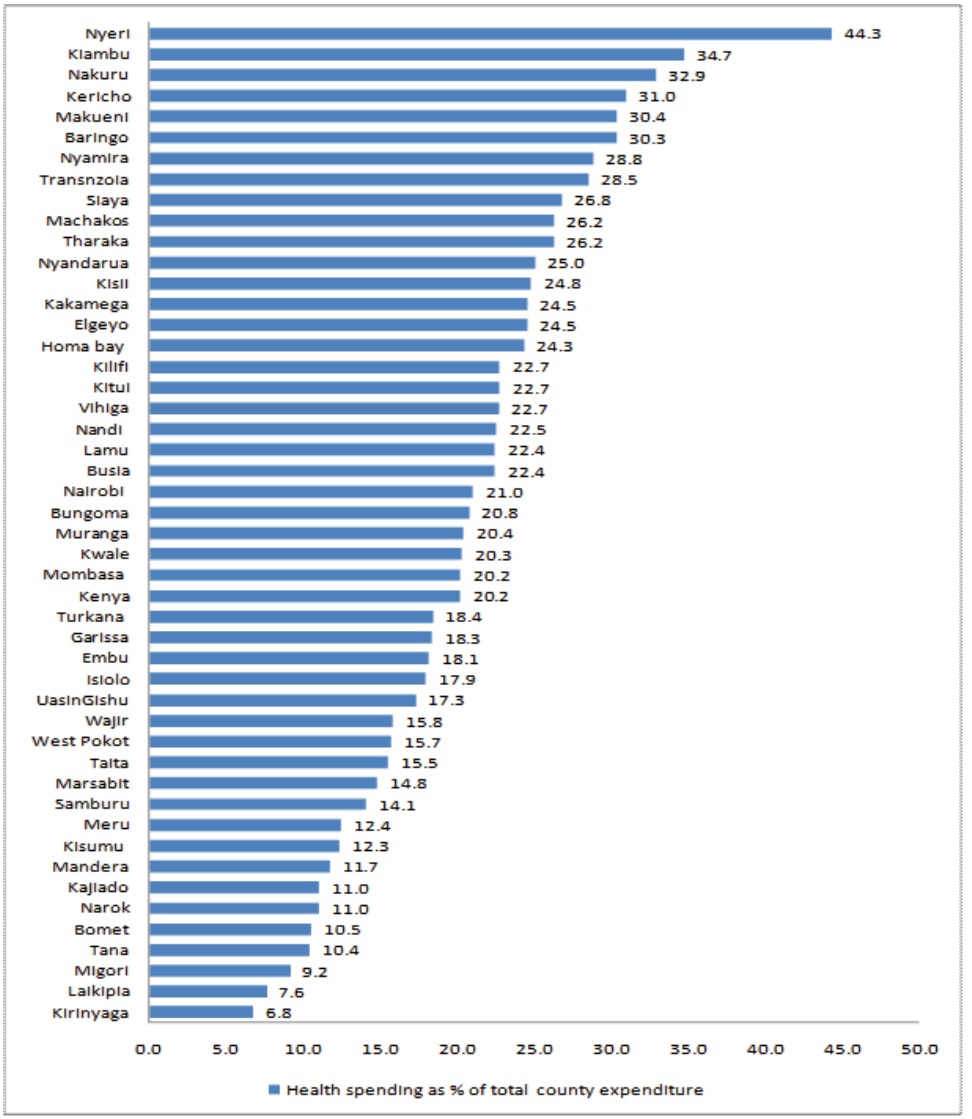
Table 4.1: Total health expenditure shares of national and county governments and share of health spending to total public expenditure

	2011/12	2012/13	2013/14	2014/15	2015/16
Health expenditure by National government (% of total public spending on health)	100.0	100.0	80.1	41.5	48.1
Health expenditure by County government (%) as % of total public spending on health	0.0	0.0	19.9	58.5	51.9
Total health expenditure (Ksh million)	63,198.32	76,028.29	42,695.99	93,508.18	121,655.38
National expenditure (Ksh million)	1,014,071.12	1,238,869.95	1,530,012.93	1,927,017.76	2,201,142.41
Health share of total expenditure (%) this is not reflective	6.2	6.1	2.8	4.9	5.5

Source: Ministry of Health (2016)

Although data is provided on health spending, determining County governments' exclusive spending on health is difficult because health is not a stand-alone ministry

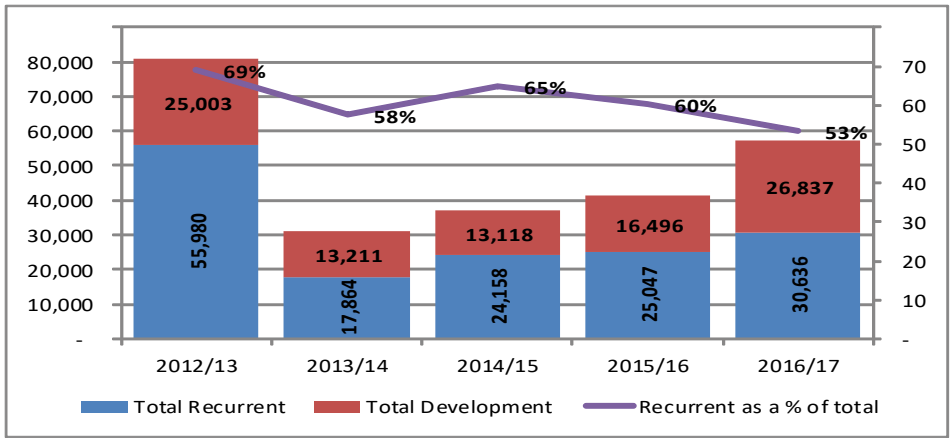
Figure 4.1: Health spending as a percentage of total County expenditure, 2015/16



Source: Health Management Information Systems (HMIS) (2017)

in some counties, and includes related sectors/sub-sectors such as sanitation and environment. All spending in a stand-alone health ministry is health spending, but some sockets also share administrative costs which are difficult to apportion. During the period under review, county spending on health increased considerably from Ksh 8.4 billion in 2013/14 to Ksh 63.1 billion in 2015/16, accounting for 20 per cent of total county spending (Table 4.1). The increase can be attributed

Figure 4.2: Recurrent and development expenditure (Ksh million) and share of recurrent spending to total spending (%) for 2012/13–2016/17



Source: Ministry of Health (2017)

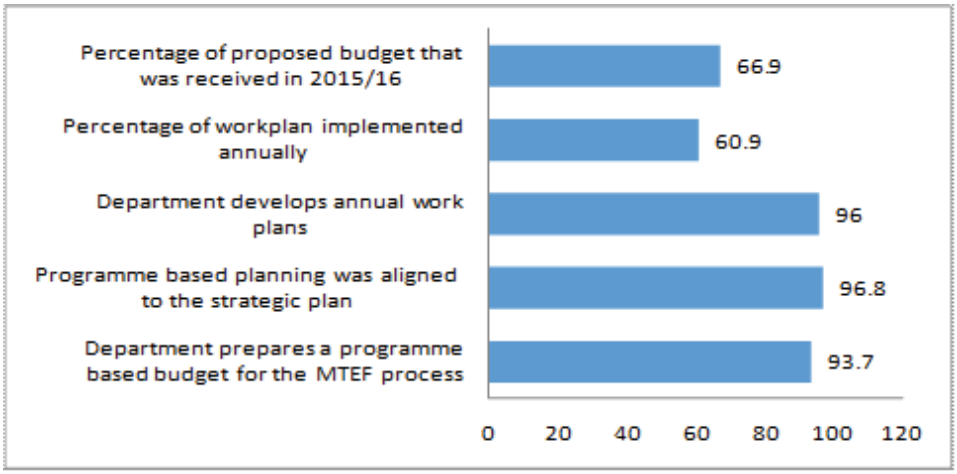
to most counties prioritizing health provision, with key spending drivers being human resources, drugs, equipment and infrastructure development. However, there were variations across counties, with the proportions of their budgets allocated to health ranging from a high of 44.3 per cent to a low of 6.8 per cent in 2015/16 (Figure 4.1).

It is worth noting that recurrent expenditures by the National government has been declining over the last five years from 69 per cent in 2012/13 to 53 per cent in 2016/17 mainly because of the devolved recurrent spending which has left the National government with more development spending, especially in providing key capital equipment (Figure 4.2). In 2017/18, over half of the budget of the National government through the Ministry of Health (Ksh 31.4 billion), or 53 per cent of total budget, was allocated for development largely focusing on rehabilitation of healthcare infrastructure while the rest was spent on recurrent expenditure, including paying salaries for health workers and supply of medical drugs.

4.3 Financial Management at Facility Level

The Health Assessment Survey 2017 evaluated health facilities on their experiences and financial management practices. The specific aspects that were evaluated included: existence of financial management structures, use of financial management systems and whether there were delays in disbursement of financial

Figure 4.3: Existence of financial management structures (%)



Source: Health Assessment Survey (2017)

resources. The results are summarized in Figure 4.3 and Tables 4.2 and 4.3.

Most health departments indicated that they prepared programme-based budget for the MTEF process aligned to their strategic plans. In addition, most departments (97%) developed annual work plans, but implementation of the work plans presented a challenge since most counties implemented only about 60 per cent or less of what was planned. The main hindrance in implementing work plans was adequate funding. The PFM Act 2012 requires that the approved Fiscal Strategy Paper be submitted to the County Assembly by 28th February of each year. Counties were asked to provide dates for which their submissions for 2016/17 and 2017/18 were done. The results indicated that most counties met the deadline.

Public health facilities reported experiencing delays in the disbursement of funds from the National (74 %) as well as the County governments (77%). Reported cases of delays of disbursements was particularly high for dispensaries (at nearly 90%). Such delays are likely to impact on service delivery particularly at the public primary healthcare level facilities frequented by poorer households.

The use of the 10/20 user fee policy at the dispensary and health centres was not widespread and was applied by 20 per cent of dispensaries and 25 per cent of the health centres sampled (Table 4.2). From the key informant interviews with facility heads, it emerged that some public health facilities did not apply the rule because of financial constraints. It was also observed that some of these facilities practiced some form of price discrimination in which the facilities apply charges based on perceived patient's ability to pay.

Table 4.2: Financing and its implementation aspects (%)

	Rural Public	Urban Public	Public	Dispensary	Health Centre	District Hospital	County Hospital
Did the facility experience delays in disbursement from National government in 2015/16?	72	77	74	87	71	73	75
Did the facility experience delays in disbursement from County government in 2015/16?	77	76	77	90	82	64	80
Does the facility implement the 10/20 user fee policy?	26	32	28	20	25	40	28
How are funds collected at the facility handled? Banked (Yes)	92	85	89	64	94	76	93

Source: Health Assessment Survey (2017)

Note: the 10/20 policy is a contributing mechanism where patients pay Ksh. 20 for cards in Dispensaries and Health Centres respectively

Most of the funds collected by public health facilities were banked rather than retained at the facility, which is consistent with the PFM Act of 2012. About 9 out of 10 facilities reported that they banked their proceeds. Health centres had the highest percentage of 94 per cent while dispensaries had the lowest percentage of 64 per cent (Table 4.2). Generally, banking revenue was considered prudent, but if this practice is combined with delayed disbursements, public health facilities will continue to operate with strained financial resource flows, and health facilities may have routine services such as health emergencies, and cleaning compromised.

In assessing financial management practices of public health facilities, facility heads were asked to respond to questions on facility financial management. Specifically, facility heads were asked if they made submissions of quarterly financial reports and whether they underwent auditing of their financial records. These and other results are summarized in Table 4.3.

The findings indicate that 80 per cent of public health facilities prepared annual budgets. A similar proportion indicated that they submitted quarterly financial reports, with rural facilities performing slightly better than their urban counterparts with respect to submission of reports. Most public facilities (96%) reported having a health facility committee or a hospital management committee in place. The health management committees are involved in the management of health facilities and setting priorities for sector spending at facility level.

Table 4.3: Financial management practices (%)

Financial management aspect/ practice	Rural Public	Urban Public	All Public	Dispensary	Health Centre	District Hospital	County Hospital
Does the facility use any financial management system?	53	64	57	36	50	75	81
Is a health facility/ Hospital Management Committee in place for the facility?	95	98	96	100	96	97	94
Do you prepare annual budgets for the facility?	73	87	80	86	75	85	78
Do you submit quarterly financial reports?	82	76	80	81	85	84	70
Are your financial books audited annually?	83	79	82	72	89	86	78
Does the facility have qualified staff in finance/ accounts?	51	73	60	35	46	86	85

Source: Health Assessment Survey (2017)

About eight out of every ten public health facilities had their financial books audited annually while six out of every ten reported having staff qualified in finance. In most cases, dispensaries and health centres did not have staff dedicated to their bookkeeping-related needs. This could be attributed to the fact that the bookkeeping activities are elementary and may not require the full-time services of an accountant or bookkeeper. The practice across most Level 1 and Level 2 facilities was that the medical staff in charge of the facility doubled up as the facility bookkeeper.

Although some facility heads reported that they received on-the-job training in bookkeeping, a key observation was that most Level 1 and Level 2 facilities did not have robust financial records. Some of these records were not available on request. Lack of proper record keeping can undermine prudent management of financial resources, since these facilities receive financial resources from numerous sources including public funds, donor funding and various forms of community support.

Counties were requested to outline the key challenges facing health financing within their jurisdictions. Nearly all departments decried the inadequate allocation of financial resources as their main hindrance. Others were: delays in funds disbursements, failure of donors to fulfil their pledges, poor management, and misappropriation of funds.

4.4 Health Insurance Coverage

Social health insurance has been recognized as one of the pillars for Kenya to achieve Universal Health Coverage. In this regard, the government has been promoting reforms in the National Hospital Insurance Fund (NHIF) since 2013 to make it one of the key drivers for achieving universal health coverage. These reforms include changing the management structure at NHIF to make the institution more effective and responsive to customer needs; reviewing the contributions of all members; expanding the benefit package to include out-patient cover for all members and new packages related to addressing non-communicable conditions; and instituting strategies to enrol more members. It is estimated that NHIF contributes over 10 per cent of all health expenditure in the country.

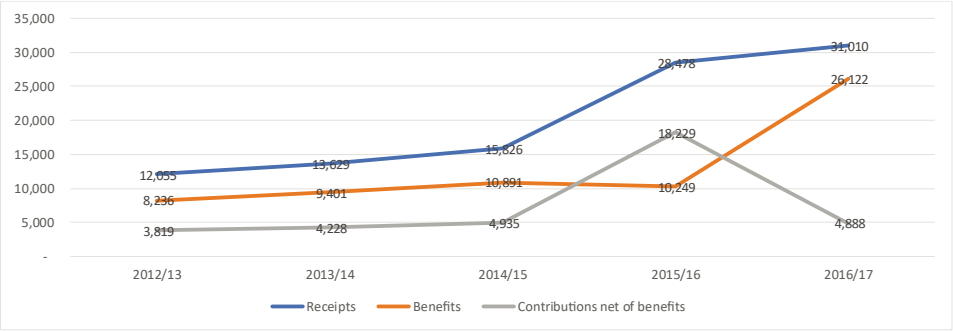
NHIF has already initiated effective recruitment strategies to ensure constant growth of members in both the formal and informal sectors. As at the end of 2016/17, total membership had grown to 6.8 million, which is estimated to encompass an overall coverage of 27.2 million Kenyans (principal contributors and their dependants), implying that over 50 per cent of Kenyans are covered by NHIF. The target during the third Medium Term Plan (MTP) of Vision 2010 running from 2018 to 2022 is to achieve over 70 per cent health insurance coverage. Partnership with both the National and County governments will be key in expanding the reach of NHIF.

The increased membership has seen the Fund inject over Ksh 33 billion in the health sector, with projections to reach Ksh 45 billion by end of the MTP III period. NHIF is also playing a major role in social health protection by implementing insurance subsidy programme among the poor and vulnerable groups. In 2016/17, NHIF with the support of the National Government and other partners provided insurance cover to over 160,000 households under the Health Insurance Subsidy Programme (HISP) and 41,666 Older Persons and Persons with Severe Disabilities (OP & PWSD). County governments are already replicating this approach and are rolling out various innovative programmes.

The sector undertook to cover all the elderly and persons with severe disabilities (E&PWSD) who were receiving cash transfer from the ministry responsible for social security services. The NHIF cover was offered to the beneficiaries through the premier Super-Cover initiative, fully subsidized by the government. The cover was eligible for benefits by the principal member, one spouse and up to five (5) dependents. Those persons whose households were receiving some form of health benefits through other government-funded projects were not eligible for benefits.

From Figure 4.4, over the period between 2012/1309 and 2016/17, NHIF financial inlays increased from Ksh 8 billion to Ksh 31 billion in 2016/17. While contributions

Figure 4.4: Trends in NHIF income and expenditure (Ksh million)



Source: Ministry of Health (2017)

and benefits rose gradually and at similar pace, the benefits remained constant despite the sharp rise in receipts. The variance can be attributed to the fact that claims were rarely being made perhaps due to the perceived delays in payment processing and some beneficiaries with private insurance opted to making claims from the private insurers. This has resulted in a widening gap between the receipts and benefits over the last three years. However, the claims increased substantially between 2015/16 and 2016/17. This can be attributed to the enhanced awareness campaigns by NHIF and the recent reforms in NHIF under the UHC initiative. Privately insured beneficiaries are also now required to make claims from NHIF prior to claiming from the beneficiaries' private health insurers.

The private health insurance companies are envisaged to continue playing an important but modified role in financing the health system by providing top up supplementary health insurance.

4.5 Lessons for Kenya from Healthcare Financing Strategies of other Countries

The sub-section provides a synthesis of lessons for Kenya from the healthcare financing mechanisms in selected countries, including high income countries such as Canada, Republic of Korea, Singapore, and the United Kingdom as well as upper middle-income countries such as Chile and Malaysia. These countries have exemplary health indicators and relatively well-developed health financing systems. The existing mix of financing strategies used in the health sector varies

among nations and regions. The general trend across countries is a convergence towards the promise of universal health coverage partly by reducing reliance on OOP payments.

A key lesson is that achievement of sustainable healthcare financing strategies depends not only on health system reforms but also on economic development in general. Economic growth and development, together with formalization of the labour market, may offer an easier path to the achievement of a more equitable universal system of health coverage. In many countries in Asia, the extension of coverage of social health insurance occurred concurrently with the process of formalization of the entire labour force. The achievement of relatively equitable healthcare financing systems in most of Asia may have been a result of economic development more than health system development or reform. Thus, in Kenya's case, sustained growth and development is likely to be a necessary complement in the achievement of equitable and sustainable social health insurance coverage, or a predominantly tax-based system of financing healthcare.

As best practice, most countries aim to gradually reduce the ratio of OOP expenditures to total expenditure on health in achieving universal healthcare. Two commonly used financing strategies include general taxation and national health insurance plans or schemes. Most successful countries achieved a predominantly tax-based financing system or a social insurance system through a long gradual process. As examples, Canada and the Republic of Korea took 30 and 12 years, respectively, while Japan and the United Kingdom took 36 years. For the Republic of Korea, coverage was initially instituted for firms with over 500 workers, and this was extended to government and private school employees and firms with more than 300 workers after 3 years of its commencement. Firms with over 16 workers were included in the NHI 18 years later. Finally, the urban self-employed and firms with more than five (5) workers were incorporated in the NHI scheme 21 years after the programme's rollout (Kwon, 2002; Cheng, 2004, Marchildon,2005 and Li, 2006). In addition to gradual inclusion of constituents or beneficiaries, services that are covered by the universal coverage are usually introduced gradually. As an example, Canada initially extended universal access to hospital services, and later the federal laws extended universal access to doctor services.

Supportive and flexible statutory and regulatory laws are crucial for the success of health financing reforms and outcomes. In the case of Canada, there was clear statutory demarcation of healthcare sectors that are financed by the public sector and those that are not – favour economies of scale and administrative efficiency within the public and private sectors (Li, 2006). Chile's case demonstrates that circumstances are not static. The country had to introduce new regulations and a

new law in 2005 that established a list of 56 priority health problems that both the public and private insurance sectors were obliged to cover. This was to prevent the public sector from being overburdened (WHO, 2008). A key lesson from Chile's reforms in the 1980s is that introducing private health insurance competition within social health insurance systems without the necessary regulations, harmony, and risk adjustment mechanisms can have negative consequences on efficiency and equity.

Safety nets are a common strategy used to take care of the poor. This is based on the observation that there is no single solution that solves the problem of health financing. Some common innovations to expand social protection (safety nets) in health include: opening voluntary affiliation to self-employed and informal workers; providing public subsidies to social health insurance systems to enroll the poor; compulsory universal participation; and expanding the pool through integration of private health insurance. These innovations may have their unique shortcomings and may require careful design before their adoption.

- *Opening coverage to self-employed and informal workers through voluntary affiliation is ongoing in Kenya*. Countries that have tried this innovative method include Chile and Mexico. The innovation has had major obstacles and limited success (Bitran et al., 2000; IMSS, 2003). A common pitfall is that the flat rate contribution and the voluntary nature may encourage more high-risk enrollees to join, resulting in adverse selection and potential financial loss for the social insurance system. Moreover, the poorest individuals among the informal and self-employed workers may not be able to join even if enrolment is opened to them.
- *Subsidizing the social health insurance systems to help the poor pay premiums*. Some reforms aim at assisting the self-employed and informal sector workers to join the existing social health insurance schemes by helping them overcome financial obstacles. Government subsidies have been granted in Chile and the Costa Rica (Alamiro and Weber, 2002).
- *Implementing mandatory universal participation*. Some countries have passed laws requiring mandatory universal participation. Even so, successful cases include gradual expansion to the whole population in the Republic of Korea as well as in Taiwan, China, and to some extent Panama.

A few countries have innovative health financing (insurance) schemes that Kenya could adapt. Insurance schemes are important vehicles to pool resources as well as risks. Most health insurance schemes are, however, limited to certain health factors, and certain demographics. Innovative schemes should therefore be encouraged, borrowing from best practices, aimed at improving coverage.

These include: (i) introduction of private-public competition for mandated health insurance such as in Chile, Colombia and Estonia, giving individuals the option of choosing the State or a private insurer; (ii) private-public competition for the provision of publicly financed health services as in Chile and Argentina; and (iii) Given that Kenya is contemplating a payroll financed national health insurance, it could explore the feasibility of the innovative medical savings accounts systems developed by Singapore. Kenya, however, faces several limitations; for example, low levels of penetration of private insurance and involvement of a major section of the population working in the informal sector and hence difficult to obtain contributions. The key factors contributing to the low insurance penetration include costs and perceptions. Private health insurance schemes that encourage members through groups such as investment groups, community groupings and families could mitigate this challenge. Group coverage reduces administrative costs, mitigates adverse selection, and provides uniform premiums to the members of the group.

Health outcomes can be improved significantly not only by efficient financing but also by supportive and synergistic investments in related sectors such as sanitation. As an example, Chile which has a GNI per capita of PPP $13,440, scores well in terms of health indicators. Its infant and maternal mortality are among the lowest in Latin America. Average life expectancy in 2009 was 79 years, up from just over 60 years in the early 1970s. These achievements are attributed to investments in public goods such as education, child health control, sanitation, water and sewerage investments, among others (World Bank, 2008; WHO,2008;2011).

4.6 Conclusion and Recommendations

Health financing has increased since the implementation of devolved system of government. However, there are variations across counties and the proportionate share recommended by the AU is yet to be met. While health facilities bank revenue collected as required by the PFM Act of 2012, delays in disbursement of funds coupled with inefficiency and wastages constrain the implementation of the work plans. To achieve the health outcomes, there is need to provide for adequate resources both at national and county level. Increasing efficiency and reducing wastage will require strengthening public finance management, including building capacity of medical staff doubling up in financial functions at Levels 1 and 2. In addition, the National and County governments should ensure timely disbursement and or delivery of health commodities to facilities.

Social health insurance system should be prioritized in reducing the financing burden at household level. However, this needs to be complemented with

innovative financing options including private sector insurance. In this regard, it is important to support health financing initiatives with appropriate legislative frameworks such as making registration for social health insurance mandatory at an early stage in life, defining the health problems obliged to cover, and targeting safety nets including to those in the informal sector.

The PFM Act 2012 does not seem to adequately provide for the emergency nature of healthcare inputs. In particular, the financing of routine services and low-cost goods for health facilities may be improved by decentralizing procurement of these services/goods to facilities from the county level.

Chapter 5: Human Resources for Health

The Kenyan government has identified the achievement of universal healthcare (UHC) as essential in the realization of the Sustainable Development Goals and Kenya Vision 2030. Nevertheless, delivery of better health services and outcomes requires not only quality but also adequate and equitably distributed human resources for health (HRH). This chapter demonstrates that the challenges the 2014-2018 strategy set to overcome persist. These challenges included: inadequate and inequitably distributed workforce; as well as a non-conducive environment that attracts and retains health workers. The HRH is still inadequate, poorly distributed, experiences high turnover rates, and are under-supplied. Since the HRH challenges are interrelated and multi-sectoral, key interventions going forward would be to implement more holistic or comprehensive approaches encompassing policy, education/training, leadership, finance, partnership and better human resources management.

5.1 Demand and Supply of Health Workers

Demand for health workers has increased in Kenya owing to several factors, including the increasing size of the population and the increase in the incidence of non-communicable and other diseases. The rise in the population by at least a million more persons each year places more demands on health services. Added to the dynamic nature of service needs/requirement, it is inevitable that the number of skilled healthcare workforce will have to expand to keep pace with the population size and the utilization of healthcare services.

On the supply side, Kenya has significant shortfalls in its health workforce relative to cadre norms, and the distribution of the human resource is not balanced across counties. Shortfalls have been observable despite increase in registered medical personnel, which increased by an annual average of 8 per cent between 2013 and 2016. As indicated in Table 5.1, Kenya had 0.25 medical officers per 10,000 people compared to the WHO norm of 3.0 medical officers per 10,000 people. Overall, the shortage of general practitioners in 2015 was 3,801 while the respective shortfalls in clinical officers and nurses stood at 6,696 and 40,468 (Government of Kenya/ Ministry of Health, 2014c). There were about 14 health workers per 100,000 population at the community level, and 13.5 health workers per 100,000 people at the primary care level. County hospitals and national hospitals had 12,300 and 7,700 workers, respectively. The effects of these shortfalls are exacerbated by the fact that some medical personnel are/were in administrative positions.

Tab 5.1: Number of health staff by cadre and level of care relative to norms, 2012

	Comm-unity	Primary Care	County Hospital	National Hospital	Public	Faith-based	Total	Total per 10,000	Norms per 10,000 people*
Specialists (Medical/ Public Health)		1	149	327	477	251	728	0.18	
Medical Officers		55	342	206	603	402	1,005	0.25	3.0
Dentists		7	79	68	154	61	215	0.05	0.1
Dental Technologies		1	50	49	100	34	134	0.03	
Community Oral Health Officers		13	86	16	115	19	134	0.03	0.4
Clinical Officer (spec)		65	583	273	921	165	1,086	0.27	3.0
Clinical Officers (Gen)		332	770	144	1,246	389	1,635	0.41	3.7
BSN Nursing Officers	1	58	323	1,689	2,071	1,273	3,344	0.84	0.1
Registered Nurses	5	1,192	2,122	1,779	5,098	2,162	7,260	1.82	2.6
Enrolled Nurses	18	4,840	3,797	1,251	9,906	2,397	12,303	3.08	5.4
Public health Officers	149	930	384	83	1,546	172	1,718	0.43	1.0
Public Health Technicians	289	1,255	180	34	1,758	59	1,817	0.45	0.6
Pharmacists		27	170	80	277	52	329	0.08	0.2
Pharm. Technologist		49	154	108	311	194	505	0.13	0.7
Lab Technologist		292	567	380	1,239	407	1,646	0.41	0.3
Lap Technician		354	273	106	733	412	1,145	0.29	1.3
Orthopedic technologists		8	72	48	128	40	168	0.04	0.1
Nutritionists		106	217	130	453	110	563	0.14	0.5
Radiographers	1	29	194	153	377	97	474	0.12	0.2
Physiotherapists		55	268	189	512	111	623	0.16	0.4
Occupational therapists		20	149	110	279	52	331	0.08	0.2
Plaster technicians		10	112	70	192	28	220	0.06	0
Health record and information officers		110	164	135	409	91	500	0.13	0.9
Health record and information technicians		63	175	105	343	104	447	0.11	0
Trained community health workers	19,949	3,096	570	34	16,649	1,389	18,038	4.51	27.5
Social health workers	300	16	56	77	449	55	504	0.13	0.8
Community health extension workers	483	512	107	10	1,112	53	1,165	0.29	
Medical engineering technologist	12	10	113	67	202	37	239	0.06	0.1
Medical engineering technicians		49	135	51	235	21	256	0.06	0.2
Mortuary attendants					258		258	0.06	0.2
Patient attendants					1,902		1,902	0.48	1.8
Drivers					2,158		2,158	0.54	1.6

Clerks					671		671	0.17	2.0
Cleaners					511		511	0.13	2.7
Security					365		365	0.09	2.2
Accountants					271		271	0.07	0.9
Administrators					513		513	0.13	1.0
Cooks					535		535	0.13	1.5
Secretaries					1,796		1,796	0.45	0.8
Casuals					673		673	0.17	0.6
Total	**21,207**	**13,555**	**12,361**	**7,772**	**57,548**	**10,637**	**68,185**	**17.06**	

Source: Ministry of Health (2014c) for absolute numbers and (2014d) for the norms

The supply shortfall is attributed to various factors including: gross under-production of health workers, and natural attrition including retirement and migration of professionals. Other factors include the relatively high population growth rate and aging of the workforce. These factors have led the WHO to identify Kenya as one of the 57 human resources for health crisis countries based on the low health workforce to population ratio. Calculating projected supply of health workers can be complicated in an environment having inadequate health information. The estimation of supply requires information on active health workers, annual new graduates and immigration and emigration of health workers, and losses of active health workers. The established health information system should be regularly updated to enhance access to timely data and information to inform decisions.

Despite the impressive growth in figures for health workers in Kenya following devolution, the number of medical personnel per 100,000 of the population did not change substantially in the last three years. Kenya's health workforce gaps were more severe in the counties traversing the Arid and Semi-Arid Lands (ASALs). In addition, these areas had skills set and capacity constraints for their existing healthcare workforce. For the 10 ASAL counties covered, shortfalls across the six listed cadres based on WHO norms stood at 79 per cent. The greatest shortfall was with respect to 'Other (clinical)' (93%) and 'Doctors' (82%) (Table 5.2). The gender distribution of these counties' health staff also reflected the problem of exclusion that is largely explained by cultural factors. On average, 65 per cent of all staff were male, with the bias being greatest among laboratory technicians (91%), clinical officers (84%) and doctors (75%). At the national level, 2013 data shows that 59.8 per cent of all staff were female, even if their share of doctors was a modest 29.9 per cent (Kiambati et al., 2013).

Table 5.2: Staff in-post, establishment and vacancies in ASAL counties

Medical Officer	Clinical Officer			Nurses			Nurses			Laboratory staff			Pharmacy staff			Other (Clinical)			Total		
County	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Garissa	21	45	53%	80	118	32%	307	336	9%	24	47	49%	12	28	58%	130	1415	91%	574	1989	71%
Isiolo	5	10	52%	27	28	2%	194	78	-147%	17	11	-56%	8	7	-22%	65	330	80%	316	464	32%
Lamu	3	7	60%	27	20	-38%	102	56	-83%	15	8	-94%	8	5	-71%	49	234	79%	204	329	38%
Mandera	1	74	99%	31	195	84%	94	554	83%	11	77	86%	7	47	85%	44	2329	98%	188	3276	94%
Marsabit	8	21	62%	27	55	51%	190	157	-21%	18	22	17%	11	13	16%	80	659	88%	334	927	64%
Samburu	2	16	88%	22	43	48%	189	121	-56%	13	17	23%	7	10	31%	54	511	89%	287	718	60%
Tana River	2	17	88%	30	45	34%	128	129	1%	13	18	27%	6	11	45%	60	542	89%	239	763	69%
Turkana	7	62	89%	31	163	81%	179	463	61%	12	64	81%	10	39	74%	76	1,947	96%	315	2,737	88%
Wajir	5	48	90%	42	125	66%	151	357	58%	16	50	68%	8	30	73%	53	1,500	96%	275	2,109	87%
West Pokot	7	37	81%	44	98	55%	248	278	11%	31	39	20%	7	23	70%	84	1,170	93%	421	1,645	74%
Total	61	339	82%	361	989	59%	1,782	2,529	30%	170	351	52%	84	212	60%	695	1,063	93%	3,153	1,495	79%

Source: MONDKAL and Intra Health International (2012)

Notes: A–In-post; B–Establishment; C–Vacancies

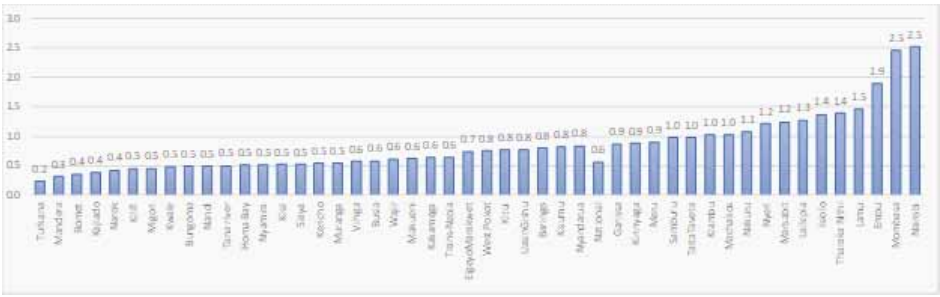
There were huge rural-urban disparities in the distribution of health workers in Kenya and in most counties. Generally, cities such as Nairobi were considered more desirable, especially for professionals who found rural living conditions more difficult. Rural areas were associated with less access to training opportunities and hence no advancement, inadequate social infrastructure, and less support. These and other factors have made it difficult to attract health workers to rural areas.

Further, most counties are yet to meet the national health human resource norm. Data presented in Figure 5.1 shows that in 2015/2016, only two counties met the norm on 3 health workers per 10,000 population. Perhaps, counties and the Ministry of Health need to either design new norms for distribution of health works and/or mainstream innovative modalities of distributing tasks among existing staff. However, the ratio improved from 0.25 per 10,000 population in 2012 to 0.6 per 10,000 in 2015/16. The improvement can be attributed to increase in employment and deployment of health workers by counties and national government during the devolution period.

These shortfalls are consistent with the survey findings that 74 per cent of heads of human resources across counties reported not to have adequate staff. It should be noted that although workforce gaps affected most cadres, there were some cadres with a zero-rating for staff needs (Ministry of Health, 2014).

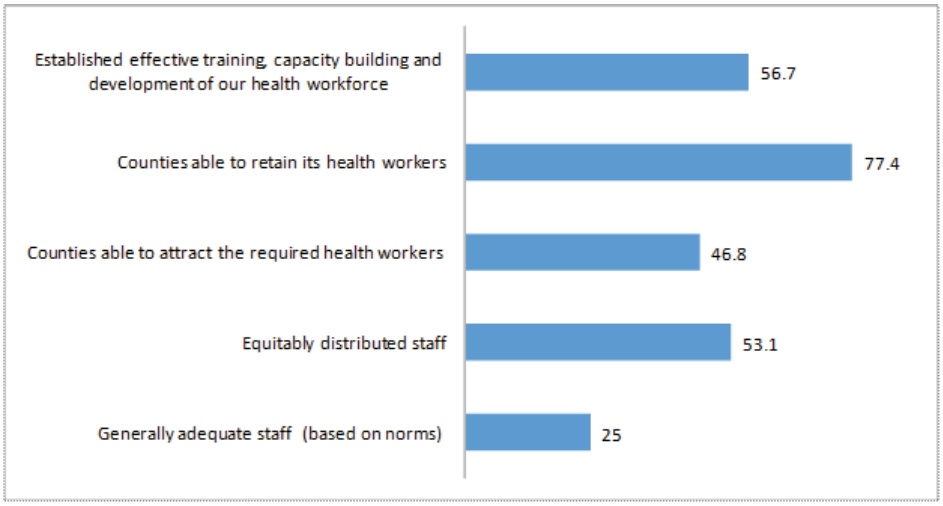
The survey findings indicated that most counties were experiencing an expansion of healthcare infrastructure without a concomitant increase in human resources. In addition, there were sophisticated equipment acquired/donated or procured but lacking human resources to operate them. According to data presented in Figure 5.2, only 25 per cent of the counties acknowledged that medical staff were generally adequate in health facilities. Distribution was also a challenge with only 53.1 per cent of counties indicating that staff were equitably distributed across facilities while less than 50 per cent could attract the required staff. There were also

Figure 5.1: Distribution of medical officers per 10,000 population by county, 2015/16



Source: Ministry of Health (2017)

Figure 5.2: State of human resources across counties (%)



Source: Health Assessment Survey (2017)

glaring gaps in effectiveness of training, capacity building and general workforce development. The above findings motivate the need for more healthcare human resources, and ensuring effective deployment and institutionalized training and capacity building programmes. However, any additional staff should be procured based on the needs of each county and/or health facility. In addition, investments in health, including in new infrastructure, should embrace a more holistic framework that considers availability of human resources for health.

5.2 Management of Health Workers and Collective Bargaining Agreement Issues

In addition to the health workforce deficiencies across cadres, Kenya's health sector has experienced recurrent unrest among its health workers. The incessant unrests have been blamed on numerous factors, including unfavourable employment conditions and dissatisfaction with remuneration. A major explanation of the ongoing unrest is aptly captured in the respective Collective Bargaining Agreements (CBAs) of different cadres of health workers.

With respect to working conditions, the issues brought out by the respective CBAs include: inadequate medical equipment; housing challenges; insufficient safety and security; lack of or inadequate basic conveniences at the workplaces such as call rooms, doctors' room and furniture; and lack of or inadequate means of communication. There was also the perennial challenge of understaffing of both

professional and support staff which has led to long working hours, fatigue, and a demotivated staff. As an example, the country had an average of 2.5 medical officers compared to the WHO norm of 3 in 2013. The other cadres too had serious deficiencies, resulting in overworking and burnout. The doctors and nurses were also dissatisfied with, among others: employee classification into job groups, especially the entry level; mismanaged promotions and transfers; and inadequate continuous professional development opportunities such as is provided by training sponsorship and research funds.

With respect to pay-related grievances, besides remuneration, medical workers had isolated the benefit package as a key challenge. Some of the benefits agitated for include retirement benefits/service gratuity, health insurance, house mortgage and car loan. Since the unrest caused by remuneration has affected not only medical workers but also lecturers, teachers and other public-sector employees, there is need for a public sector-wide approach to solving the challenge. One of the challenges that has to be overcome is the free bargaining regime for wages in the public sector that is not informed by productivity growth and the cost of living compensation. This follows the relaxation of wage guidelines back in the 1990s, which has contributed to creation of wage distortions within and across sectors over time.

The sector is also affected by pay differentials and misaligned pay structures. The allowances of doctors and nurses are not aligned to those of other medical staff such as clinicians. This is a result of the fragmented nature of negotiated CBAs between various categories of medical staff. As an example, in recent years, both doctors and nurses have bargained their CBAs resulting in relatively higher pay for these staff relative to clinicians. There are indications that this may affect the morale and productivity of the staff excluded from the CBAs., and its also likely to ignite additional worker unrests within the medical workforce. If these differentials are not based on heterogeneous nature of jobs and workers, they are likely to impede labour mobility. There is also an emerging trend by counties to employ casual or contractual healthcare workers without clear remuneration schemes. This is likely to lead to negative impacts on service delivery.

The wage determination process also needs to be improved. The evident challenges include existence of conflict of interest in industrial relations across sectors, political factors, and disjointed/separate wage negotiation regimes. With respect to existence of conflict of interest, the set up is such that increase in pay of unionized workers provides a justification for increasing management pay. The wage determination process is also affected by political cycles which have crept in to influence wage determination processes. A classic example was the 200 per cent salary increase awarded to teachers in the late 1990s. This, among other factors,

may have triggered a negative precedent on agitation for higher wages more so prior to general elections. Wage determination is also disjointed by the separate negotiation regimes. On the one hand, Medical Practitioners, Pharmacists, and Dentists have their own CBA while Nurses have another. The pay negotiation structure is complicated further by exclusion of some cadres (such as the Clinical Officers) in these negotiation schemes. This has been a key issue resulting in pay differentials and balkanization across cadres, and one that has fueled recurrent pay grievances of health workers.

CBAs were initially negotiated between the government (employer) and the unions. The devolved system has introduced intricacies in the CBA negotiation process by increasing the number and diversity of actors (particularly the county governments). In this respect, there are a couple of notable developments that have mitigated the complexities resulting from devolution. The first is the creation of the Council of Governors (CoG) which, though not institutionalized, has eased the tripartite negotiation processes between workers' unions and the governments who double up as the employers. The second is the establishment of the Kenya Health Human Resource Advisory Council created by the Health Act 2017 which will have overarching roles, including transfer of healthcare professionals across levels of government, establishing schemes of service, and maintenance of a master register of all health practitioners.

Box 5.1: Chronology of Industrial Actions (Strikes) by Health Workers in the Recent Past

1994 – Doctors went on strike for 105 days agitating for, among other things, registration of their union.

2011 – Doctors and Nurses went on strike for a few days in December 2011 following the creation of their new union.

2013 – In June, Nurses at the national refererral hospital went on strike for 2 days over non-implementation of salary increment.

2013 to present: There have been more than two dozen strikes since the devolution of health services in 2013. One of the most severe was a 100 day strike by Doctors that began at the end of 2016 and ended in March 2017. Nurses too had a 5 month strike between June and November 2017 over non-implementation of their CBA.

Although a number of proposals have been provided to overcome or mitigate the challenge associated with unrest of medical workers, the unrests may persist since the remedies are overly focused on the sectoral rather than macroeconomic approach to wage determination. One of the proposals is to delegate the management of health workers to an Authority or Commission, like in other professions such as that for teachers, or institutionalize an intergovernmental agreement by National and County Governments on management and deployment of human resources for health. The Health Act 2017 proposes to create the Kenya Health Professions Oversight Authority. Nevertheless, it is noteworthy that pay grievances among teachers persist even with a Teachers Service Commission (TSC). A path that holds a lot of promise is to broaden and strengthen a consolidated public-sector approach to wage determination. There should be a focus on not only on the core civil service but also other public-sector employees including teachers, medical workers, state officers and state corporations.

Industrial unrests are also the result of inadequate mechanisms to deal with disputes. In addition, there seems to be no clear encompassing framework to regulate strikes by personnel who are engaged in essential services such as health workers. A common practice in other countries is that essential services are prevented from complete disruption of service delivery by an overarching regulatory framework.

5.3 Promotions and Training

The ability to attract health workers is important for service delivery and is partly dependent on career progression/promotion prospects. Lifelong training for medical staff is important in ensuring that the workforce remains competitive and conversant with new developments and trends. Training prospects also enhance the value of a job to an individual.

Challenges related to promotion were identified as one of the grievance issues by medical workers in their CBAs. Specific gaps relate to late promotions after due period, stringent requirements (such as training), lac of fairness, and the limited number of posts especially at the top cadres. In addition to these challenges, most counties did not have a clear career progression path for health workers. On a wider scale, this was reflective of the capacity-related challenges in the human resource management function, resulting in lack of promotions of medical staff, disgruntlement and continued unrests.

Although training is a critical component of career development and progression, it faces several challenges. For example, the healthcare staff workforces were mostly constrained by time and were not able to take up training sessions. In most cases,

only short training sessions (about 1 to 5 days) could be taken up. Longer training courses were usually forfeited or deferred. Since not all training opportunities could be taken up, there was tendency to limit staff development and promotion. This implies the need to reorient the training for health workers to factor in staff shortages and limited staff time. There was also little incentive for employers of health workers to train their workforce because health human resources are highly mobile and employers who trained their staff risked not benefiting from their services after the trainings. This has led to limited rollout of ambitious training programmes for healthcare staff within the counties. The challenges can be overcome by a number of interventions, including use of "bonding" of trained medical staff to ensure a minimum service period after training that is sponsored by the employer.

Even though short training courses mainly in the form of in-service training, is commonly implemented within counties, most sessions are sensitization or refresher sessions with little prospects of sustainability. Most sessions are organized and funded by donors/partners. This arrangement pegs the sustainability of the training of the health workforce on continued donor commitment and support. In addition, it risks swaying the training content to the whims of the donor(s) rather than the most pressing training needs of the trainees and the healthcare system in general. A possible remedy for this is to enhance the budget allocated to training and capacity development of the health workforce and reduce dependency on donors/partners. The Ministry of Health can also peg promotion on achievement of specific training modules identified by the ministry and its stakeholders – akin to other public sector employees.

5.4 Retention of Health Workers

Staff retention is still a major challenge facing the health sector in Kenya. Nurses in particular are not only difficult to retain but also complex to replace upon their exit. Of the staff recruited between 2005 and 2009, an average 61 per cent had left the service. The highest rates of exit was among the enrolled nurses (82% of recruited nurses) and medical officers (58%) (Kiambati et al., 2013). This is a result of relatively high demand for nurses across the globe and their relatively higher remuneration (and better working conditions) in other countries, resulting in brain drain from the developing to the developed world.

Another form of health workers retention problem was the movement of health workers to more conducive counties or towns, resulting in poor distribution of critical health workforce within the country. Counties considered to be less conducive face a challenge in attracting health workers. This may justify the use

of differentiated incentives across counties given the prevailing health workforce attraction challenges. Besides the inequitable distribution, the overall shortage of nurses in the public sector countrywide is complicated by varying workforce characteristics (for example, age profile) across counties. As an example, some counties had larger proportions of aged medical staff, implying the need to put in place efficient human resources information systems to ameliorate the challenge.

Some of the causes of the domestic migration/exits include those outlined in Box 5.2. The section on recommendations offers highlights of what can be done to ameliorate the negative effects of these factors.

Box 5.2: Reasons for Poor Retention of the Health Workforce

These reasons affected nearly all counties but in varying degrees and include:

(i) Un-conducive health infrastructural facilities leading to congestion and poor work environments.

(ii) Inadequate staff especially in rural facilities leading to over-burdened staff.

(iii) Lack of staff houses or inadequate staff housing and where provided, housing is dilapidated.

(iv) Lack of basic amenities within medical facilities such as water and electricity and inadequate support infrastructure (such as reliable transport) in the surrounding community.

(v) Inadequate training opportunities or lack of equal training opportunities and sometimes delayed communication of training opportunities. In addition, there is a physical barrier to access of training.

(vi) Delayed salaries and misaligned pay structures.

(vii) Lack of clear progression/promotion structures, worsened by the devolved structure.

Source: Health Assessment Survey (2017)

Although there have been efforts to establish a real time human resource information system for health workers, Kenya healthcare human resources demand and supply data is still difficult to retrieve and to use for human resources management. This is partly because the human resources data is not frequently updated by the respective agencies, including the regulatory boards. This has made it difficult to ascertain the workforce dynamics such as: workers in employment and workers that have migrated. It is also difficult to ascertain individuals trained outside the country and those lost through death and retirement.

5.5 Conclusion and Recommendations

This sub-section provides proposals based on interactions with stakeholders in the health sector and on experiences from other countries.

In improving the general working conditions, rechanneling healthcare resources to rehabilitating and upgrading existing health facilities would be more effective relative to constructing new facilities. This is more so the case since most counties in Kenya have adequate health facilities. Nevertheless, these facilities require to be revamped and better equipped to incentivize the working environment. There is need for a mass upgrade of dilapidated facilities, workspaces and medical equipment. Some facilities will require the completion of stalled or ongoing construction of premises. Besides the physical aspects of employment conditions, it will also be necessary to: create/implement policies that enhance career progression, improve social amenities at the counties, and encourage health workers to stay near healthcare facilities especially in rural/marginalized areas.

A number of interventions can be used to overcome the challenges related to training of health workers. These include: the need to collaboratively execute a comprehensive training needs assessment by the county and national governments; allocate adequate budgetary resources for training to limit dependence on partners and donors; and embrace technology to overcome the physical barrier to training. This can be achieved through: online training platforms, which may in turn require additional investments in internet-related infrastructure; implementation of mobile training units; and expansion of the ongoing residence-based training initiatives.

Concerning the incessant worker unrests, the interventions should pay keen focus on the challenges identified in the Kenya HRH strategy 2014-2018, and the negotiated CBAs. Some of the important interventions will include: the need to align salaries and remuneration of the entire health workforce during CBA negotiations and to ensure that negotiated CBAs do not distort the aggregate pay structure. In addition, the governments need to pursue modalities to meet commitments

agreed with the various health workers' trade unions. This will improve the CBA negotiation process and stem any potential worker unrests. Support by all public sector agencies of the ongoing efforts by the government to streamline wages and remunerations in the public sector would help harmonize remuneration packages and remove any discontents in the service. MDAs should be sensitized on the constitutional provision that requires that all collective agreements regarding unionizable public officers in relation to settling, determination and reviewing of their salaries are subject to the advice and recommendations of a constitutional commission.

It is important to strengthen the human resource planning and management practices, provide for better working conditions, and promote integrated planning. The issue of better working conditions has been recurrent in all the negotiated CBAs. This can be achieved by enhancing healthcare resources to rehabilitating and upgrading existing health facilities rather than constructing new facilities.

The challenges related to distribution of the health workforce affect other jurisdictions and have been managed using several interventions that Kenya can learn from. These interventions include:

(i) Improving incentives for rural service practitioners – including arid and semi-arid areas. These are usually in the form of higher pay or more rapid salary advancement for those serving in rural areas. Preferential selection for training has also been used to make rural service more attractive.

(ii) Improving the work environment and employment conditions through initiatives such as: provision of adequate housing, transport, continuing education, regular communication with higher level facilities, an education allowance for children, and increased vacation leave. In Turkana County, for example, its three (3) dentists work on a rotational basis of 4 out of 12 months in a year.

(iii) Mandatory rural internship as a prerequisite to full licensure.

(iv) Requirement of prior community service as a prerequisite for public sector employment.

(v) Continue using paramedics, including medical assistants, nurse practitioners, midwives, dental nurses, community health workers, among others.

vi) Preferential recruitment of applicants with rural backgrounds.

vii) Production/training of more health workforce based on assessment of needs.

viii) Ensure that all unengaged doctors are deployed to health facilities immediately after graduation while supporting efficient management of human resource for health data base at County and National levels.

Chapter 6: Health Infrastructure

The country experienced an expansion and improvement in health infrastructure across counties during the period under review, which saw the average density of facilities improve considerably. However, significant infrastructure gaps exist in some counties. That the average number of beds remained unchanged could mean that most of the expansion was on the lower level facilities without inpatient services. There was enhanced provision of specialized services such as digital x-ray; renal and Ear, Nose and Throat (ENT) services; digital mammography; ultrasound; and intensive care services under the Managed Equipment Services (MES) programme. However, there was a weak balance between level of health infrastructure development and provision of recurrent inputs such as human resources. Key interventions towards improving health infrastructure include developing a comprehensive health physical infrastructure framework focusing on upgrading physical infrastructure in existing facilities, investing in preventive maintenance, repair of existing and leased medical equipment, and improving the work environment for medical staff. Other amenities that require improvement include access to water, sanitation and electricity.

6.1 Overview

Health infrastructure is fundamental to the provision and execution of health services. Health infrastructure allows for and supports the key goals of health, including creation of environments that promote quality health service delivery. There are requirements for physical facilities in establishing equitable capacity to deliver defined health services based on population and the level of care. Further, various healthcare norms relating to critical physical infrastructure inputs have been identified by WHO aimed to efficiently, effectively and sustainably offer the healthcare service delivery package. Physical infrastructure norms outline the number of physical facilities required for equitable capacity to deliver the defined health services. As an example, the WHO recommends 15 health centres per 30,000 people and 45 dispensaries per 10,000 people. In addition, the national norms require each person to live within 5 km radius of a health facility to ensure access to basic health services. Further, utilization of health services is influenced by various factors, namely: absolute access to services which is determined by the distance travelled or cost incurred to reach the service facility; relative access to services determined by the crowding and waiting time at the service delivery

point; and availability of specialist medical inputs. This chapter focuses on health infrastructure, challenges and areas for intervention.

6.2 Access to Health Facilities

The study sort to establish the distance and time taken to reach the nearest health facility in all counties in Kenya. It is expected that each person lives within 5 kilometres (km) radius of a health facility, primarily to ensure timely access to basic health services. The national average of the nearest health facility in the country was estimated at 3 kilometres and average time of one hour. Across the counties, the distance ranged between a low of 1.4 kilometres and a high of 52.6 kilometres while the time taken ranged between 13.3 minutes and 93.3 minutes as shown in Table 6.1. Over 50 per cent of the counties had average distances higher than the national average, while 27 per cent were above the expected norm. The distance that individuals cover to access a health facility can be a deterring factor to uptake of health services.

Table 6.1: Distance and time taken to nearest health facility by county

County	Distance (km)	Time taken (minutes)	County	Distance (KM)	Time taken (minutes)
Nairobi	2.0	26.9	Migori	6.6	42.5
Nyandarua	2.9	23.7	Homa Bay	4.0	41.3
Nyeri	2.1	17.4	Kisii	2.6	20.4
Kirinyaga	1.4	13.3	Nyamira	2.7	23.7
Murang'a	3.0	22.8	Turkana	9.1	66.8
Kiambu	4.1	30.9	West Pokot	1.5	16.9
Mombasa	1.6	14.0	Samburu	2.9	35.7
Kwale	2.9	25.5	Trans Nzoia	4.3	20.6
Kilifi	4.1	18.2	Baringo	2.9	46.0
Tana River	3.6	43.9	Uasin Gishu	3.3	15.4
Lamu	3.4	22.2	Elgeyo Marakwet	17.0	14.6
TaitaTaveta	2.5	19.2	Nandi	19.7	18.4
Marsabit	2.1	26.0	Laikipia	8.5	93.3
Isiolo	7.0	34.8	Nakuru	6.7	21.8
Meru	5.6	33.0	Narok	34.2	49.8
Tharaka Nithi	4.9	29.8	Kajiado	4.3	33.1
Embu	3.6	24.5	Kericho	2.3	25.2
Kitui	9.7	39.0	Bomet	2.4	14.9

Machakos	3.6	20.6	Kakamega	3.2	21.0
Makueni	3.6	39.5	Vihiga	3.0	33.1
Garissa	35.3	60.9	Bungoma	3.9	20.8
Wajir	41.0	70.6	Busia	1.4	17.0
Mandera	52.6	90.4	National	3.0	60.0
Siaya	2.8	21.3	Minimum	1.4	13.3
Kisumu	3.7	21.6	Maximum	52.6	93.3

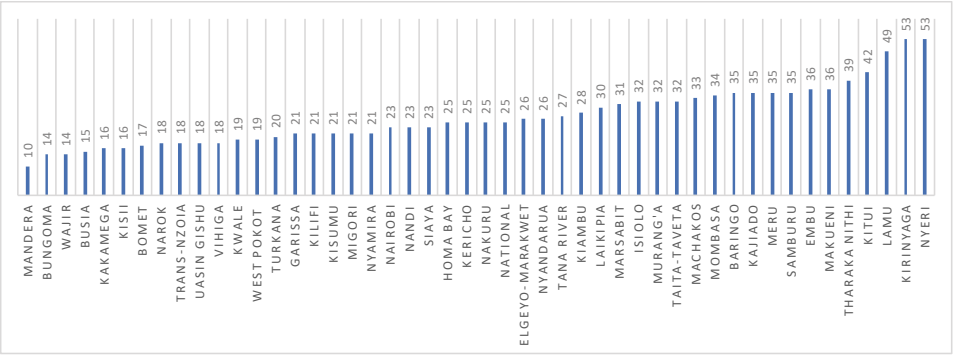
Source: Health Assessment Survey (2017)

6.3 Density of Health Facilities

The healthcare infrastructure has seen expansion and improvement with an increase in the number of health facilities from 8,616 facilities before devolution in 2013 to 11,324 in 2017. This has increased the national average facility density from 19 to 24 health facilities per 100,000 populations (Figure 6.1 and Table 6.2) (Ministry of Health, 2017). About 80 per cent of the facilities are at Level 2 (dispensaries) and 3 (health centres), which are focused on primary healthcare while the other levels constitute 20 per cent of the facilities. These include Levels 4 and 5 which comprise secondary health facilities and provide specialized services, and Level 6 facilities which are highly-specialized tertiary hospitals (referral hospitals) and provide healthcare, teaching, training and research services.

On average, in the last four years, the density of health facilities was 22 health facilities per 100,000 population. Generally, the country had inadequate infrastructure especially in ASALs, leading to limited access, and in other areas congestion in existing health facilities. Limited facilities translate to fewer

Figure 6.1: Number of facilities per 100,000 population (density)



Source: Ministry of Health (2017)

inpatient beds per population served; it also implies inadequate medical service provision.

The distribution of health facilities by county before and after devolution is shown in Table 6.2. Overall, there was an increase in the number of health facilities with devolution as counties expanded the number of health facilities to increase access and utilization by the public.

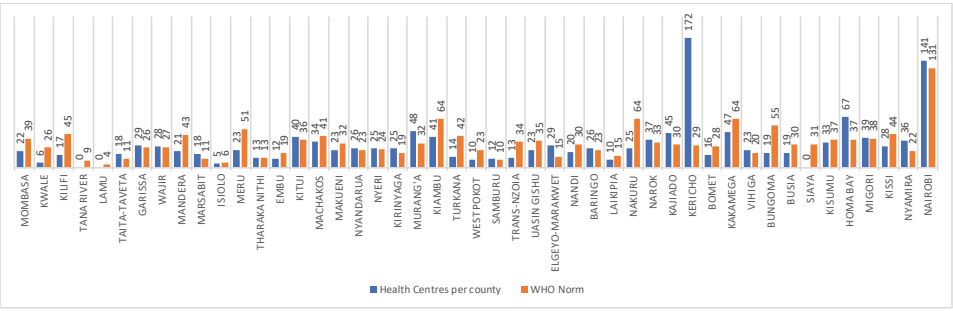
Table 6.2: Distribution of health facilities by county, 2013-2017

County	Number of health Facilities in 2013	Number of health Facilities in 2018	Percent Increase in Facilities	County	Number of health facilities in 2013	Number of health Facilities in 2018	Percent Increase in Facilities
Kenya	8,616	11,324	23.9	Mandera	79	134	41.0
Baringo	188	233	19.3	Marsabit	87	105	17.1
Bomet	118	147	19.7	Meru	393	542	27.5
Bungoma	146	233	37.3	Migori	185	239	22.6
Busia	81	130	37.7	Mombasa	290	393	26.2
Elgeyo Marakwet	121	113	-7.1	Murang'a	307	303	-1.3
Embu	139	202	31.2	Nairobi	653	905	27.8
Garissa	119	163	26.9	Nakuru	339	488	30.5
Homa Bay	215	280	23.2	Nandi	175	210	16.6
Isiolo	47	57	17.5	Narok	153	179	14.5
Kajiado	238	316	24.7	Nyamira	133	143	6.9
Kakamega	249	306	18.6	Nyandarua	122	181	32.6
Kericho	176	219	19.6	Nyeri	411	370	-11.1
Kiambu	418	526	20.5	Samburu	73	102	28.4
Kilifi	237	283	16.3	Siaya	165	211	21.8
Kirinyaga	244	308	20.8	Taita Taveta	79	105	24.7
Kisii	157	210	25.2	Tana River	64	77	16.8
Kisumu	166	230	27.8	Tharaka Nithi	104	152	31.6
Kitui	305	454	32.8	Trans Nzoia	98	184	46.7
Kwale	99	147	32.6	Turkana	145	245	40.8
Laikipia	103	136	24.3	Uasin Gishu	177	193	8.3
Lamu	44	61	27.8	Vihiga	81	105	22.8
Machakos	301	409	26.4	Wajir	112	114	1.7
Makueni	188	346	45.6	West Pokot	92	135	31.8

Source: Government of Kenya/Ministry of Health (2014a, 2018)

Overall, the survey found that most counties do not meet the WHO recommendation for health centres. Only seven counties surpass the norm, and another seven (7) counties had not met more than 50 per cent and the rest are far below the norm. The under-performance can be attributed to the low investment that existed in infrastructure development in under-served areas over a long period before

Figure 6.2: Number of health centres against WHO norms



Source: Author's computations

devolution. However, during the first four years of devolution, counties have increased health infrastructure development, hence improved access (Figure 6.2).

Another related indicator is availability of beds and cots, which captures capacity of facilities to offer care and specialized long-term treatment under close support by health professionals. Table 6.3 presents data on hospital beds per 10,000 population, which ranges between a high of 39 to a low of 7 number of beds per population density. The number of beds have remained constant over time, implying that the expansion in health facilities was mostly on the lower levels of the health system where there are no inpatient facilities.

Table 6.3: Provision of admission facilities (beds and cots per 10,000 population)

	County	Beds and Cots per, 10,000 (2012)	Beds and Cots per, 10,000 (2014)	Beds and Cots per, 10,000 (2017)		County	Beds and Cots per, 10,000 (2012)	Beds and Cots per, 10,000 (2014)	Beds and Cots per, 10,000 (2017)		County	Beds and Cots per, 10,000 (2012)	Beds and Cots per, 10,000 (2014)	Beds and Cots per, 10,000 (2017)
1	Baringo	11.0	11.7	10.6	17	Kisumu	21.0	21.9	23.5	33	Narok	10.7	11.9	11.2
2	Bomet	10.6	11.6	10.3	18	Kitui	13.0	12.6	13.4	34	Nyamira	14.9	14.7	14.0
3	Bungoma	8.4	6.9	11.5	19	Kwale	5.7	6.3	5.8	35	Nyandarua	9.4	9.5	9.9
4	Busia	13.6	20.9	14.7	20	Laikipia	15.2	17.1	15.3	36	Nyeri	21.7	22.2	22.4
5	ElgeyoMarakwet	16.5	20.2	15.6	21	Lamu	14.0	15.7	13.2	37	Samburu	20.0	22.6	21.7
6	Embu	25.1	24.3	26.3	22	Machakos	18.7	17.9	19.2	38	Siaya	10.0	9.2	10.8
7	Garissa	20.3	12.5	16.8	23	Makueni	13.3	12.9	16.1	39	TaitaTaveta	12.2	13.8	12.5
8	HomaBay	15.9	15.7	15.8	24	Mandera	7.4	4.3	11.9	40	Tana river	8.6	9.7	10.9
9	Isiolo	41.7	42.3	39.2	25	Marsabit	19.3	18.7	19.4	41	Tharaka Nithi	22.0	21.3	21.0
10	Kajiado	16.8	18.2	15.8	26	Meru	13.3	12.9	15.6	42	Trans-Nzoia	6.9	7.8	7.9
11	Kakamega	12.0	11.7	12.1	27	Migori	19.8	20.0	19.6	43	Turkana	9.1	9.2	6.0
12	Kericho	13.5	13.8	13.8	28	Mombasa	14.6	16.4	14.6	44	UasinGishu	13.7	15.4	14.2
13	Kiambu	17.7	18.2	18.7	29	Muranga	7.7	7.9	8.2	45	Vihiga	13.0	13.5	13.5
14	Kilifi	7.1	8.0	6.9	30	Nairobi	19.0	23.5	18.1	46	Wajir	11.7	7.2	8.7
15	Kirinyaga	16.0	14.6	17.3	31	Nakuru	14.4	16.1	15.7	47	West Pokot	7.5	8.4	7.5
16	Kisii	19.6	20.4	17.9	32	Nandi	6.7	8.0	7.5	48	Kenya	14.5	14.8	14.6

Source: Ministry of Health Health Management Information System (2017)

6.4 Provision of Health Equipment

The country recorded an improvement in the provision of specialized equipment in health facilities across counties (Box 6.1). The investments have enabled counties to upgrade their facilities while improving access to specialized services such as renal, ICU and ENT, among other services at sub-national level. The managed equipment services (MES) project contributed to equipping 94 county public facilities and 4 national referral hospitals with modern diagnostic treatment equipment, including digital x-ray systems, digital mammography units, digital ultrasound units, digital sterilized equipment, ICU/HDU and neurosurgery centre, digital anesthetic machines and MRI machines distributed strategically across the counties. In the urban informal settlements, the programme helped upgrade 11

Box 6.1: Health Infrastructure Investment Programmes by the National Government

During the period 2013-2017, the Government invested in the following infrastructure development projects:

(i) Construction and equipping of a maternity block at Likoni Sub-County

(ii) Construction of a 30 bed maternity ward and theater at Ngong County Hospital

(iii) Equipped 40 hospitals under Managed Equipment Services project

(iv) Constructed 98 classrooms for the Medical Training College (MTC)

(v) Construction of Central Radioactive Waste Processing Facility (CRWPF)

(vi) Upgrading of the health facilities in the slum areas

(vii) Initiation of the construction of the East Africa's Centre of Excellence for Skills and Tertiary Education

(viii) Proposed construction of the burns unit at the Kenyatta National Hospital

(ix) Construction of the Neuro-Surgery Centre at the Moi Teaching and Referral Hospital

(x) The Managed Equipment Service (MES) programme that upgraded 98 public hospitals, 2 in each of the 47 Counties and 4 national hospitals with a view to improving access to specialized services across the country

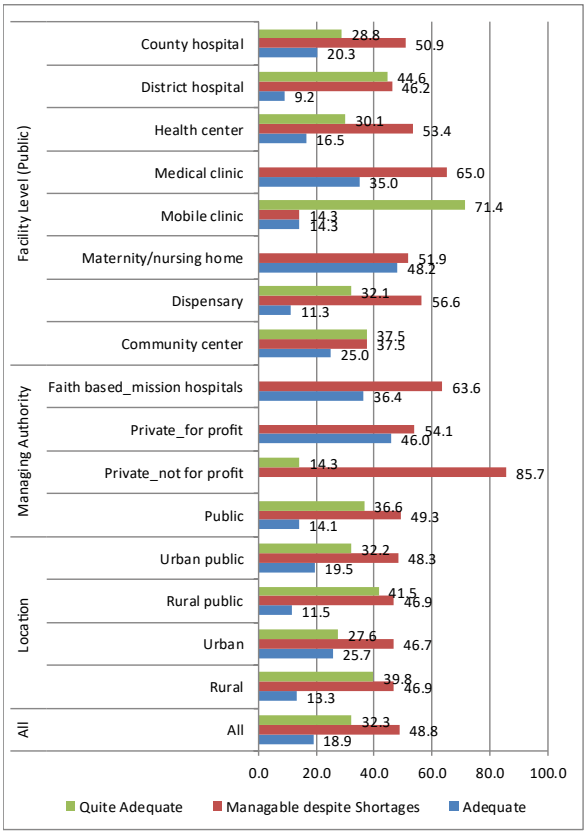
(xi) Moi Teaching and Referral Hospital (MTRH) constructed a cancer management centre, cardiac care and Shoe4Africa children hospital.

Source: Ministry of Health, Health Management Information System

selected mobile facilities. However, areas that will need improvement for effective operation of these infrastructure include ensuring training of adequate number of staff to operate the facilities, and allocation of adequate resources for regular maintenance of the infrastructure.

The study established that infrastructure adequacy in the health system is manageable, though there were shortages. Only mobile clinics reported the highest proportion of having quite adequate infrastructure as shown in Figure 6.2. County referral hospitals across the country were in the process of upgrading their infrastructure to be able to provide better healthcare services. Notable upgrade in facilities was in the renal units, ICU units and the increased construction of dispensaries in counties to increase access to primary healthcare in counties. This was being done under the managed equipment for health project being undertaken by the National government since 2013.

Figure 6.3: Adequacy of basic infrastructure in health facilities



Source: Health Assessment Survey (2017)

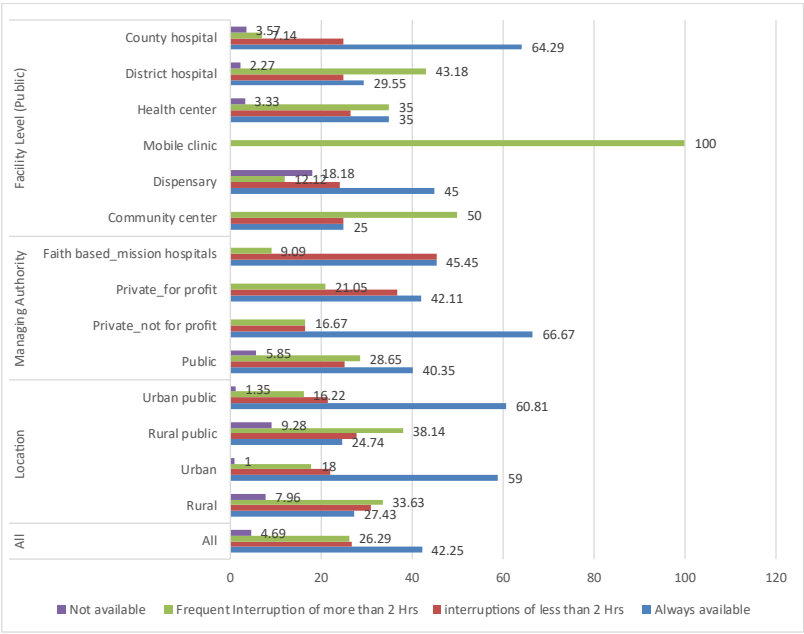
NB: Zero (0) means that the category was not represented in our sample

6.5 Role of Energy Services in the Health Sector

Supply of energy is essential in the provision of health services, given that there are certain appliances providing a range of services in health facilities that cannot be operated without power. These include medical refrigerators, sterilizers, lamps, cookers, suction machines for deliveries, incubators, microscopes, centrifuges, mixers, X-ray viewers, among others. Besides, facilities especially in rural areas are limited in their ability to deliver quality healthcare services partly due to lack of appropriate, affordable and accessible energy services.

Supply to electricity also improves the service delivery capacity of health facilities by both increasing the number of service delivery hours and widening the scope of services that can be offered. Yet, data shows that 7.11 per cent of the facilities did not have any source of power supply despite the survey considering alternative sources of power. Overall, private (for profit) facilities were better supplied with electricity connection than public facilities. Among all rural facilities, 12.5 per cent had no power compared to one per cent for urban facilities. Among the facility types, 73.5 per cent of the dispensaries had access to power supply compared to 95.0 per cent of health centres. Of the power supply options, the use of power connected to the national grid was the most common while few health facilities reported to be using generators and solar as the primary source of electricity.

Figure 6.4: Power supply availability in health facilities (%)



Source: Health Assessment Survey (2017)

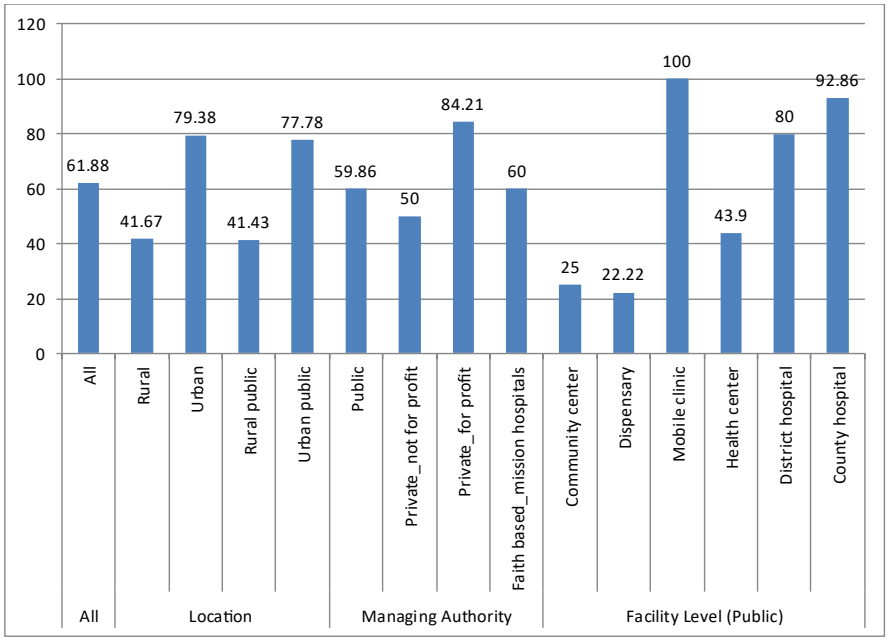
About forty-two (42) per cent reported that power was always available while 26.3 per cent reported frequent interruptions of more than two hours.

Health facility backup electricity generators help ensure round the clock operations for extremely critical applications in hospitals. Without alternative sources of power in place to serve as a reliable backup system, the lives of patients and overall operations of facilities may be affected, and in a worst-case scenario loss of life could occur. From the Intensive Care Unit (ICU) to the operating room, hospitals should be self-sufficient in case of power outages. For this reason, backup power generators are critical. Only 80 per cent of district hospitals had generators, which was way below the county referral hospitals (92.86%). Only 61.88 per cent of health facilities reported to have a backup generator. Private health facilities (84.21%) reported to have backup generators compared with 59.86 per cent of public health facilities as shown in Figure 6.5.

6.6 Water, Sanitation and Hygiene in Health Facilities

Adequate Water, Sanitation and Hygiene (WASH) are essential components for the provision of basic health services. However, with limited funding, many healthcare facilities are not able to provide adequate WASH services. This then

Figure 6.5: Health facilities with a backup electric generator (%)



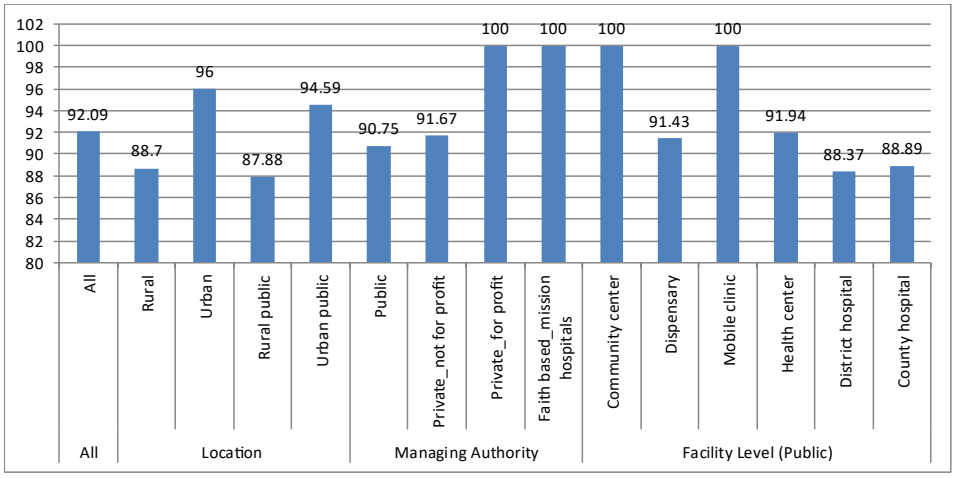
Source: Health Assessment Survey (2017)

compromises the ability to provide safe quality water and therefore presents a serious health risk to those seeking treatment. WASH services provide for water availability and quality, presence of sanitation facilities, and availability of soap for hand washing. The availability of WASH in healthcare facilities serves to prevent infections and spread of disease, protect health workers and patients, and upholds the dignity of vulnerable populations, including pregnant women and the disabled.

The consequences of poor WASH services in health facilities includes developing infections and exposure to unconducive environment while in hospital. Healthcare associated infections affect hundreds of millions of patients every year, with 15 per cent of patients estimated to develop one or more infections during hospital stay (Allegranzi et al., 2011). The burden of infections is especially high in newborns. Sepsis and other severe infections are major killers estimated to cause 430,000 deaths annually. The risks associated with sepsis are 34 times greater in low resource settings (Oza et al., 2015). Lack of access to water and sanitation in healthcare facilities may discourage women from giving birth in these facilities or cause delay in care seeking (Velleman et al., 2015). Conversely, improving WASH conditions can help establish trust in health services and encourage mothers to seek prenatal care and deliver in facilities rather than at home - an important element of the strategy to reduce maternal mortality (Russo et al., 2012).

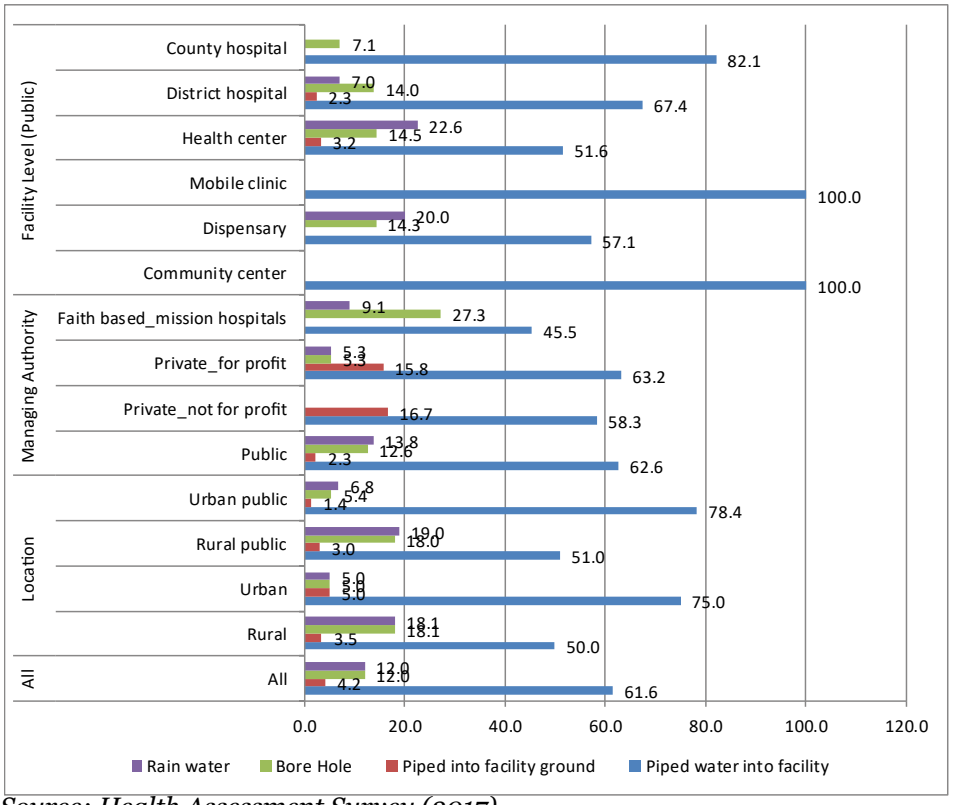
A significant proportion (92.09%) of health facilities reported to have access to safe water. More urban facilities (96%) had access to safe water compared to 88.7 per cent of facilities in rural areas. Interestingly, more health centres in the country

Figure 6.6: Facilities with access to safe water (%)



Source: Health Assessment Survey (2017)

Figure 6.7: Sources of water in health facilities (%)



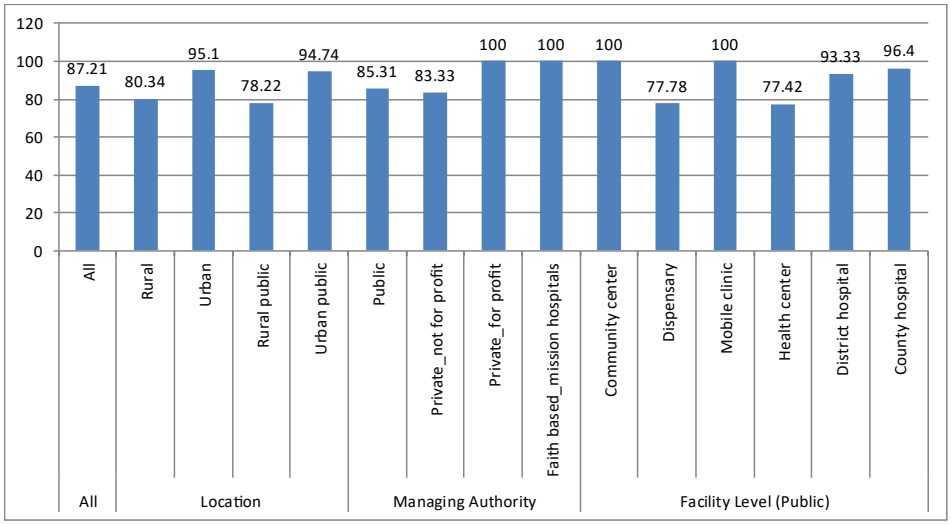
Source: Health Assessment Survey (2017)

had access to safe water compared to District and County Hospitals reporting 91.94 per cent, 88.37 per cent and 88.89 per cent, respectively, as shown in Figure 6.6.

The main water source across most facilities was piped water into the facility (61.6 %) and borehole and rain water at 12.0 per cent each (Figure 6.6). Assuming that the piped water was treated, the foregoing data suggests that health facilities might have largely been drawing water from other sources whose quality could not be guaranteed. This clean water risk was higher among rural, government owned facilities, in contrast to urban, non-government owned facilities where over 78.4 per cent of the facilities had piped water. Across the facility types, the comparatively higher hospital access rate to piped water – 82.1 per cent compared to the dispensaries' (57.1%) confirm the urban bias evident in other facets of health care delivery.

Clean running water in a health facility is essential to contain sanitary conditions and control of diseases. Clean water in hospitals is also important in performing

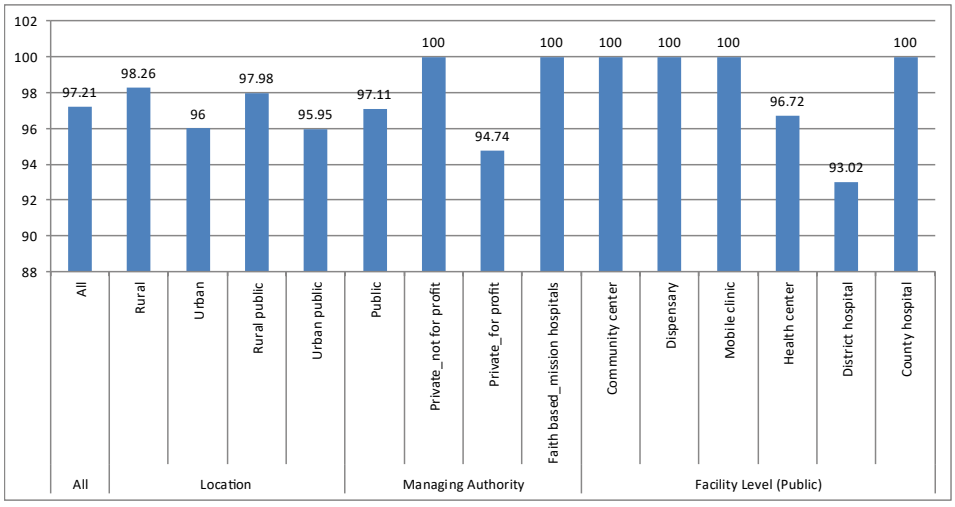
Figure 6.8: Facilities with access to clean running water (%)



Source: Health Assessment Survey (2017)

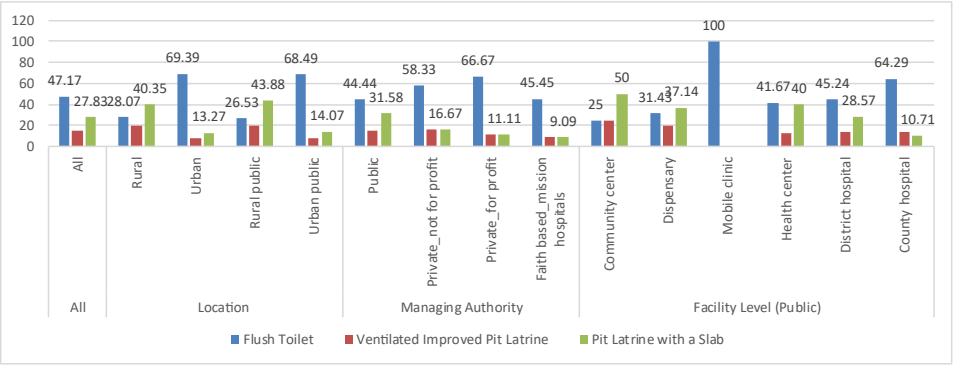
surgical operations. The study assessed facilities with clean running water and the results show that 87.2 per cent of all health facilities had access to clean running water. More urban facilities had access to clean running water than those in rural areas as shown in Figure 6.8. All private for-profit facilities had access to clean running water compared to 85.3 per cent of public health facilities in the country.

Figure 6.9: Health facilities with access to toilet facilities



Source: Health Assessment Survey (2017)

Figure 6.10: Types of toilets available to health facilities



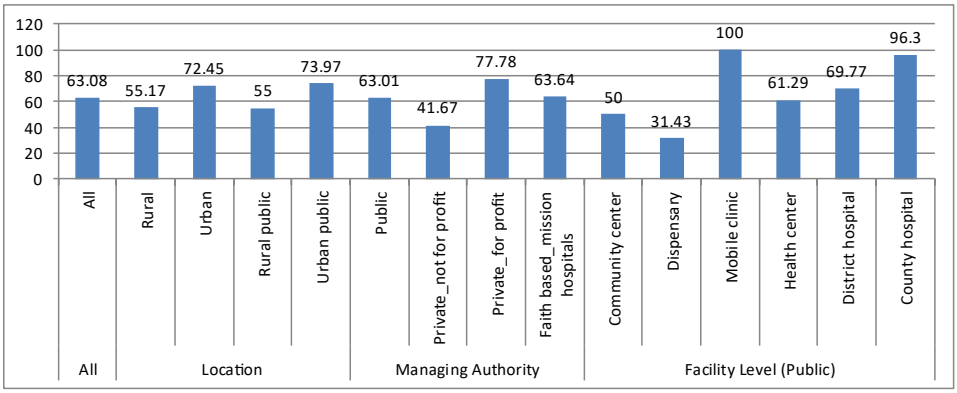
Source: Health Assessment Survey (2017)

The study established that 97.2 per cent of all health facilities had toilets, the private sector's 94.7 per cent being 2.5 percentage points above the public sector (Figure 6.9). Availability in rural facilities at 98.3 per cent was 2.3 percentage points above the urban rate, a difference in the rate also reflected between public rural and public urban facilities.

The most prevalent mode of human waste disposal was the flush toilet (47.7%) followed by pit latrine with a slab at (27.8%) as shown in Figure 6.9. Health facility waste varied from site to site and the biggest challenge was how to dispose off this wide range of waste streams using one solution.

Incineration was still the preferred way to process waste from health facilities without endangering the health of patients, staff or anyone else coming into contact with it. Health facilities waste suitable for incineration includes biohazards and

Figure 6.11: Healthy facilities with an incinerator

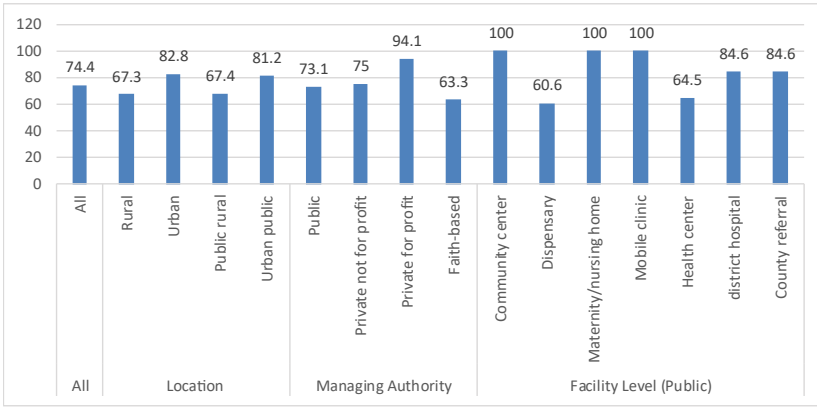


Source: Health Assessment Survey (2017)

Figure 6.12: Health facilities with hand washing soap

Source: Health Assessment Survey (2017)

Figure 6.13: Facilities with alcohol-based rub



Source: Health Assessment Survey (2017)

sharps, general medical waste and pathological waste. The study established that 63.1 per cent of health facilities had an incinerator, meaning that a large proportion of waste from health facilities (36.9%) was not disposed in the proper way, thus endangering health workers, patients and the general population as shown in Fig 6.11. Most urban health facilities (72.5%) had an incinerator compared to 55.2 per cent in rural areas.

The other common indicator for hygiene was availability of soap and water or alcohol based hand rubs at key points of care within the health facility. The proportion of health facilities with basic hand hygiene was assessed and 93.1 per

cent of health facilities had hand washing soap as shown in Figures 6.12.

Alcohol based rub was not common in most health facilities compared with hand washing soap as shown by figure 6.12 and Figure 6.13 respectively. Over 93.1 percent of all health facilities had hand washing soap while on average 74.4 percent of health facilities had alcohol based rub.

6.7 Conclusion and Recommendations

The country recorded an improvement in expansion and provision of specialized equipment in health facilities across counties. However, inadequacies in the health system infrastructure continue to limit access to healthcare and contribute to poor quality of outcomes in some counties. An appropriate mix of infrastructure matters in ensuring adequate health service delivery in each health facility, including access to water, sanitation and reliable energy supply.

As such, it is important to have in place a comprehensive long-term physical infrastructure development framework. This should address the distance to access healthcare and ensure efficiency of services; and enable achieving a balance between physical infrastructure expansion and provision of recurrent inputs such as human resources, medical supplies and equipment. The following are more specific pertinent issues that need to be addressed.

(i) There is a direct influence of distance to health facilities and utilization of healthcare. As such, given that some counties have on average longer distances than the norm, investing in mobile health facilities is an option to providing health service to communities that cover long distances and take time to access health facilities.

(ii) The sub-county and county referral hospitals require constant power supply to maintain refrigeration and storage of health vaccines and medicines, but also in supporting lives in the ICUs and HDUs. As such, there is need to invest in backup electricity generators.

(iii) Counties need to develop regulations related to waste incineration from health facilities to reduce risks that health workers and patients are exposed to. These should be in accordance with the WHO regulations on best practices for incineration.

(iv) Improving safe water and sanitation provision in the entire health system is essential for provision of quality service delivery in the health system.

Chapter 7: Health Equipment Supplies

Availability of functional equipment and adequate supply of drugs is important in the uptake and utilization of healthcare facilities. The production of health services requires: (i) the availability of key inputs such as drugs, equipment and infrastructure; (ii) providers who are skilled; and (iii) providers who exert the necessary effort in applying knowledge and skills. The study established that Kenya does relatively well on availability of key medical equipment and essential medicines. However, areas of improvement include ensuring universal availability of all tracer drugs especially for mothers and children in all facilities, and key drugs that are used in the management of communicable and non-communicable diseases; ensuring an even distribution of essential health equipment; as well as provision of requisite health guidelines to all health facilities as part of management of health service delivery.

7.1 Medical Equipment

(a) Basic medical equipment

Basic medical equipment and supplies are key inputs that aid in the diagnosis, monitoring and treatment of medical conditions. The study sought to assess the availability and functionality of medical equipment in health facilities. The basic equipment included child or an infant scale, adult scale, thermometer, stethoscope, sterilizing equipment and refrigerator. On average, more than 86 per cent of all facilities had the minimum medical equipment (Table 7.1), with private and urban facilities, including urban public facilities, recording higher levels of availability.

Refrigeration of vaccines and some medicines is important to ensure that the life span of critical medicines is extended to reach the intended users. However, half (50%) of health facilities in the country did not have a fridge. Majority of urban health facilities (67%) had a fridge compared to those in rural areas (33%).

Dry heat sterilization in health is a technique that uses very high temperatures to kill and eliminate various pathogens from medical equipment in a health facility. However, about 23 per cent of the facilities did not have the equipment, with over three quarters (77.2%) of health facilities reporting to have had an electric dry heat sterilization.

Table 7.1: Percentage availability of basic facility equipment

		Location				Managing Authority					Facility Level (Public)				
	All	Rural	Urban	Rural public	Urban public	Public	Private not for profit	Private for profit	Faith based mission hospitals	Community center	Dispensary	Mobile clinic	Health center	District hospital	County hospital
Weighing scale adult	64.9	60.9	69.5	61.5	71.8	65.9	25.0	81.3	70.0	100.0	42.4	0.0	70.0	69.8	73.1
Weighing scale child	98.6	99.1	98.0	99.0	98.7	98.9	100.0	94.7	100.0	100.0	94.3	100.0	100.0	100.0	100.0
Weighing scale infant	72.1	68.1	76.8	68.4	74.7	71.0	50.0	88.2	90.0	75.0	57.6	0.0	73.8	70.5	80.8
Thermometer	98.2	97.4	99.0	98.0	98.7	98.3	91.7	100.0	100.0	100.0	97.1	100.0	96.8	100.0	100.0
Stethoscope	96.3	95.7	97.0	96.0	97.3	96.6	83.3	100.0	100.0	75.0	100.0	100.0	95.2	95.6	100.0
Minimum Equipment Indicator	86.0	84.2	88.1	84.6	88.2	86.1	70.0	92.8	92.0	90.0	78.3	60.0	87.2	87.2	90.8
Refrigerator	50.3	33.3	67.0	30.5	71.0	49.0	20.0	66.7	75.0	25.0	11.5	100.0	27.5	68.3	96.3
Electric dry heat sterilizer	77.2	67.2	78.0	69.0	78.7	73.1	66.7	83.3	45.5	75.0	47.1	100.0	72.6	86.4	85.7
Combined measure of the indicators	79.7	74.5	83.6	74.6	84.4	78.9	62.4	87.7	82.9	78.6	65.5	75.0	78.3	85.5	91.9

Source: Health Assessment Survey (2017)

(b) Essential obstetric care

Essential obstetric care constitutes elements of obstetric care needed for the management of both normal and complicated pregnancy, delivery, and postpartum period. Essential obstetric care is defined at two levels of the healthcare system: Basic essential obstetric care and comprehensive essential obstetric care. Under basic essential obstetric care, a health facility should be able to provide: parental antibiotics, parental oxytocic drugs, parental anti-convulsants, manual removal of the placenta, manual vacuum aspiration and performed assisted vaginal delivery (e.g. ventouse or vacuum). Comprehensive essential obstetric care includes all services in basic essential obstetric care plus blood transfusion, and operative delivery under anesthesia, that is caesarean section.

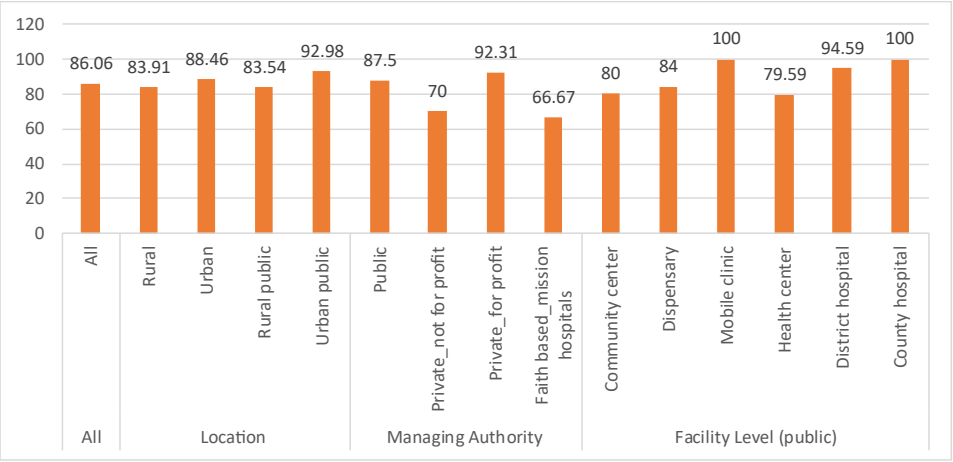
The survey assessed whether health facilities in the country had basic obstetric care equipment. About 86.0 per cent of all health centres in the country had basic obstetric care health equipment, with those in urban areas reporting a high of 88.5 per cent compared to 83.9 per cent reported in rural areas. All county hospitals and the mobile clinics through the *Beyond Zero* campaign reported to have the basic equipment (Figure 7.1).

7.2 Non-medical Equipment

a) Communication and office equipment

Communication equipment enables health facilities to communicate with other health facilities and outside the facilities in cases of emergency, information

Figure 7.1: Facilities with basic obstetric care equipment



Source: Health Assessment Survey (2017)

transmission, among others. The study explored the availability of a set of functioning communications equipment. All hospitals had communication equipment compared to health centres and dispensaries, while urban facilities outperformed rural health facilities. Generally, the availability of communication equipment in public facilities was lower compared to private facilities. Further,

Table 7.2: Information and communication

	Communication equipment				Office equipment							
	Telephony or cellular phone for facility	Fixed Phone	Internet services	Facility website	Desk-top	Lap-top	Camera	Photo-copier	Scanner	Tele-vision	Printer	
All	82.3	28	47.1	28	66.2	40.1	29.4	50.7	29.5	59.9	56.1	
Rural	73.3	11	29.1	10	52.8	24.8	13	30.3	10.9	44.1	36.4	
Urban	92.3	48.4	68.1	48.3	81.1	58.1	49.4	74.5	52.2	78.1	79	
Public rural	72.5	7.5	25.5	5.8	52.2	23	10.8	26.9	8.5	42.1	34	
Urban public	90.9	43.9	60.3	45.5	78.6	57.8	47.7	67.7	50.8	71.4	72.9	
Public	80	22.5	40.1	22.7	63.8	37.8	26	44.1	25.8	54.6	50.6	
Private not for profit	90	33.3	58.3	30	58.3	45.5	27.3	66.7	16.7	83.3	72.7	
Private for profit	93.3	64.7	89.5	61.1	89	60	52.9	89.5	55.6	94.7	89.5	
Faith-based	100	45.5	63.6	45.5	72.7	40	45.5	63.4	54.6	54.6	63.6	
Community centre	50	0	50	0	25	0	25	25	0	50	25	
Dispensary	48.2	3	12.5	6.9	34.4	18.8	3	12.1	3	12.1	9.1	
Health centre	80	12.3	31	17	51.8	16.4	10.7	29.8	12.5	52.5	40	
District hospital	97.2	30	57.5	25	85.4	57.1	44.7	70	42.5	75.6	80.5	
County referral	100	60	61.5	50	96	83.3	60	76.9	64	76.9	80.8	

Source: Health Assessment Survey (2017)

county referral and sub-district hospitals had a higher proportion of communication equipment compared to health centres and dispensaries (Table 7.2).

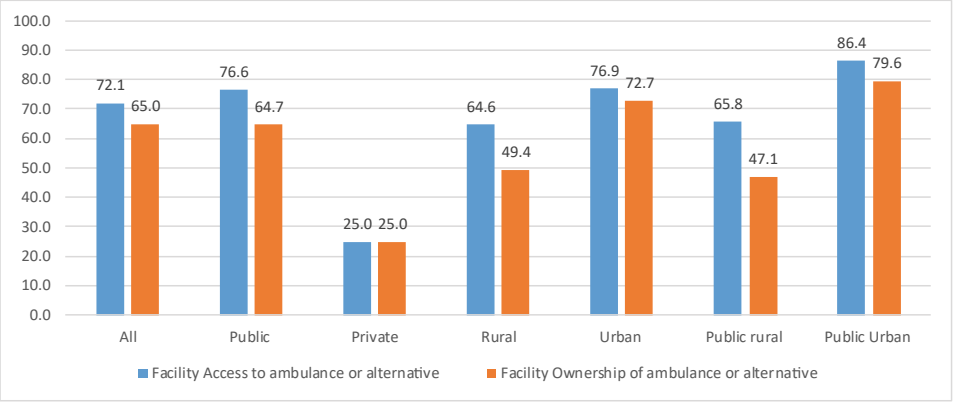
The distribution of office equipment across facility types shows that district and county referral hospitals were better equipped. There were, however, variations across regions, with urban facilities having mobile phones dedicated for facility use at 92.3 per cent while rural facilities' availability rate was 73.3 per cent.

(b) Emergency transport

The Ministry of Health referral system provides that patient cases that cannot be handled by lower level facilities are referred up the service delivery pyramid, making the availability of ambulance services critical. Besides the availability of functional ambulances, the survey also examined the availability of other vehicles that can be deployed in place of ambulances. The survey found that 72.1 per cent of the facilities had ambulances, the rate being higher in urban than rural health facilities in general, but also higher in public rural than public urban (Figure 7.2). The greater location of health facilities in urban areas leads to the higher availability of emergency transportation in urban-based facilities.

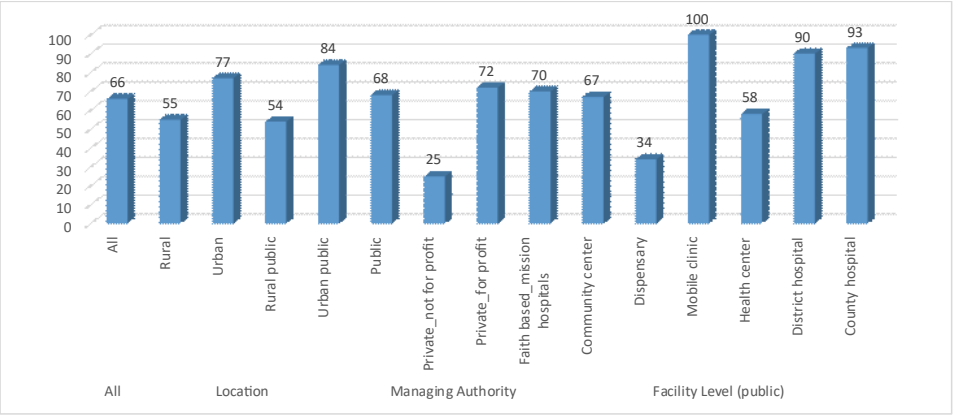
However, nearly half of the facilities could not promptly respond to emergencies when they occurred mainly because fuel availability for emergency transport stood at an average 66.0 per cent, the rate being higher for all urban facilities compared to their rural counterparts (Figure 7.3). An interesting finding was that fuel availability was higher at public urban (84%) compared to public rural (54.3%) facilities where long distances must be covered to a filling station and even hard to reach areas, where infrastructure and road network was poor.

Figure 7.2: Facilities with access to functioning or alternative emergency transport services



Source: Health Assessment Survey (2017)

Figure 7.3: Facilities with available fuel for the ambulance or emergency transport



Source: Health Assessment Survey (2017)

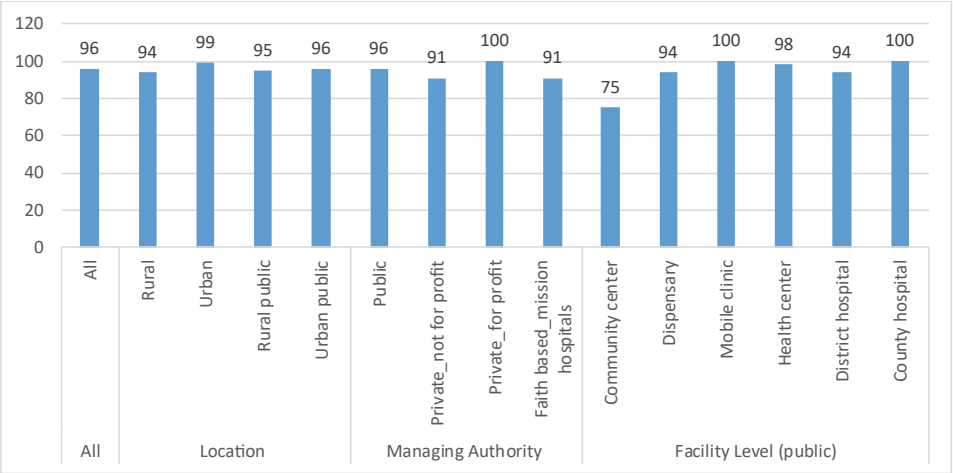
7.3 Medicines and Medical Supplies

(a) Essential medical supplies

According to the WHO norms, all facilities are expected to stock essential medicines that satisfy the priority healthcare needs of the population. Essential medicines are intended to be available within the context of functioning health systems at all times, in adequate amounts, in the appropriate dosage forms, with assured quality and adequate information, and at a price the individual and the community can afford. Figure 7.4 shows health facility stocks of medicines, vaccines and contraceptive commodities, with 96 per cent of all service delivery points being stocked with medicines, vaccines and contraceptive commodities. Surprisingly, when stock of medicines, vaccines and contraceptive commodities were analyzed by facility level, health centres in the country stock exceeded that of district hospitals which had the same stock levels as dispensaries.

The survey further sought to establish the availability of general medicines. On average, all general drugs were available at 75 per cent in all health facilities as shown in Table 7.3. However, Simvastatin was least available in all health facilities at 36 per cent while Amoxicillin was most available at 89 per cent of all health facilities reporting it available and valid. On average, urban facilities did better than rural facilities, as did urban public facilities in comparison to rural public ones. When drugs availability was analyzed by facility type, the survey found that availability in most instances increased with the service delivery pyramid. The urban and private dispensaries fared better than their respective rural and public counterparts. Among the health centres and district hospitals, availability was

Figure 7.4: Health facility stock of medicines, vaccines and contraceptive commodities



Source: Health Assessment Survey (2017)

better among the district health hospitals than health centres in the country.

Several antibiotics have been discovered following the discovery of penicillin. These antibiotics are helpful in treatment of various infectious diseases. The emergence of drug resistance and multiple drug resistance in microbes has posed a new challenge to medical researchers. The survey focused on alternative antibiotics available to treat infectious diseases in the country. Co-trimoxazole was widely available in all health facilities in Kenya at 90.6 per cent followed by Albendazole or Mebendazole and Amoxicillin at 89.6 per cent and 89.2 per cent, respectively (Table 7.4).

Co-trimoxazole used to treat certain infections such as pneumonia, bronchitis and infections of the urinary tract, ears and intestines was also widely used in both public and private health facilities compared to the other antibiotics. Analysis by facility level shows that fluconazole was the least available medicine available in all health facilities in the county. The medicine is used to prevent and treat a variety of fungal and yeast infections. However, the medicine was mostly available in 95 per cent of private for-profit health facilities, and 90.9 per cent of faith-based mission hospitals. When analyzed by facility level, the survey found that availability in most instances rose up the service delivery ladder.

(b) Essential medicines for children and mothers

Despite the national importance and priority that has been given to tracer or essential drugs for mother and children in addressing the infant and maternal

Table 7.3: Percentage availability of general medicines

	All	Location				Managing authority				Facility level (Public)				
	All	Rural	Urban	Rural public	Urban public	Public	Private not for profit	Private for profit	Faith based mission hospitals	Community centre	Dispensary	Health centre	District hospital	County hospital
Amitriptyline 25mg cap/tab	76	68	86	66	83	73	75	95	91	50	64	58	90	96
Amoxicillin 250mg cap	89	83	95	82	93	86	92	100	100	100	86	75	93	86
Ceftriaxone injection 250mg or 1g/vial	81	74	89	73	87	79	75	95	91	75	0	71	88	96
Ciprofloxacin 250mg cap/tab	80	78	83	77	82	79	92	85	82	50	69	72	91	92
Co-trimoxazole 200+40 mg/ml suspension (oral antibiotics for children	81	77	86	79	85	80	75	90	100	50	78	75	86	85
Diazepam 5mg tab	76	67	76	67	82	73	83	95	73	25	54	69	83	96
Diclofenac 50/75 mg cap/tab	71	61	82	59	76	66	75	95	91	25	53	58	84	79
Glibenclamide 5 mg cap/tab	71	62	80	62	79	69	67	85	73	75	47	58	88	92
Omeprazole 20 mg cap	75	66	85	63	79	70	92	95	91	75	53	58	88	88
Paracetamol 24mg/1ml	88	85	91	86	89	87	83	90	100	50	81	81	52	87
Salbutamol 100mcg/dose inhaler (bronchospasms/chronic asthma	73	65	82	62	81	70	75	85	91	75	46	63	87	88
Simvastatin 20 mg cap/tab	36	25	25	21	43	30	33	74	55	0	23	23	40	44

Source: Health Assessment Survey (2017)

Table 7.4: Percentage availability of medicines used to treat infectious diseases

	All	Location				Managing authority				Facility level (Public)				
	All	Rural	Urban	Rural public	Urban public	Public	Private not for profit	Private for profit	Faith based mission hospitals	Community centre	Dispensary	Health centre	District hospital	County hospital
Co-trimoxazole cap/tab (oral antibiotic)	90.6	87.6	94.0	86.6	93.2	89.4	91.7	95.0	100.0	50.0	94.4	60.0	90.7	100.0
Fluconazole cap/tab	73.1	61.1	86.9	56.7	84.7	68.6	83.3	95.0	90.9	50.0	47.1	60.0	83.1	92.3
Albendazole or Mebendazolecap/tab	89.6	87.6	91.9	86.6	90.3	88.2	100.0	95.0	90.9	50.0	80.0	84.8	97.7	96.2
Metronidazole cap/tab	81.2	71.1	92.9	70.4	90.3	78.8	83.3	95.0	90.9	50.0	75.0	70.0	90.7	88.0
Amoxicillin cap/tab	89.2	85.0	94.0	83.7	93.5	87.1	91.7	95.0	100.0	75.0	94.4	75.0	93.0	100.0
Ceftriaxone injection	79.4	73.7	86.0	72.7	86.0	76.6	75.0	100.0	90.9	100.0	55.6	66.7	93.0	96.2
Iprofloxacin cap/tab	78.9	73.5	85.0	72.2	80.8	75.9	83.3	100.0	81.8	50.0	61.1	66.7	90.5	96.2

Source: Health Assessment Survey (2017)

Table 7.5: Facilities with child health medicines and commodities

	All	Location				Managing authority				Facility level					
	All	Rural	Urban	Rural Public	Urban Public	Public	Private not for Profit	Private for Profit	Faith-based	Community centre	Dispensary	Mobile clinic	Health centre	district hospital	County referral
All	95	93	98	93	97	95	91	100	100	100	94	100	92	95	100
Procaine Benzyl Penicillin Injection	70	64	77	60	75	66	83	85	82	75	58	100	55	69	96
Oral Rehydration Salts (ORS) Sachets	84	80	88	78	89	83	67	95	91	100	69	100	77	90	100
Zinc Sulphate tablets	85	81	90	80	88	83	92	95	91	50	81	100	75	90	100
Zinc Sulphate syrup or dispersible tablets	67	55	80	49	78	62	75	90	91	75	58	100	42	69	96
Vitamin A (retinol) capsules	88	90	86	90	92	91	75	70	100	75	89	100	95	83	96
Antibiotic eye ointment for newborn	79	70	90	67	92	78	75	90	91	75	69	100	67	88	96
Co-trimoxazole syrup/suspension	80	73	87	71	85	77	75	95	100	75	75	100	70	79	92
paracetamol syrup/suspension	92	90	93	91	92	91	83	95	100	100	83	100	87	98	100
Amoxicillin 250 mg or 500 mg dispersible tablet or syrup/ suspension	87	85	89	84	89	86	92	85	100	75	83	100	80	91	96

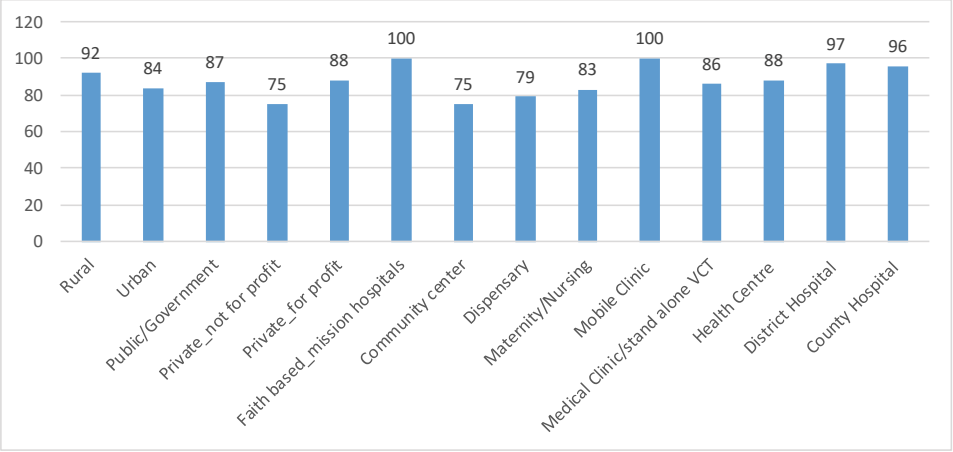
Source: Health Assessment Survey (2017)

mortality in the country, not all health facilities stock these drugs. About 95.2 per cent of health facilities reported to have child health medicines and commodities as shown in Table 7.5. Availability of tracer drugs was relatively high in all county referral hospitals compared to health centres, district hospitals and dispensaries. About 93 per cent of health facilities in rural areas had the essential medicines for children. Private for-profit health facilities performed slightly better compared to public health facilities with 100 per cent availability of essential drugs.

In deliveries, any unpredictable complication can occur, such as severe bleeding, hypertension and obstructed labour. When this happens, it is essential that women access life-saving emergency obstetric care. The survey established that 70 per cent of health facilities stocked medicines for obstetric care. All faith-based and mobile clinics reported to have stocked medicines for obstetric care as shown in Figure 7.5.

From a service delivery perspective, only the faith-based facilities and mobile clinics had all the tracer drugs for mothers. The result at the national level reflects what is happening at the county level. Surprisingly, rural health facilities outperformed public facilities and district hospitals outperformed the county referral hospitals and health centres.

Figure 7.5: Facilities that stock medicines for obstetric care



Source: Health Assessment Survey (2017)

7.4 Managing Communicable Diseases

a) Malaria control

Kenya is one of the Sub-Saharan African countries where malaria is most prevalent. The western region of Kenya currently has the highest malaria transmission intensity in the country. Nearly half of the Kenyan population (47.3%) lives in areas with a parasite prevalence of 5-10 per cent and 18 per cent live in areas with a parasite prevalence of 20-40 per cent, according to the Ministry of Health 2017. Routine data on malaria cases shows a similar picture, with majority of the cases from the malaria endemic zone and the lowest cases in the low endemic areas (Revised Kenya National Malaria Strategy 2009-2018). The malaria control interventions undertaken have led to a gradual drop in the proportion of suspected malaria cases in the outpatient attendance.

The interventions undertaken by the county governments include distribution of lasting insecticide treated mosquito nets. These prevention efforts have led to a gradual reduction in the burden of malaria. Malaria prevalence in the country is likely to increase if necessary steps in the management of malaria are not urgently undertaken. The study established that 89.6 per cent of health facilities had all the drugs for malaria control. The most readily available drug for malaria control was Arthemisinin-based Combination Therapy (ACT) at 80.1 per cent while the least available was Chloroquine (oral) and Primaquine (oral) at 19.6 and 21.0 per cent, respectively. Surprisingly, despite the existence of chloroquine resistant malaria in the country, some facilities in the country still stock Chloroquine drugs. Currently, ACT is recommended for treatment of malaria. The benefit of ACT is the high efficacy, fast action and the reduced likelihood of developing resistance. Chloroquine is still the first line of treatment for malaria treatment, while Primaquine can be used to treat liver stage parasites of malaria, in low malaria transmission if adherence is guaranteed. County referral hospitals had majority of the drugs (95.5%) compared to health centres and district hospitals which reported 93.9 per cent and 87.5 per cent, respectively, as shown in Table 7.6.

The use of treated nets has been used as one of the main measures of reducing malaria in the country. The proportion of patients and their families who had access to ITNs was 75.1 per cent while about 25 per cent were not covered. However, a lower per cent of 48.3 was reported for insecticide treated bed nets vouchers for patients and their families and households.

Tuberculosis (TB) management

The country is at risk of reversing the gains made in the management of TB given that not all health facilities stocked TB drugs. The situation is prevalent in urban health facilities than in rural areas, with 86.4 per cent of health facilities having all

Table 7.6: Malaria drugs available and valid in health facilities

	All	Rural	Urban	Rural Public	Urban Public	Public	Private not for Profit	Private for Profit	Faith-based	Comm-unity center	Dispensary	Mobile clinic	Health center	District hospital	County referral
All	**89**	**87**	**92**	**86**	**91**	**88**	**92**	**94**	**100**	**75**	**75**	**100**	**94**	**88**	**95**
Arthemisinin-based Combination Therapy (ACT)	80	77	84	76	82	79	92	84	82	50	69	100	83	77	88
Artemisinin Monotherapy (oral)	50	40	61	35	56	44	58	85	64	25	35	100	38	44	69
Artesunate rectal or injection dosage forms	63	56	70	54	72	62	58	79	55	50	53	0	54	72	73
SP (Sulfadoxine + Pyrimethamine)	51	48	55	46	56	51	58	60	36	50	31	0	50	51	77
Chloroquine (oral)	20	12	28	10	30	19	14	30	18	25	17	100	13	19	31
Quinine (oral)	39	28	51	22	49	34	42	60	73	50	17	0	28	37	62
Primaquine (oral)	21	12	30	10	31	19	25	35	18	25	9	0	16	24	28
Insecticide treated bed nets for patients and their families and households	75	80	70	79	75	78	67	60	73	75	57	100	82	86	81

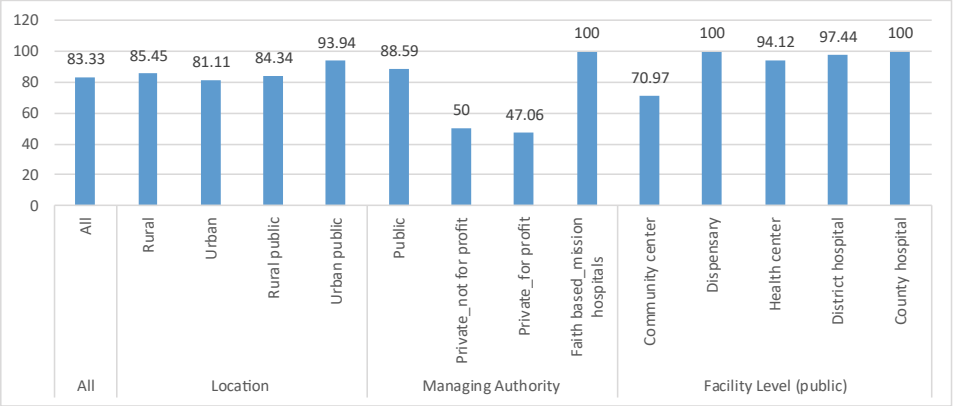
Source: Health Assessment Survey (2017)

Table 7.7: Availability of TB drugs

	All	Rural	Urban	Rural Public	Urban Public	Public	Private not for Profit	Private for Profit	Faith -based	Comm- unity center	Dispensary	Mobile clinic	Health centre	District hospital	County referral
All	86	88	85	88	93	90	58	67	100	25	71	100	94	100	100
Ethambutol	76	75	78	73	86	79	58	61	82	25	52	100	85	85	92
Isoniazid	81	84	78	81	87	84	64	61	91	25	63	100	83	95	100
Pyrazinamide	73	74	73	72	82	76	55	56	82	50	56	100	74	85	92
Rifampicin	70	70	71	67	77	71	55	67	82	50	56	100	71	78	80
Isoniazid + Rifampicin (2FDC)	78	79	76	77	84	80	55	56	100	50	52	100	78	98	96
Isoniazid + Ethambutol (EH) (2FDC)	71	71	71	68	77	72	64	56	91	50	61	100	71	76	83
Isoniazid + Rifampicin + Pyrazinamide (RHZ) (3FDC)	79	80	78	78	90	83	55	50	100	75	52	100	86	95	96
Isoniazid + Rifampicin + Ethambutol (RHE) (3FDC)	74	72	77	70	87	77	55	50	91	25	45	100	88	86	83
Streptomycin Injectable	53	46	62	46	67	55	45	33	73	25	27	0	0	66	68

Source: Health Assessment Survey (2017)

Figure 7.6: Facilities with ARVs available and valid



Source: Health Assessment Survey (2017)

drugs for TB treatment. Isoniazid was the most widely available TB drug at 80.9 per ceent while Streptomycin Injectable was the least available at 53.5 per cent. All sub-national and county referral hospitals had all the drugs available for TB treatment as shown in Table 7.7.

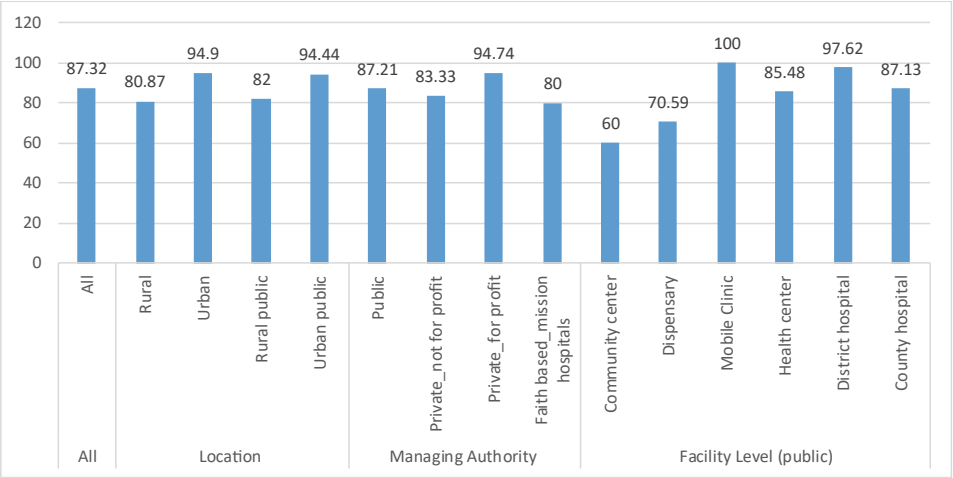
HIV care and management

The path to an AIDS-free population is dependent upon the ability of individuals at risk to seek treatment and for the individuals to find and access quality health services, providers and products. A well-functioning health system should be able to meet these needs, effectively support prevention, and provide care and treatment for HIV and AIDS. County referral hospitals and all faith-based health facilities had antiretroviral (ARVs) therapy available as shown in Figure 7.6. Private health facilities reported the lowest availability level in stocking ARVs compared to public health facilities, while all community health centres did not have ARVs.

7.5 Management of Non-Communicable Diseases

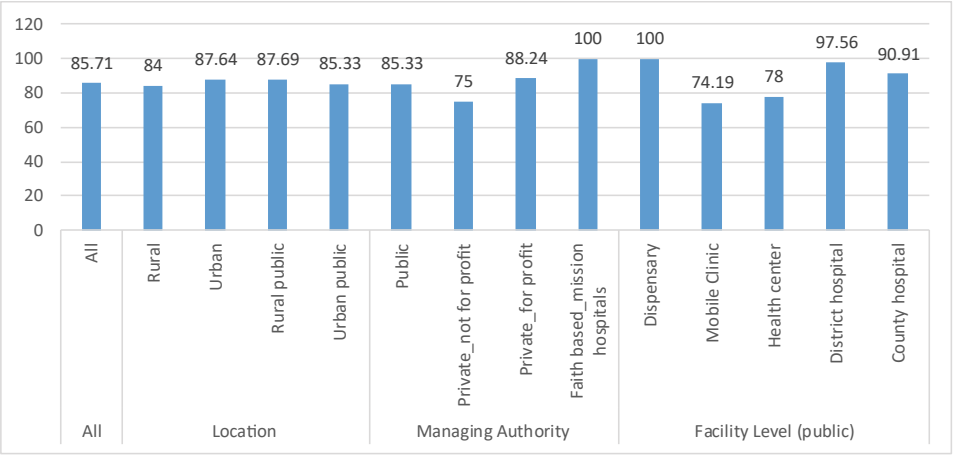
In Kenya, non-communicable diseases (NCDs) account for more than 50 per cent of total hospital admissions and over 40 per cent of hospital mortality. With projections indicating that morbidity from HIV/AIDS, TB and other infectious diseases is declining, NCDs and injuries will be the major health burden by 2030 in Kenya. The major NCDs of concern in Kenya include cardiovascular diseases, cancers, diabetes mellitus, chronic respiratory diseases, injuries, alcohol and substance abuse ailments, and a battery of small but very significant diseases

Figure 7.7: Facilities that offer diagnosis or management of NCDs



Source: Health Assessment Survey (2017)

Figure 7.8: Facilities with medicines for treatment of NCDs



Source: Health Assessment Survey (2017)

such as epilepsy, sickle cell anemia, and nutritional and birth defects, all of which confer long term complications and disabilities. Towards monitoring progress to combating NCDs, the country saw an increase in the number of women of the reproductive age group screened for cervical cancer from 127,859 in 2012/13, to 178,474 in 2013/14 and 291,318 in 2014/15 financial years. Nationally, more district hospitals (97.6%) offer diagnosis or manage non-communicable diseases than country referral hospitals (97.1%). Majority of health facilities (87.3%) in

the country offer diagnosis of NCDs. The health system in the country had mixed results in the management and diagnosis of NCDs.

Nationally, 71.2 per cent of health facilities had a valid national guideline for diagnosis and management of NCDs as shown in Figure 7.7. Those that had valid guideline were more than those that had but reported to have expired. District hospitals reported at 83.3 per cent to have valid guidelines compared to county referral facilities which reported at 70.2 per cent.

Management of NCDs is expensive for households. This requires specialized treatment which quite often is not available locally and where available patients are required to incur high expenditures. The study sought to assess the availability of drugs for treating NCDs and whether the drugs were valid. Generally, most facilities (85.7%) reported to have valid drugs across the health system in the country. Interestingly, dispensaries and district hospitals out performed county referral hospitals and health centres

7.6 Conclusion and Recommendations

Absence of refrigerators in majority of health facilities was observed, which is a key requirement for storage of some drugs and vaccines. This could explain why some facilities were not storing critical vaccines required for immunization. As such, there is need to ensure that all hospitals are adequately equipped with refrigeration facilities as a key basic equipment.

There are mismatches of drugs availability across facilities and regions, which can undermine diligence over sustained treatment if mothers must make an additional trip after getting their own treatment to get medicines for their children. Further, some facilities did not have the required essential medicines for mothers and children. There were also gaps in availability of key medicines used in the management of both communicable and non-communicable diseases. Thus, county governments need to revisit the procurement and distribution arrangement to ensure that health facilities are fully stocked with the required tracer drugs to reduce infant and maternal deaths in the country.

Although most of the facilities had access to a functioning ambulance or alternative, not all the available functional ambulances had fuel, meaning that evacuating patients remained a challenge in some instances. In addition, most facilities had the required equipment but these were not functional. It is therefore important that budgeting for equipment should go hand in hand with the required maintenance and operational costs.

Chapter 8: Health Services Uptake and Citizen Satisfaction

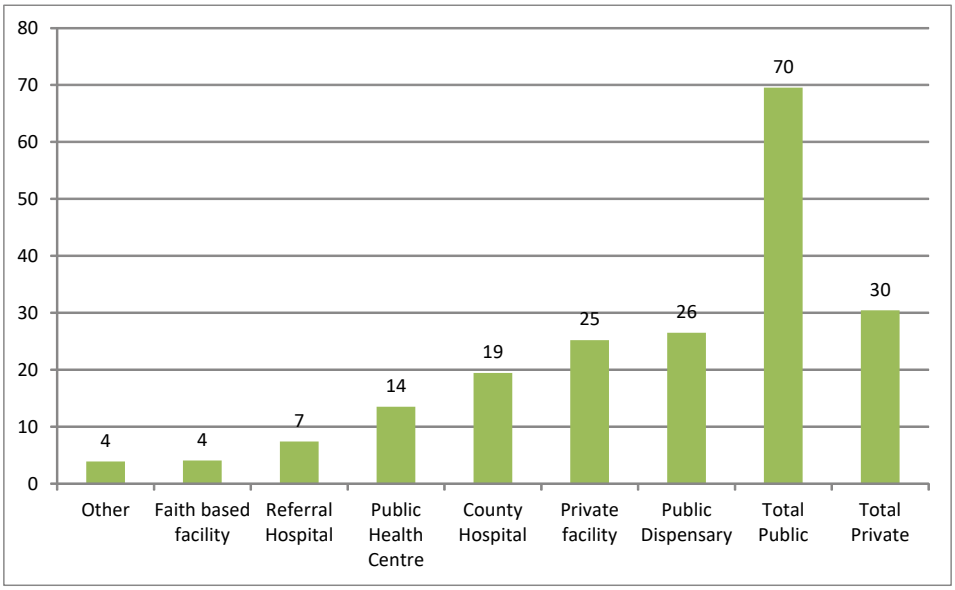
The level of public health uptake and citizen satisfaction provides a key indication of how households rate quality of public healthcare. The main indicators used include health seeking behaviour, access to maternal health, quality of technical and social treatment by medical attendants, waiting time, usable diagnostic tools and equipment, drugs and other qualitative satisfaction indicators. Results show that utilization of public health facilities was high at the public health centres and dispensaries, and higher in rural areas. The health personnel upheld a professional relationship with the patients. Access to maternal healthcare has increased significantly and more women were giving birth in health facilities. However, each county should strive to address the barriers to accessing maternal healthcare. Availability of drugs has also improved with the devolved system especially in rural areas, but there is need for facilities to improve the stocking of the drugs at their pharmacy. Although the community health committee was rated below average (28.5%), the community health service was a critical contributor to improved service delivery at the community. Each county needs to budget adequately for community health workers. Overall, the healthcare management system requires substantial improvement in all aspects.

8.1 Seeking Services from Health Facilities

Uptake of primary healthcare services is an indicator of increased access and potential improvements in health outcomes. The Key indicators for tracking uptake include antenatal clinic attendance and maternal delivery in health facilities, consumption of family planning and reproductive health services, and trends in the use of immunization and malaria prevention services. The quality of healthcare is determined by level of investment in health facilities, equipment, medical commodities such as drugs and other consumables, and human resources in health; i.e. key inputs and effort by service providers. Poor infrastructure, inadequate supplies and lack of effort from providers essentially leads to poor services.

Utilization of public health facilities was higher in public health centres and dispensaries. According to the KIPPRA Health Assessment Survey 2017, 83 per cent of those who reported to have been sick in the past four weeks sought

Figure 8.1: Health facility visited (%)



Source: Health Assessment Survey (2017)

treatment in a health facility. Most of the patients (70%) sought services at public health facilities, with demand for services at the dispensaries at 26 per cent, followed by county hospitals at 19 per cent and public health centres at 14 per cent (Figure 8.1).

A higher proportion (65.7%) of the rural population visited government facilities as opposed to urban population. This corroborates the findings of Kenya Integrated Household and Budget Survey (KIHBS) 2015/16 where 73.4 per cent of the population who reported an illness indeed visited a public health facility, of which 34.7 per cent visited a dispensary, 20.3 per cent visited a government hospital while health centre visits accounted for 18.4 per cent. This trend is expected given that a greater proportion of the population living in rural areas live below the poverty line.

Among the key factors that have contributed to increased demand for health services include the conditional transfers to county governments. Specifically, with funds ring-fenced for Level 5 hospitals and free maternal care, among others, service delivery has been improved by enhancing the infrastructure at the facility, providing modern diagnostic equipment, theatres and drugs. Similarly, the funds had greatly enhanced access to free maternal health services, with obstetric care equipment available in most facilities.

That said, socio-cultural barriers still hinder uptake of healthcare. According to the qualitative interviews from the KIPPRA Health Assessment Survey 2017, socio-cultural factors such as preference for squatting position at birth, among others, prevent women from seeking maternity services. Poverty, illiteracy, religious beliefs prohibiting use of injections and lack of facilities for Persons with Disabilities (PWDs) were among the most commonly cited reasons.

8.2 Citizen Satisfaction

Citizen satisfaction as a measure of healthcare was evaluated using questions associated with different dimensions of satisfaction. These include the quality of technical and social treatment by medical attendants, waiting time and the quality of the waiting area, availability and adequacy of human resources, usable diagnostic tools and equipment, drugs and other materials, and charges, notwithstanding information asymmetry (Arrow, 1963). Based on this, the study made an enquiry into perception of citizen satisfaction using both household survey and facility surveys. Overall, the KIPPRA Health Assessment Survey 2017 found that 60.0 per cent and 57.1 per cent of the respondents at both the national and county government healthcare systems felt that there was need for substantial improvement in these dimensions.

About 90 per cent of the counties had established management structures composed of community health committees, primary care management committees, hospital boards and county department responsible for health. However, satisfaction with

Figure 8.2: Existence of selected organizational structures

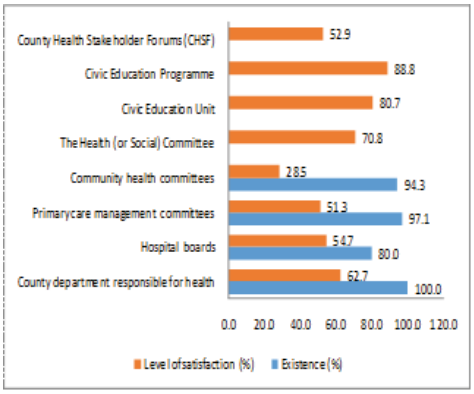
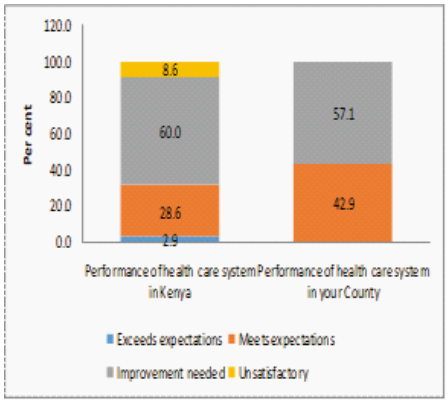


Figure 8.3: Level of satisfaction with health system



Source: Health Assessment Survey (2017)

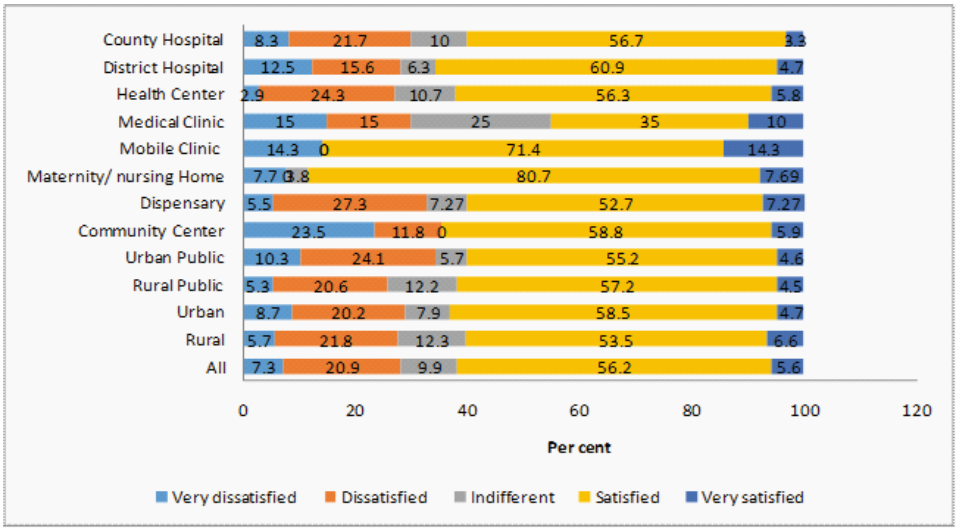
the structure was rated below average for community health committees (28.5%), primary care management committee (51.3%) and hospital boards (54.7%) (Figure 8.2). Overall, a significant number of respondents indicated that improvement in the health system is required.

Both the national and county healthcare systems fell short of their expectations. Only 28.6 per cent and 2.9 per cent individuals from counties felt that the national healthcare system met expectations or exceeded expectations, respectively. In terms of level of satisfaction with services provided across health facilities, maternity/nursing homes (88.3%), mobile clinics (85.7%) and district hospitals (65.6%) were rated fairly well compared to the other types of facilities. The highest level of dissatisfaction was observed for medical clinics (Figure 8.4).

Generally, there was improved satisfaction with service delivery among citizens since the devolution era. The KIPPRA Health Assessment Survey 2017 elicited the perceptions of the citizen's satisfaction with the personnel services rendered at the health facilities. Over 95 per cent of the population who had visited health facilities were satisfied. Specifically, 96.7 per cent, 97.3 per cent and 96.7 per cent were satisfied with services rendered by the health administrators, nurses and doctors, respectively. The approval ratings were generally greater in rural areas than urban areas. All the aspects of service delivery were rated above 70 per cent (Table 8.1).

Medical personnel generally understood their duties and could treat patients

Figure 8.4: Level of satisfaction of health services by facility type



Source: Health Assessment Survey (2017)

with high standards of courtesy. The medical personnel were also able to respect patient's privacy during consultation, listen to them carefully;, undertake necessary physical examination/s, recommend laboratory examination where necessary, and explain required medical procedures in an understandable manner.

Table 8.1: Selected indicators of citizen satisfaction, 2017 (%)

	Rural	Urban	All
(i) **Satisfaction with health administration**			
Did the health administrator (reception) treat (Name) with courtesy and respect	97.2	94.4	96.7
Did the health administrator (reception) listen (to Name) carefully?	100	94.4	98.9
Did the health administrator (reception) explain (to Name) things in an understandable way?	97	100	97.8
(ii) **Satisfaction with services offered by nurses**			
Did the nurse treat (Name) with courtesy and respect for privacy	98.6	94.4	97.3
Did the nurse listen (to Name) carefully?	98.6	100	98.8
Did the nurse explain (to Name) things in an understandable way?	97.1	94.4	96.6
(iii) **Satisfaction with services offered by doctors**			
Did the doctor treat (Name) with courtesy and respect for privacy during consultation?	98.6	88.9	96.7
Did the doctor listen (to Name) carefully?	100	94.4	98.9
Did the doctor undertake any physical examination (to Name)?	94.4	83.3	92.2
Did the doctor recommend any lab examination (to Name)?	77.5	83.3	78.6
Did the doctor explain (to Name) things in an understandable way?	87.5	100	89.9
(iv) **Satisfaction with provision of medical supplies**			
Do you think health facilities have more essential drugs now than before devolution?	77.2	22.8	55.6
Where did you buy your drugs? Facility pharmacy	58.8	76.5	62.3
Private pharmacy next to facility	14.7	5.9	12.9
Private pharmacy away from facility	23.5	11.7	21.2
Private shop	2.9	5.9	3.5

Source: Health Assessment Survey (2017)

Despite the high approval ratings for personnel services, availability of medical drugs was the single area for which respondents recorded adverse levels of satisfaction. However, compared to the period prior to devolution, availability of drugs in facilities has improved, with 55.6 per cent of households indicating that health facilities had more drugs and medical supplies (63.9%) now than the period before devolution. The perceptions were higher in rural areas (77.2%) compared to urban areas (22.8%), meaning the biggest gainers from devolution were the rural facilities. Whereas drug availability had marginally improved in urban areas,

a majority (76.5%) of the purchases were executed at the facility pharmacy. This may be interpreted to imply that the facilities in urban areas are better equipped than those in rural areas long before devolution. On average, about 38 per cent of households purchased commodities from private facilities and/or shops.

The devolved system has seen great improvements in health services. Overall, 62.3 per cent of the citizens observed that health services were better in 2017 compared to before 2013, with 21 out of 47 counties being below the average. Among the key areas reported with great improvement include equipping of health centres (68.6%) and dispensaries (66.7%) and increased proportion of doctors relative to nurses (60.6%). This is because a higher ratio of doctors to nurses positively influences the survival of the child and the mother. Further, health facilities had more essential equipment (63.9%) and drugs (55.6%) now than before 2013 (Figure 8.5).

With devolution, personnel services in the health sector were also perceived as having improved. This could be attributed to improvement in infrastructure provision, availability of equipment, availability of drugs and ambulances. Ambulances became available for the first time in most counties after devolution of healthcare services. In some counties, ambulatory services were provided to residents at no cost. The services had also improved the efficiency of the referral system within the counties. Some counties also had health service hotlines and response from the public was very positive.

Community health volunteers played a critical role in improving health service delivery but their services were rarely available. This is the first level of healthcare provision and entails availability of informed community health workers who were able to assist households in healthcare preventive measures and curative support services. Some of the contributing factors include low facilitation and hence not attractive to the potential volunteer workers. Also, most community health workers are hardly paid subsistence allowance, nor provided with safety equipment when managing patients and/or transport facilitation. During the KIPPRA Health Assessment Survey 2017, about 39.4 per cent of the population surveyed indicated that they had interacted with the community health volunteers in their villages.

Table 8.2: Community health workers' services, 2017 (%)

	Rural	Urban	All
During the last one year, have you seen any community health worker in your village?	40.4	36.5	39.4
Have you received any sensitization/awareness from a community health worker	38.3	38.8	38.4
If yes did the training cover the following areas			
Clean water and hygiene	92.3	88.2	91.1
Sanitation/Toilets	86.5	90	87
Immunization	98.1	85	94.5
HIV/AIDS prevention and care	88.5	90	88.9
Noncommunicable disease prevention	86.5	90	87.5

Source: Health Assessment Survey (2017)

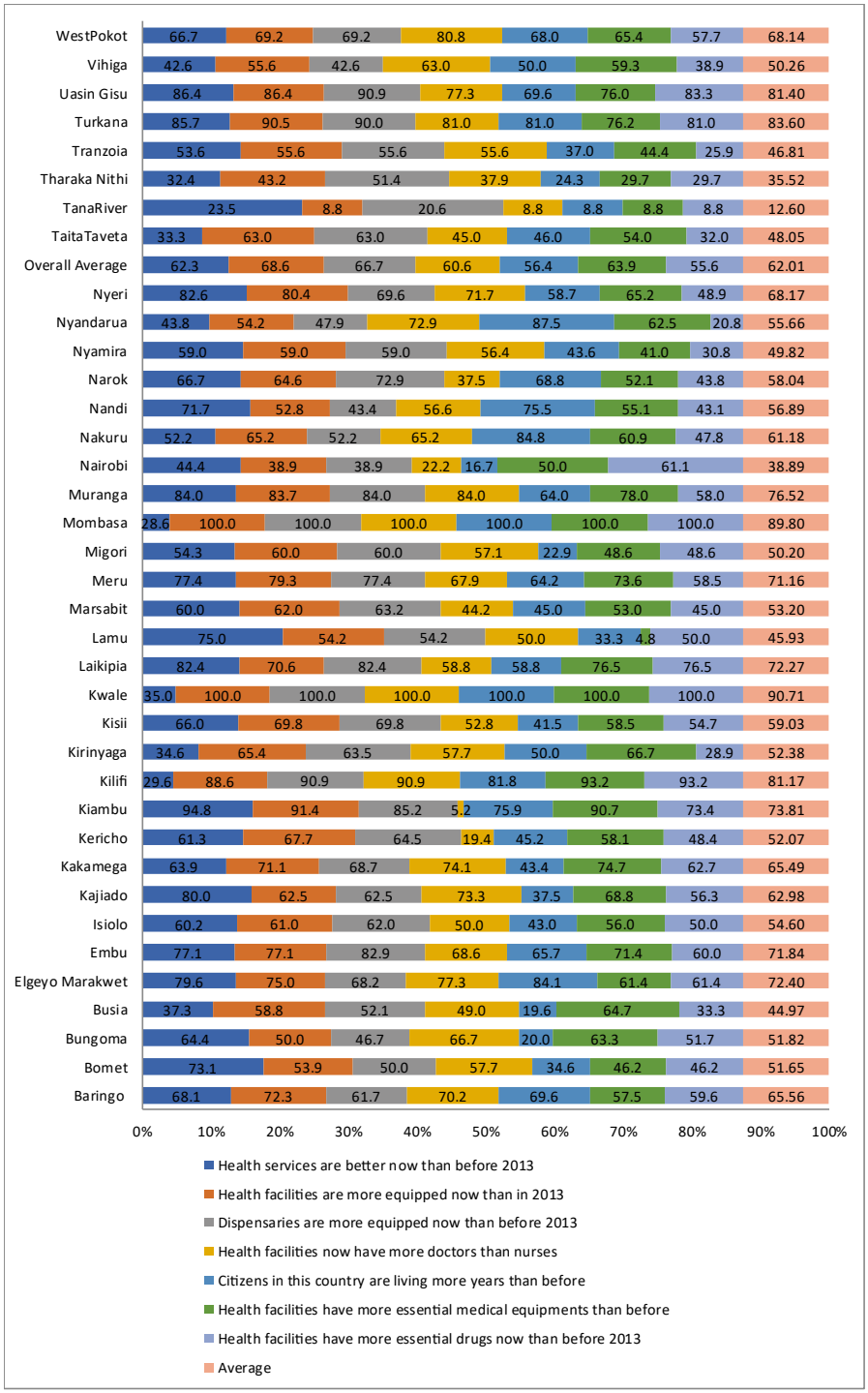
The community health volunteers sensitized the people in the village on various aspects of prevention and care. About 38.4 per cent had been sensitized on clean water and hygiene, sanitation, immunization, HIV/AIDS prevention and care and prevention of non-communicable diseases. This was a critical finding given the role played by preventive healthcare in promotion of long term health outcomes. According to the qualitative interviews at the county level, it was reported that most counties did not have own budgets to support the community health volunteers. Some counties relied on partners to fund the services offered by the community health volunteers. However, where community services are available, both the citizens and the county administration perceived to have received very good services from community health workers.

8.3 Conclusion and Recommendations

The uptake and citizen satisfaction analysis considered seeking medical care, access to maternal health, quality of technical and social treatment by medical attendants, waiting time, usable diagnostic tools and equipment, drugs and other materials.

Utilization of public health facilities was high at the public health centres and dispensaries, and in rural areas. Over 90 per cent recorded satisfactory professional relationship between health personnel and the patients. Access to maternal healthcare has also increased significantly, with more women giving birth in health facilities. However, efforts are needed to overcome socio-cultural factors affecting use of health facilities for maternal healthcare.

Figure 8.5: Level of satisfaction of health services by county



Source: Health Assessment Survey (2017)

Further analysis indicates that health facilities have more essential equipment and drugs now than before devolution, especially in rural areas. However, there is need for facilities to improve the stocking of the essential medical supplies such as drugs at the facility pharmacy. Generally, the healthcare system requires substantial improvement.

Although the availability of community health committees was rated below average (28.5%), the community health services were a critical contributor to improved service delivery at the community. However, financing of community health volunteers was not prioritized in most of the counties. It is important that each county budgets for the necessary resources for community health volunteers.

Chapter 9: Health Service Delivery Index

The overall healthcare service delivery index comprised seven components, namely: availability of medical drugs, public participation, citizen satisfaction, availability of medical equipment, access to basic amenities including water and sanitation, infrastructure and equipment and human resources for health excluding specialists. The index was used to measure the level of healthcare delivery at county level. The composite healthcare service delivery index was estimated at 59.5 percent nationally, with respective component scores at 65.8 per cent for access to basic medical drugs; 33 per cent for the public participation component; 55.9 per cent for citizen satisfaction; 75.7 per cent for access to medical equipment; 81.8 per cent for access to amenities (water, sanitation as proxied by access to incinerator and electricity), 65.5 per cent for infrastructure and 38.8 per cent for availability of human resources. This finding indicates that recent government initiatives towards promoting universal healthcare have contributed to improved healthcare service delivery in the country, but there is room for improvement. For example, it is important that counties address challenges related to health human resources across facilities and counties; support public participation on health policy making; improve access to medical drugs; and ensure equitable distribution of health infrastructure. Investment in other related sectors such as education, improvement of sanitation and food security and nutrition would contribute to improved health outcomes across counties.

9.1 Constructing Healthcare Service Delivery Index

To assess the overall healthcare service delivery or system readiness, a health service delivery index was computed based on the health system building blocks that fall under seven broad categories, namely: drug availability; public participation; citizen satisfaction; availability of medical equipment; access to basic amenities including water and sanitation and infrastructure; equipment and human resources for health.

The process of constructing the index started with identifying and categorizing the components as well as sub-components of the healthcare service delivery. This was followed by identification of indicators that correspond to each sub-component. About fifteen (15) indicators were identified under the seven broad components of healthcare delivery (Table 9.1). The indicators selected were based on identified gaps/needs based on outcomes that the health system would like to address.

The computed sub-indices were used to compute the composite health service delivery index using equal weights. The overall healthcare delivery index was therefore a simple arithmetic mean of the seven components. The county health care index was equal to the weight of each of the components, which then enabled computation of overall composite index at national level. To allow for an objective interpretation, each of the sub-indices and indicators were measured on a scale of zero (for worst score) to 100 per cent (best possible score). Data used in computing the index was generated from the KIPPRA Health Assessment Study 2017. The survey covered a representative sample of households and involved the public and private sector health facilities, as well as the citizenry. Further, the users of health care services were engaged. These included individuals, households and health professionals.

Table 9.1: Health service delivery components and indicators

Healthcare Index Components	Sub-categories	Indicators
(i) Drug availability	Maternal and child tracer drugs	**Proportion of facilities having:** (i) Maternal health tracer drugs (MH) (ii) Child health tracer drugs (CH)
	HIV treatment	(iii) First line drugs for HIV
	Malaria treatment	(iv) First line treatment for malaria (ACT)
	Treatment for TB	(v) Treatment for TB
	Diabetes drugs for NCD	(vi) Metformin oral treatment for diabetes
ii) Public participation	Citizen engagement in planning, budgeting and health policy making processes	**Proportion of citizens:** (vii) Engaged in policy making processes including planning and budgeting (viii) Engaged in health policy making processes; Knowledge on public participation (ix) Participation in civic education
(iii) Citizen satisfaction	Satisfaction with heath service delivery	(x) Level of citizen satisfaction with delivery of services in health facilities (xi) Level of health care for children and mothers
(iv) Medical equipment	Medical equipment	(xii) Proportion of maternal and child health/ family planning (MCH/FP) unit having KEPI refrigerators
(v) Amenities (Water sanitation and hygiene)	Amenities (water, incinerator, electricity)	(xiii) Proportion of health facilities having access to: water; sanitation (proxied by availability of incinerators); and electricity

(vi) Infrastructure	Infrastructure	(xiv) Proportion of health facilities with: antenatal clinics (ANC); operating theaters, KEPI refrigerator; and with laboratories that have CD4.machines
(vii) Human resource	Availability of human resources	(xv) Share of health human resource in post relative to the estimated requirement.

Secondary sources of data included the county and national government documents and datasets, among other sources. The next sub-sections of this chapter present the healthcare service delivery composite index. This is done by first presenting the scores for each of its seven components and their link with selected socio-economic indicators.

9.2 Healthcare Index Components

a) Availability of drugs

The quality of treatment and overall service delivery depends on drug availability in facilities. Six availability indicators were selected and used. These were:

(i) Average availability of 11 maternal health tracer drugs (MH drugs)

ii) Average availability of 11 child health tracer drugs (CH drugs)

iii) Availability of all first-line drugs for HIV

iv) Availability of Artemisinin-based combination therapies (ACT), first-line treatment for malaria

v) Availability of RHZE, a four-drug fixed-dose combination (4FDC) for intensive treatment of tuberculosis

vi) Availability of Metformin, the preferred oral treatment for diabetes

On average, 78.3 per cent of health facilities in counties had maternal health tracer drugs in their facilities, but just 39 per cent had child health tracer drugs. Most facilities had drugs for diabetes; availability of Metformin was at 71.7 per cent nationally. Counties tended to have the least availability of first-line treatment for malaria (ACT) than the other drugs included in the analysis at 50 per cent (Table 9.2).

Drug availability index was 65.8 per cent at national level, ranging from highest of 84 per cent to lowest of 50 per cent. This implies that access to basic drugs such as child health tracer drugs, first line drugs for HIV, first line treatment for malaria, treatment for TB and Metformin oral treatment for diabetes is still a challenge with a national deficit of 34.2 per cent.

Table 9.2: Proportion of facilities reporting availability of drugs by condition (%)

County	MH Drugs	CH Drugs	HIV	Malaria	TB	Diabetes	Drug Availability Index
National	**78**	**39**	**83**	**50**	**74**	**71**	**65.8**
Baringo	60	60	80	60	100	100	76.7
Bomet	100	60	50	60	60	60	65.0
Bungoma	88	25	100	57	75	50	65.8
Busia	100	80	100	33	100	50	77.2
Elgeyo Marakwet	67	67	100	67	100	100	83.5
Embu	50	50	67	33	67	67	55.7
Garissa	50	60	40	60	40	60	51.7
Homa Bay	80	20	100	25	50	25	50.0
Isiolo	100	75	75	75	50	75	75.0
Kajiado	60	20	100	80	60	100	70.0
Kakamega	100	13	100	25	75	38	58.5
Kericho	100	50	50	60	100	25	64.2
Kiambu	100	60	75	70	75	100	80.0
Kilifi	60	40	100	100	75	100	79.2
Kirinyaga	80	100	100	50	40	100	78.3
Kisii	83	33	100	80	100	40	72.7
Kisumu	60	40	100	40	80	40	60.0
Kitui	67	33	100	50	67	100	69.5
Kwale	60	40	50	80	50	80	60.0
Laikipia	60	60	60	40	0	80	50.0
Lamu	67	67	67	50	83	83	69.5
Machakos	67	50	80	33	83	100	68.8
Makueni	80	20	60	60	50	80	58.3
Mandera	43	86	71	86	43	100	71.5
Marsabit	100	40	67	50	100	50	67.8
Meru	100	50	100	70	100	80	83.3
Migori	83	33	83	50	67	83	66.5
Mombasa	100	0	100	33	100	50	63.8
Murang'a	100	25	100	33	100	67	70.8
Nairobi	63	75	88	88	75	75	77.3
Nakuru	0	100	100	100	100	100	83.3
Nandi	67	50	83	33	40	83	59.3
Narok	0	100	0	100	100	100	66.7
Nyamira	75	25	100	67	100	67	72.3

Nyandarua	100	70	70	80	80	80	80.0
Nyeri	60	60	80	80	80	100	76.7
Samburu	100	60	50	60	75	75	70.0
Siaya	80	20	100	40	100	40	63.3
TaitaTaveta	60	40	50	60	50	80	56.7
Tana River	67	17	83	50	83	100	66.7
Tharaka Nithi	100	29	71	43	71	71	64.2
Trans Nzoia	100	60	100	60	100	60	80.0
Turkana	100	30	50	60	50	60	58.3
Uasin Gishu	100	0	80	40	80	80	63.3
Vihiga	100	17	100	70	100	33	70.0
Wajir	50	100	100	100	50	100	83.3
West Pokot	100	20	75	25	75	25	53.3

Source: Health Assessment Survey (2017)

b) Public participation index

The public participation index was computed based on citizen engagement in planning, budgeting and health policy making processes. At the national level, the index was 33.0 per cent, indicating that public participation was still low. The lowest level of citizen participation was 11.4 per cent while the highest was 55.9 per cent as indicated in Figure 9.1. This implies that there was low proportion of citizens engaged in health policy making, including planning and budgeting at county level.

c) Citizen satisfaction index

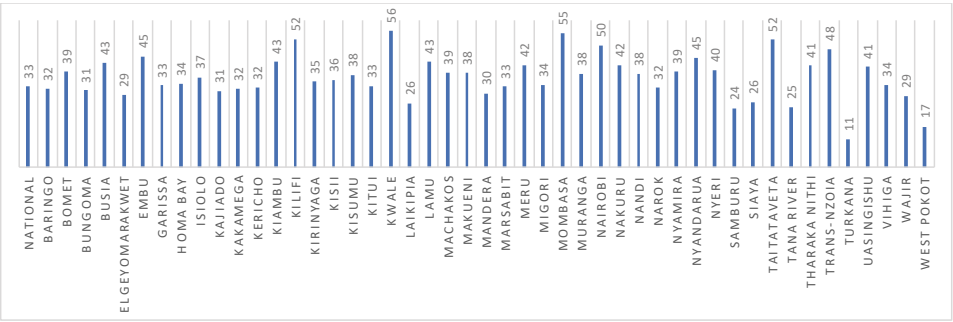
Citizen satisfaction index focused on satisfaction with health service delivery. The national index for this dimension was 55.9 per cent. More than half of the counties were below the national index, indicating low level of citizen satisfaction with healthcare service delivery (Figure 9.2).

d) Medical equipment

Five medical equipment indicators were used, including antenatal ward/clinics (ANCs); operating theatres; ambulances; Kenya Expanded Programme on Immunization (KEPI) refrigerators per maternal and child health/family planning (MCH/FP) unit; and CD4.

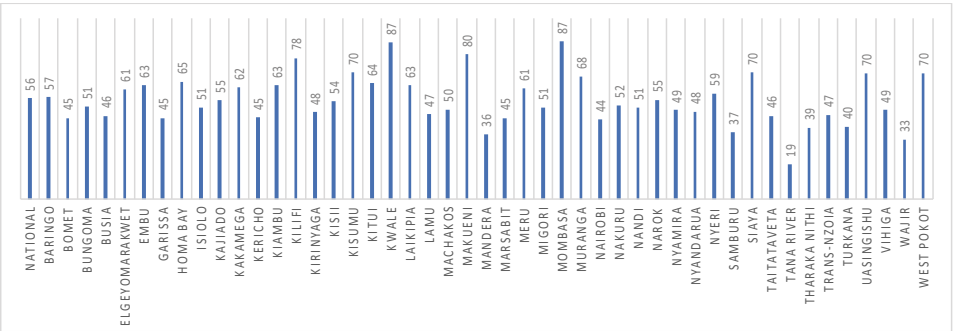
Counties differed widely in the percentage of primary healthcare centres with an antenatal clinic/ward of 84.9 per cent nationally. The number of operating theaters and ambulances per hospital ranged from 41.3 per cent and 72.9, respectively. In terms of equipment, 88.6 per cent of health facilities had KEPI refrigerator per

Figure 9.1: Public participation index, county and national level



Source: Health Assessment Survey (2017)

Figure 9.2: Citizen satisfaction index county and national level



Source: Health Assessment Survey (2017)

MCH/FP unit, but there was a lack of CD4 machines in facilities with laboratories at 36.5 per cent (Table 9.3).

At the national level, the medical equipment index was 75.7 per cent, ranging from a low of 47 per cent to a high of 93 per cent. Only eight (8) counties were below 70 per cent, implying that health facilities especially hospitals in the country had the required equipment.

Table 9.3: Availability of Medical Equipment (%)

	ANC	Operating Theaters	Ambulances	KEPI	CD4	Medical Equipment Index
National	**85**	**41**	**73**	**89**	**37**	**76**
Baringo	80	40	100	100	40	93.3
Bomet	82	46	78	80	54	65.0
Bungoma	100	38	50	100	25	85.4
Busia	80	17	67	83	33	80.6
Elgeyo Marakwet	100	33	100	100	33	72.2
Embu	75	50	75	100	67	79.2
Garissa	100	100	100	100	100	60.0
Homa Bay	100	33	40	40	0	46.7
Isiolo	75	50	50	100	100	79.2
Kajiado	80	40	80	100	40	73.3
Kakamega	75	14	75	86	33	77.1
Kericho	50	50	50	67	0	66.7
Kiambu	80	40	100	100	40	80.0
Kilifi	100	60	80	100	20	86.7
Kirinyaga	100	25	40	100	20	86.7
Kisii	100	25	100	67	25	55.6
Kisumu	60	20	50	100	33	70.0
Kitui	67	33	50	100	40	61.1
Kwale	100	60	80	80	40	86.7
Laikipia	100	40	100	100	33	86.7
Lamu	83	67	50	83	67	83.3
Machakos	100	50	83	100	40	80.6
Makueni	100	20	75	100	0	80.0
Mandera	100	40	83	100	50	77.8
Marsabit	80	20	80	100	50	76.7
Meru	100	50	100	83	20	88.9
Migori	100	60	60	100	25	86.1
Mombasa	50	50	67	80	40	75.0
Murang'a	75	75	100	50	25	75.0
Nairobi	100	88	88	88	100	83.3
Nakuru	100	100	100	100	100	80.0
Nandi	83	33	100	83	0	75.0
Narok	100	100	0	100	0	66.7
Nyamira	100	100	67	100	0	76.7
Nyandarua	0	0	0	100	100	69.4
Nyeri	60	40	100	80	40	77.0
Samburu	75	20	40	80	0	73.3

Siaya	100	40	80	60	40	70.8
Taita Taveta	75	40	60	80	25	83.3
Tana River	83	50	67	100	50	70.0
Tharaka Nithi	50	29	50	80	33	72.2
Trans Nzoia	100	60	80	80	20	83.3
Uasin Gishu	60	20	80	100	0	73.3
Vihiga	100	0	83	100	33	53.3
Wajir	100	50	100	100	100	77.8
West Pokot	100	25	50	75	0	83.3

Source: Health Assessment Survey (2017)

e) Amenities (water, incinerator, electricity) index

The water sanitation and hygiene index was computed based on access to amenities such as water, incinerator and electricity. The national index was 81.8 per cent with up to five (5) counties registering an access of 100 per cent. With about 47 per cent of the counties below the national mean, it means more attention is required in providing for these amenities (Figure 9.3).

f) Infrastructure index

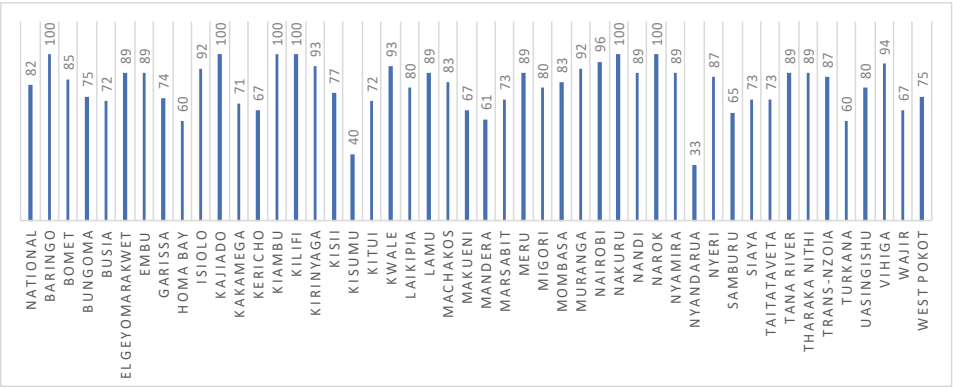
The infrastructure index focused on access to health facilities, including antenatal clinics. The national index was 65.5 per cent, with half of the counties falling below the national figure. This indicates that there is inadequate access to health facilities in most counties. However, in some counties, access to health infrastructure was commendable as it was at 95 per cent and 93 per cent, respectively (Figure 9.4).

g) Health human resources

The delivery of public health interventions requires skilled and adequately supported health personnel. The term Human Resources for Health (HRH), according to the World Health Organization (WHO), refers to all people engaged in actions whose primary intent is to enhance health. In computing the health human resources only, the care givers (doctors and nurses) were considered. Population data was used to estimate the minimum number of health professionals required per county. The results are presented in Table 9.4.

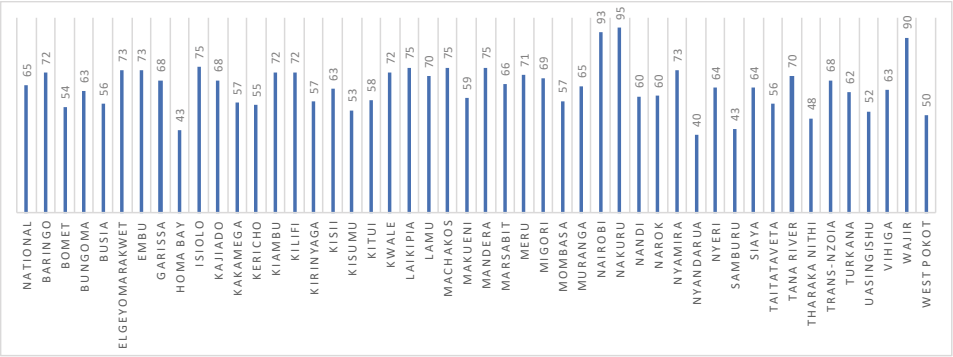
The proportion of doctors per 10,000 people in the 47 counties ranged from a low of 4 to a high of 224, which are below the benchmarks of three (3) medical officers per 10,000 people (Ministry of Health, 2013b). However, the index computation did not consider the diverse norms guiding distribution of health specialists across the counties.

Figure 9.3: Amenities index, by county (%)



Source: Health Assessment Survey (2017)

Figure 9.4: Infrastructure index, county and national level (%)



Source: Health Assessment Survey (2017)

The human resource Index computed on basis of availability of human resources shows a national index of 38.8 per cent. At county level, more than half of the counties had below 50 per cent access to health human resources, with the least at 5 per cent and highest at 89 per cent.

Table 9.4: Health human resource index

County	Pop.	Pop. per Doctor	*Approx. No. of Doctors	Min. Required	Pop. per Nurse	Min. Required	*Approx. No. of Nurses	Human Resource Index
National	38,610,097	80,783	33	74	3,049	888	409	38.8
Baringo	555,561	278,000	2	56	4,115	592	135	13.2
Bomet	724,186	103,000	7	85	4,210	951	172	13.2
Bungoma	1,630,934	45,000	36	128	3,315	1467	492	30.8
Busia	488,075	31,000	16	70	1,148	793	425	38.2
Elgeyo Marakwet	369,998	62,000	6	32	2,434	395	152	28.6
Embu	516,212	13,000	40	54	1,060	551	487	81.2
Garissa	623,060	52,000	12	61	2,316	665	269	30.1
Homa Bay	958,791	44,000	22	92	1,949	1028	492	35.9
Isiolo	143,294	143,000	1	11	3,115	153	46	19.6
Kajiado	687,312	76,000	9	66	7,723	733	89	12.9
Kakamega	1,660,651	69,000	24	159	3,122	1771	532	22.6
Kericho	758,339	15,000	51	58	1,823	630	416	77.0
Kiambu	1,623,282	15,000	108	159	1,466	1785	1107	65.0
Kilifi	1,109,735	48,000	23	84	2,655	1184	418	31.3
Kirinyaga	528,054	31,000	17	54	1,100	563	480	58.4
Kisii	1,511,422	378,000	4	119	5,703	1348	265	11.5
Kisumu	968,909	15,000	65	92	1,433	1033	676	68.0
Kitui	1,012,709	26,000	39	96	1,770	1081	572	46.8
Kwale	649,931	46,000	14	63	3,080	693	211	26.3
Laikipia	399,227	21,000	19	35	1,446	426	276	59.5
Lamu	101,539			7		108		57.0
Machakos	1,098,584	27,000	41	102	1,688	1172	651	47.9
Makueni	884,527	37,000	24	87	1,970	944	449	37.6
Mandera	1,025,756	256,000	4	97	14,051	1094	73	5.4
Marsabit	291,166	321,000	1	26	1,967	311	148	25.7
Meru	1,356,301	38,000	36	126	1,609	1447	843	43.4
Migori	563,033	24,000	23	88	1,478	978	381	32.5
Mombasa	939,370	7,000	134	89	1,381	1002	680	89.0
Murang'a	942,581	17,000	55	87	1,609	951	586	62.4
Nairobi	3,138,369	23,000	136	123	2,797	3548	1122	71.1
Nakuru	1,603,325	32000	50	153	2,146	1710	747	38.2
Nandi	752,965	94,000	8	72	3,137	803	240	20.5
Narok	850,920	41,000	21	83	3,128	908	272	27.6
Nyamira	598,252	100,000	6	41	2,498	519	239	30.3
Nyandarua	596,268	22,000	27	56	1,117	638	534	66.0

Nyeri	693,558	5,000	139	67	654	740	1060	75.0
Samburu	223,947	25,000	9	20	1,037	239	216	67.7
Siaya	842,304	44,000	19	82	1,815	898	464	37.4
TaitaTaveta	284,657	71,000	4	26	2,612	304	109	25.6
Tana River	240,075	48,000	5	26	5,108	304	47	17.3
Tharaka Nithi	365,330	21,000	17	32	1,773	389	206	53.0
Trans Nzoia	818,757	273,000	3	76	6,110	873	134	9.6
Turkana	855,399	285,000	3	83	14,748	912	58	5.0
Uasin Gishu	894,179	4,000	224	86	706	954	1267	46.0
Vihiga	554,622	185,000	3		3,990		139	13.7
Wajir	661,941	132,000	5	48	4,163	706	159	16.5
West Pokot	512,690	73,000	7	53	1,979	547	259	30.3

Source: Health Assessment Survey (2017)

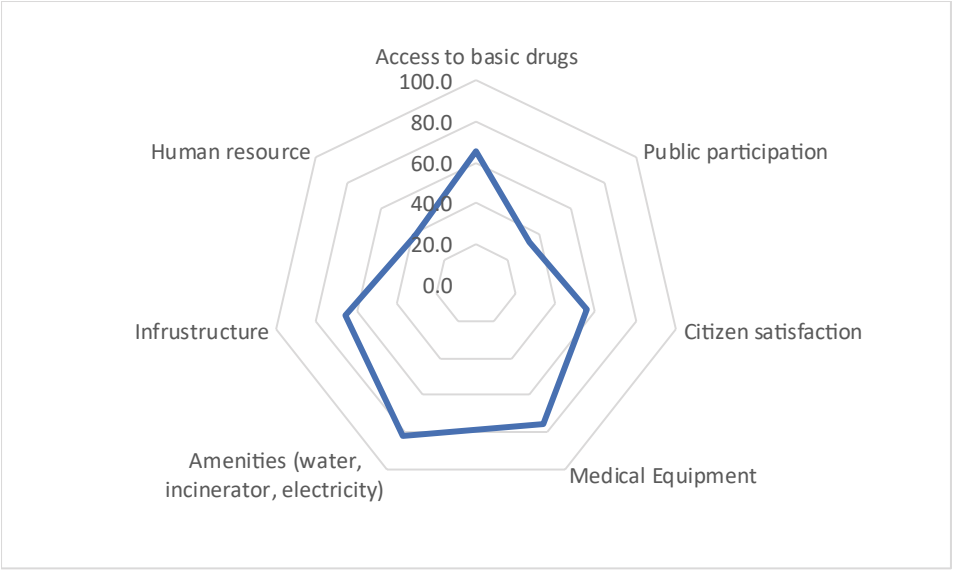
9.3 Composite Health Service Delivery Index

The overall health service delivery index, including human resource measure, was estimated at 59.5 per cent. When human resource was excluded, the index was estimated at 63 per cent. The measure assumed equal weighting of all the seven components. The respective component scores were 65.8 per cent for access to basic medical drugs; 33 per cent for the public participation component; 55.9 per cent for citizen satisfaction; 75.7 per cent for access to medical equipment; 81.8 per cent for access to amenities (water, sanitation as proxied by access to incinerator and electricity), 65.5 per cent for infrastructure and 38.8 per cent for availability of human resources (Figure 9.5). The score implies relatively modest attainment in health service delivery but low achievement in public participation followed by citizen satisfaction components.

There were regional variations in health service delivery performance. The overall health service delivery index for each county was an arithmetic mean of the seven sub-indices. Thus, the county health indices assumed an equal weight for the sub-indices. The national and county level health indices are illustrated in Figure 9.6. The aggregate health service delivery index was estimated at 59.5 percent, while the county indices vary from a high of 74 per cent to a low of 44 percent.

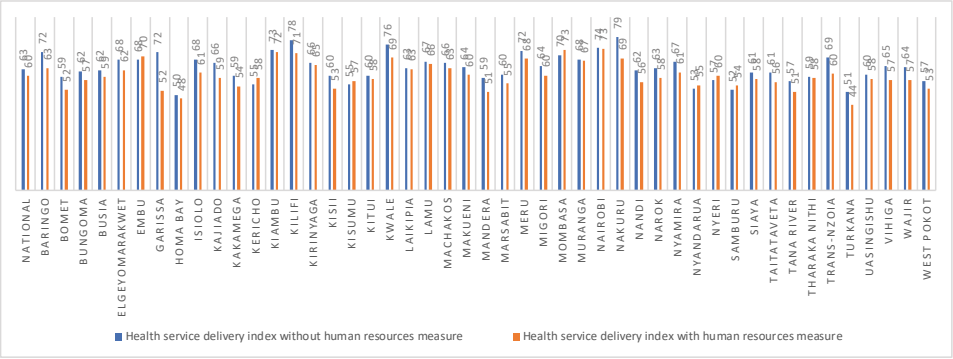
When the human resources measure was added to the health service delivery index, the national value dropped from 63 per cent to 59.5 per cent. Health service delivery index for all counties also dropped with the addition of the human resources measure. This can be attributed to the fact that human resources are

Figure 9.5: Components of health service delivery index



Source: Health Assessment Survey (2017)

Figure 9.6: Health service delivery index with and without human resources measure (%)



Source: Health Assessment Survey (2017)

critical in healthcare delivery and the associated index was low at national and county level, hence the drop in health service delivery index.

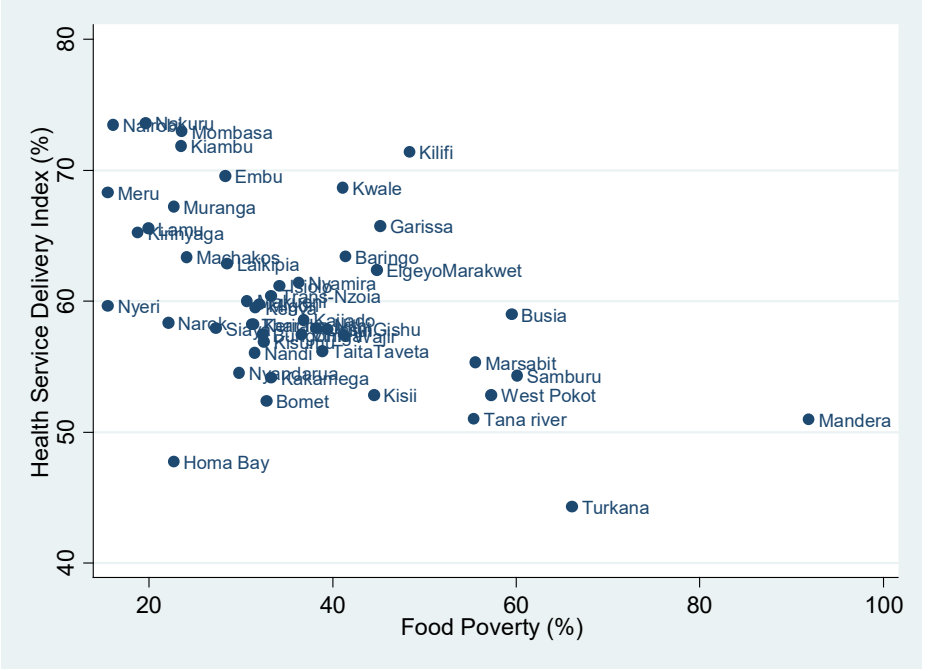
9.4 Link Between Health Service Delivery and Socio-economic Indicators

Selected socio-economic indicators were correlated with the healthcare service delivery index, including poverty, average years of schooling and sanitation.

As reported in Figure 9. 7, there was a negative correlation between food poverty and health service delivery index. It is possible that lack of adequate health service delivery and especially the primary health can be associated with high poverty levels (as an outcome). Similarly, poverty, including food poverty, causes poor health. Food poor households are unlikely to overcome the physical barrier of accessing healthcare when it is needed. These barriers are mainly in the form of the related costs of not only transport but also consultation and medication.

Other relevant factors that come into play that affect poor households are lack of voice needed to make social services work, and lack of information on health

Figure 9.7: Health service delivery index and food poverty (%)



promoting practices. These factors suggest that a strong health system for Kenya would require keen focus on poor households, and on the factors that are likely to stifle their access to health services.

There seems to be a positive correlation between county average years of schooling and healthcare service delivery index across counties (Figure 9.8). Good healthcare lowers the financial risk of health shocks and thus supports investments in education. In addition, children can learn at optimal levels if they are healthy. On the other hand, if health services are poor or inadequate, children may be exposed to diseases that may negatively impact on school attendance and academic achievement.

Finally, access to improved sanitation has a positive impact on healthcare provision as it reduces the spread and incidence of disease causing germs (Figure 9.9). Improving access to sanitation is critical towards reducing the impact of water borne diseases that have affected many communities in Kenya, including cholera, diarrhea, and trachoma.

It is expected that investments in healthcare are likely to yield little benefits if there

Figure 9.8: Health index and years of schooling (%)

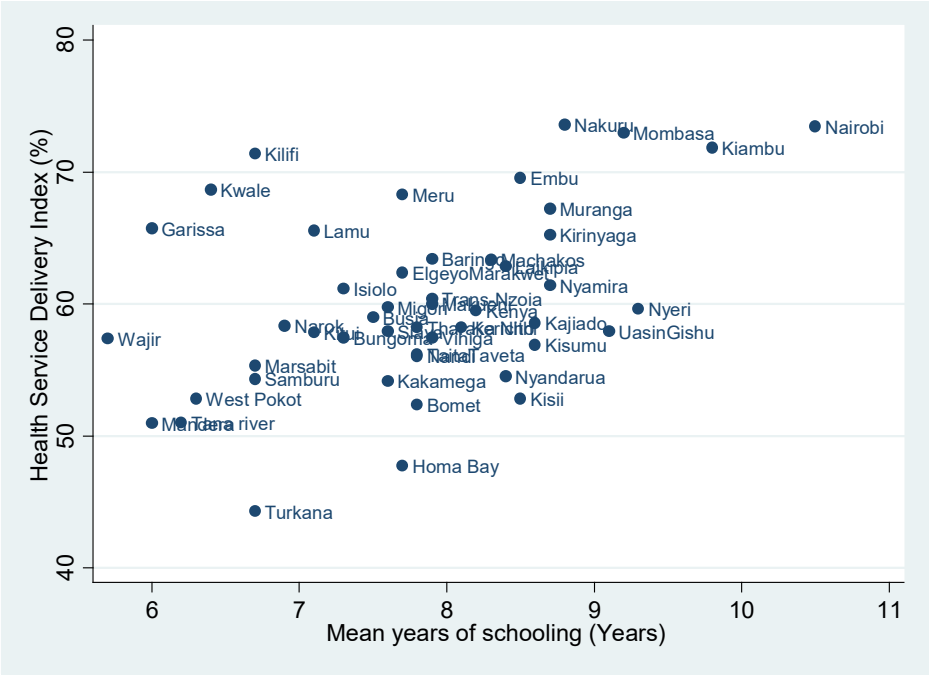
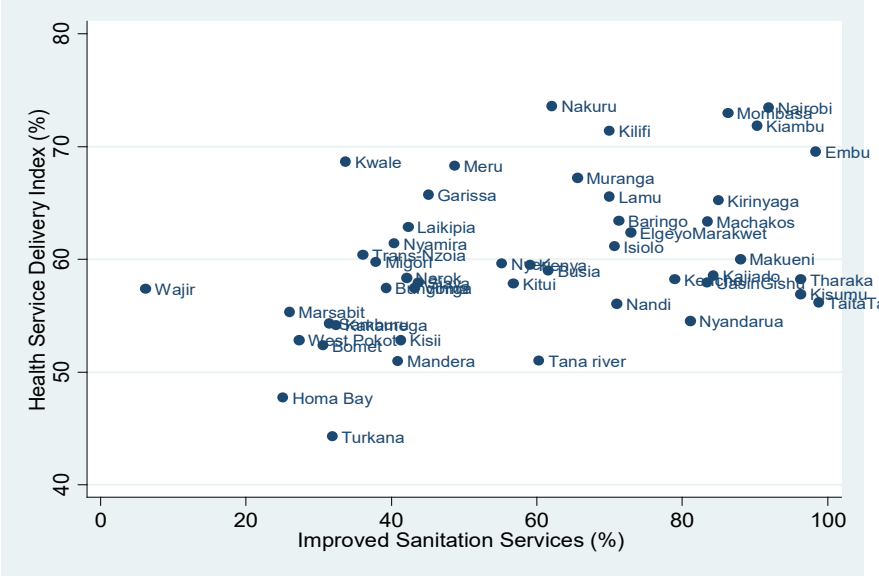


Figure 9.9: Health index and sanitation (%)



are no corresponding investments in sanitation. These include investments in access to portable water and toilet facilities for households, and schools especially in marginalized communities.

9.5 Conclusion and Recommendations

Analysis reveals variability in county health system readiness to provide healthcare under the devolved system. Some counties face challenges in accessibility of health inputs. Counties that reported to have done well may still have inadequate health inputs, according to national and international standards. For instance, counties did not meet the national benchmarks for population density of medical practitioners in the country. Based on these results, the study points out various areas of improvement:

(i) Although most counties faced unique challenges during the devolution process, the focus should be on low performing counties. Analysis shows that some counties may struggle in more than one area, from inadequate infrastructure, and equipment to availability of essential drugs.

(ii) There is need to target the weak areas across all the 47 counties. There are several indicators with low rates across all counties. For instance, most facilities do not have adequate supplies of essential drugs for maternal

and child health and non-communicable diseases such as diabetes. As a result, the national government may need to issue guidelines or standards for specific county level health system components. These weak areas could also be incorporated into the criteria for counties receiving conditional grants.

(iii) Counties should be provided with norms and standards for benchmarking availability of health inputs in service delivery. National and county level norms and standards for health system inputs are lacking.

(iv) The index should be integrated as a mechanism of measuring health performance at county and facility level. This would drive counties' commitment in service delivery, and hence attainment of UHC.

(v) Counties should adopt an integrated approach in health sector improvement by investing in food security and nutrition, education and safe water and sanitation. This is because the sectors have an effect on overall healthcare performance, including improving nutrition, uptake of health programmes and general hygiene of the population.

Chapter 10: Conclusion and Recommendations

10.1 Conclusion

The main objective of the study was to assess the status of healthcare services and uptake of healthcare services in the country since the accession to devolution in 2013. Devolution of the health sector transferred most primary healthcare functions from the national government to county governments, including coordination and management of the delivery of county healthcare services, ambulance services and disease surveillance. The national government formulates policy and guidelines on health service charges, provides technical support, monitors quality of health services and carries out research on health services management and administration. Implementation of the legal framework had been smooth, with most counties developing bills to support the devolution of the sector.

Overall, healthcare delivery has improved with devolution as counties put in place governance and management structures as required by law. For example, there was improvement in maternal and child mortality, pre- and post-natal visits, immunization of children, child nutritional status, and life expectancy. This notwithstanding, most of Kenya's health indicators fell short of other middle-income countries as well as the SDG targets. In addition, there were significant disparities across counties. Further, non-communicable diseases such as cardiovascular diseases and cancer are also on the rise.

The devolved system of government has seen an increase in the proportion of budgetary allocations to the health sector at both national and county government levels. However, there are key challenges in financing the sector, including delayed disbursement of funds to health facilities, which has affected service delivery. This was further worsened by the facilities banking funds collected, leaving them with strained financial resources flows to undertake routine and emergency services. Other challenges included delays in disbursement of funds and weak financial management systems at facility level.

Quality, adequate and equitably distributed Human Resources for Health (HRH) is essential for realization of the governments agenda on universal health coverage. Despite the impressive personnel growth figures, the ratios of medical staff to that of the population fell short of the WHO norms. Counties experienced such challenges as inadequate, poorly distributed and in some instances, not adequately trained human resource, non-conducive work environment and high turnover rates. Further, staff retention was difficult while the rampant health

workers' strikes was threatening gains made in health outcomes.

Analysis of health infrastructure revealed that county referral hospitals were being upgraded in most counties in addition to construction of lower level facilities such as dispensaries. While this has improved the average density of facilities, Kenya is far from attaining the norm. In addition, there are disparities across the counties in the availability and distribution of lower level facilities, including health centres, dispensaries and community units as compared to higher level (tertiary and secondary referrals) facilities. This distribution penalizes the poor who are served by these facilities.

The study assessed the availability and functionality of medical and non-medical equipment and medicines in health facilities and established that all counties were relatively well equipped with basic medical equipment. County health facilities were reported to have essential medicines, vaccines and contraceptive commodities, with health centres relatively better than district hospitals and dispensaries. However, non-medical equipment such as refrigerator were inadequate in most facilities. Other challenges reported include mismatches of drugs availability across facilities, inadequate expertise on operating some specialized equipment, and poor maintenance of medical equipment.

With the significant investments, nationally, there was improved satisfaction with the delivery of health services following devolution of health. However, the level of public participation in planning and budgeting was low due to weak structures and lack of information on how to be involved.

10.2 Recommendations

Kenya is on the path to achieve some of the SDG health targets. However, there are wide regional (county) disparities, and disease burden has increased mainly driven by the rise in the incidence of cancer, hyper-tension, diabetes and other non-communicable diseases. Interventions to enhance the performance of the health sector, including the universal healthcare programme needs to rope in strong preventive measures to stem the worsening disease burden. Regional disparities call for differentiated and well-targeted interventions to under-performing counties and regions. Performance of the sector will hinge crucially on the rollout of innovative programmes that reach poor households, given the overall context of relatively high poverty rates in Kenya.

The main challenge contributing to low public participation was limited access to information by citizens on how they can engage with county duty bearers as well as lack of structures for health public participation to guide the process. To enhance public participation in the health sector at county and sub-county

levels, counties need to develop and implement public participation frameworks for health at county, sub-county and ward levels. The framework should adopt effective and efficient means of communication; build capacity of the county official to facilitate productive engagement; allocate adequate budget for public participation; improve civic education; and strengthen monitoring and evaluation of health programmes across counties.

Healthcare financing strategies play a key role in determining the adequacy of health services provided and the attainment of health goals. Although budgetary allocations have increased, they remain below the 15 per cent recommended by the African Union, and there are significant disparities across the counties. Given the limited resource envelope, a quick win to improve health outcomes would be to allocate available resources rationally, reduce wastage and enhance efficiency. This can be achieved by strengthening public finance management at county level.

The social health insurance system which is prioritized in reducing the financing burden at household level needs to be complemented with innovative financing options, including the private sector insurance and community preventive health initiatives. It is important to support health financing initiatives with an appropriate legislative framework such as making registration for social health insurance mandatory at early stage in life, defining the health problems obliged to cover, and targeting safety nets including to those in the informal sector.

The delivery of better health services and outcomes requires adequate, skilled and equitably distributed human resources for health (HRH). Addressing the human resource challenges requires a comprehensive approach encompassing policy, education/training, leadership and stewardship, finance, partnership and better human resources management. It is important to strengthen human resource planning and management practices, provide for better working conditions, and promote integrated planning. Better working conditions can be achieved by investing in both physical and social infrastructure. The key investments are required in rehabilitating and equipping existing health facilities, and improving social amenities at the counties. It will also be necessary to: create/implement policies that enhance career progression, collaboratively execute a comprehensive training needs assessment, and embrace technology to overcome the physical barrier to on-job training.

On health infrastructure, there is need to set aside a budget for repair, maintenance and operation of existing and new health infrastructure and equipment. The country health infrastructure and equipment needs regular routine maintenance of key installations, equipment and infrastructure that have exhausted their working life span. Further, the budget should incorporate the human resource who are tasked with operating new equipment and its associated routine maintenance. County

and national governments should take a coordinated action in procurement of managed medical equipment.

On essential medicines for mothers and children, the county governments should revisit their procurement and distribution arrangement considering the shortages of key lifesaving medication. If the country is to reduce its infant and maternal mortality rate, counties and KEMSA should ensure efficiency on supply chain management based on needs and have alternative options to order drugs while ensuring principles of economy, timeliness, quality and rational use.

Finally, it is important to note that effective healthcare delivery requires strong linkages with other sectors, notably improved access to quality nutritious food, education and amenities such as electricity, improved water and sanitation. It would therefore be important for counties to adopt a comprehensive and integrated approach in delivery of Universal Health Care (UHC). The key strategic sectors where health can draw some synergies from include agriculture, education, infrastructure, transport and economic services, environment, water and sanitation.

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