

Laying The Foundation For A Robust Health Care System In Kenya

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KENYA PUBLIC EXPENDITURE REVIEW

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
AIE	Authority to Incur Expenditure
ART	Antiretroviral Treatment
BIA	Benefit Incidence Analysis
CRA	Commission on Revenue Allocation
DEA	Data Envelop Analysis
DFID	Department for International Development
DMUs	Decision Making Units
DPHK	Development Partners for Health Kenya
EAC	East African Community
FBO	Faith Based Organization
FY	Financial Year/Fiscal Year
GDP	Gross Domestic Product
GoK	Government of Kenya
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HSSF	Health Sector Services Fund
IMR	Infant Mortality Rate
ITNs	Insecticide-Treated Nets
KDHS	Kenya Demographic and Health Survey
KEMSA	Kenya Medical Supplies Agency
KIHBS	Kenya Integrated Household Budget Survey
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KM	Kilometer
KNBS	Kenya National Bureau of Statistics
KSH	Kenya Shillings
MICs	Middle Income Countries
MMR	Maternal Mortality Rate
MoU	Memorandum of Understanding
MTEF	Medium Term Expenditure Framework
NGO	Non-Governmental Organization
NHIF	National Hospital Insurance Fund
OOP	Out-of-Pocket
PETS	Public Expenditure Tracking Survey
PHMs	Public Health Midwives
SDI	Service Delivery Indicators
SSA	Sub-Saharan Africa
TB	Tuberculosis
TE	Technical Efficiency
THE	Total Health Expenditure
UMR	Under-five Mortality Rate
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WDI	World Development Indicators
WHO	World Health Organization

FOREWORD

The health sector in Kenya is undergoing far-reaching transformation as service provision for health services is devolved to the county level. Amid this transition, health outcomes and utilization of health services have improved significantly: child mortality has reduced, more children are being immunized, and the impact of communicable diseases has lessened. But not everything is rosy: communicable diseases, maternal and perinatal conditions are responsible for the biggest disease burden in Kenya. Absenteeism by health personnel and knowledge practice gaps are also undermining efficiency of the sector.

This health sector review expenditure and policy review provides a baseline assessment on the equity, efficiency and effectiveness of health provision. It observes that while total health expenditure has increased in recent years, almost a third of that spending is from out-of-pocket payments by individuals and households. And while the government has taken measures to increase the share of expenditure in primary health care, public health expenditure is stagnant and remains lowest in the region.

The policy note offers suggestions for increasing efficiency and equity to create a more robust health system. Overall, reduce reliance on out-of-pocket payments and move towards pre-payment solutions financing mechanisms; increase preventive primary health care expenditure; and harmonize donor support for the sector.

Devolution also provides a unique opportunity to address long-standing inefficiencies as well as inequities. County governments have an opportunity to address historical inequities in access to health services. Counties can also benefit from effective sharing of resources (networked hospitals) rather than new investments (building new hospitals). And incentives need to be created for health staff, and health facilities equipped with adequate essential medicines and supplies. The sector should adopt cost effective preventive care interventions to enhance service delivery and improve health outcomes.



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KEY MESSAGES

This review offers suggestions for increasing efficiency and equity to create a more robust health system:

Increase public funding to the health sector, particularly for primary health care. Public expenditure on health in Kenya has increased only in nominal terms during the past decade. Public health spending as a share of total government expenditure is low by regional and global standards. However, even at the current levels of spending the country can achieve better outcomes by addressing underlying inefficiencies and inequities.

Reduce reliance on out-of-pocket payments and move towards pre-payment financing mechanisms. Out-of-pocket (OOP) payments account for over a third of total health expenditure. The OOPs are inefficient, inequitable and contribute to households' poverty and impoverishment. Increasing the share of tax funds allocated to the health sector and promoting health insurance can offer financial risk protection for the population.

Mainstream, integrate and harmonize donor support. Donor support to health sector nearly doubled over the past decade and now contributes about a third of the total health expenditure. A large part of such financing is off-budget and targets few major communicable diseases. This approach undermines strategic prioritization and will have contingent liabilities on the government when the donors exit.

Devolution provides a unique opportunity to address long standing inefficiencies as well as inequities.

County governments now have an opportunity to address historical inequities in access to health services. There are significant disparities in access to health services. One possibility for county governments to increase access within the limited fiscal space is to formulate partnership frameworks with 'private not-for-profit' providers who already have infrastructure and staff on the ground and who are relatively more efficient than public providers.

Create appropriate incentives for health staff and equip health facilities with adequate Essential Medicines and Medical Supplies (EMMS) needed to provide quality care. Absenteeism and knowledge practice gap are some of the sources of inefficiencies in Kenya's health sector. County governments need to create incentives for staff to be present at work during scheduled times and also address knowledge practice gaps, while ensuring that the required resources are in place to enable good practice.

Counties can benefit from effective sharing of resources (networked hospitals) rather than new investments (building new hospitals). Rather than invest in high-end curative infrastructure in each county, county governments within the same region can identify effective ways of sharing resources, for example, by networking hospitals to provide high quality care across several neighbouring counties.

Adopting cost effective preventive care interventions to improve service delivery is also critical. In this regard, cost effective approaches adopted by Sri Lanka offer some useful insights. The country has achieved remarkable health outcomes and is considered good practice in health delivery.

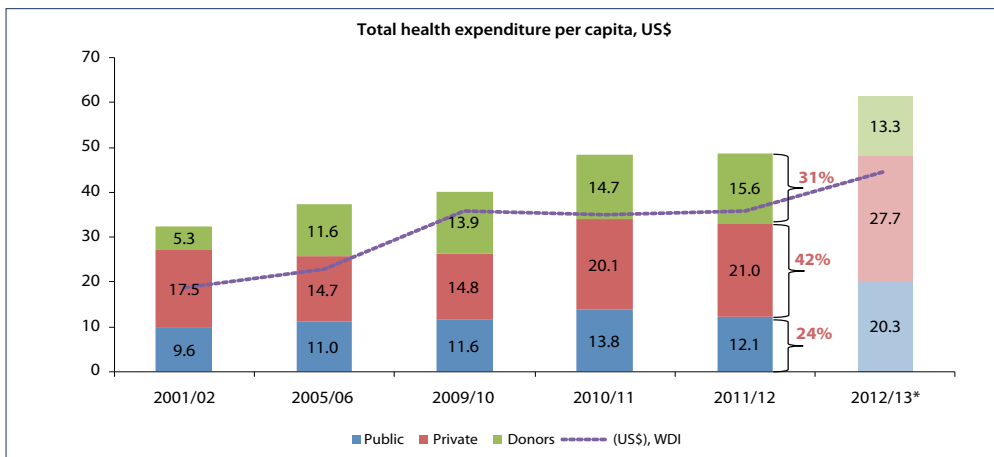
EXECUTIVE SUMMARY

Kenya's total health expenditure has increased in the recent years and now is in the range of US\$ 50 per capita (Figure 0.1).¹ A review of recent aggregate health expenditure shows that total per capita expenditure increased from US\$ 32.4 in 2001/02 to about US\$ 50 in 2011/12. The level of spending now surpasses the WHO benchmark of US\$ 42² per capita spending and exceeds the levels of spending in the EAC countries except Rwanda.

A significant share of health expenditure is in the form of out-of-pocket (OOPs) payments; households account for about one third of total health expenditure. The review shows that total private spending on health increased from US\$ 17.5 per capita in 2001/02 to US\$ 21 in 2011/12. The contribution by donors, on- and off-budget, has also increased from US\$ 5.3 per capita to about US\$ 15 during this period. OOP payments are inequitable, are a major barrier to access, and contribute towards household poverty and impoverishment.

Public health expenditure has stagnated and remains low even by regional standards. Public expenditure per capita has stagnated in the range of US\$ 12 and accounts for about a quarter of total spending on health which averages to 1.2 percent of GDP.³ The sector spending accounts for 6 percent of total government expenditure and is one of the lowest shares in the EAC region.

Figure 0.1: Health expenditure per capita has increased but a significant share is borne by households



Source: Staff computations based on The National Treasury budget data (various years); NHAs (2009/10); World Bank (WDI database, 2013); and WHO (GHE database, 2014).

The government has taken measures to increase the share of expenditure in primary health care. The government introduced the Health Sector Services Fund (HSSF) to increase the share of funding for primary health care and to ensure timely flow of resources to the facilities. However, Level 4 and 5 hospitals remain key drivers of curative expenditure in the sector, which amounts to about a third of total public health expenditure.

¹ This aggregate spending includes off-budget donor funding.

² This benchmark is dated and more recent literature pegs it at US\$ 62.

³ Based on the rebased GDP series.

The current pattern of spending presents three main challenges which undermine efficiency in the sector. (i) High level of OOP payments increase the burden of care by households; are inequitable, inefficient and a barrier to access by the poor; (ii) the high share of off-budget donor funding undermines strategic prioritization, it is disease focused, does not support health system strengthening and has potential contingent liabilities on the government when donor funds decline. Under the current devolved system of government, donor funding is likely to be more fragmented unless there is stewardship from county and National governments to ensure that donors support is aligned to local priorities; (iii) heavy reliance on OOP payments and donor funding undermines financial risk and income cross-subsidization, which are critical for the country's progress towards universal health coverage.

Absenteeism by health personnel and knowledge practice gaps undermine efficiency of the sector. Public health providers are relatively less efficient compared to private and faith-based providers. A 2012 Public Expenditure Tracking Survey (PETS) survey revealed that doctors recorded the highest level of absenteeism at 38 percent, followed by clinical officers at 36 percent and nurses at 30 percent. However, about 88 percent of the cases were sanctioned, and 50 percent had given no reason for absenteeism. The study also estimated diagnostic accuracy at 72 percent which is high even by global standards, but the full treatment after diagnosis is much lower, under 50 percent.

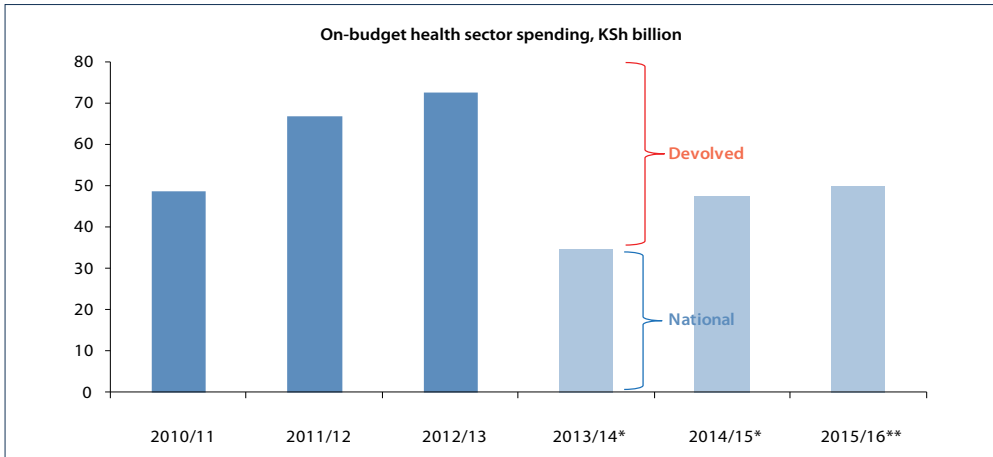
Recent reforms offer hope that the performance of the sector could improve going forward:

The abolition of user fees at primary health care facilities will ease the burden of care for households and increase total public spending on primary health care services, which are more efficient and equitable. The current government abolished user fees at dispensaries and health centers in 2013, and has provided funding to compensate health facilities for the revenue lost from user fees. This budget provision has increased from KSh 700 million in 2013/14, to about KSh 1.7 billion in the MTEF period (2014/15 - 2016/17).

Devolution of the health sector creates opportunities to address historical inequities in access to health services. Delivery of health services is now fully devolved to the 47 county governments. The sector accounted for about 40 percent funding of devolved functions in the 2012/13 budget, about KSh 54 billion.

Increase the share of health expenditure in county budgets. About two thirds of the sector budget has been devolved to county governments. Available data suggests that total public expenditure on health declined in 2013/14 as counties take over the sector (Figure 0.2). Annual projections based on half-year expenditure suggest that total county expenditure on health could reach KSh 42 billion (including salaries paid by the national government for health staff working under county governments), which falls short of the KSh 54 billion marked as devolved health sector functions in the 2012/13 budget.

Figure 0.2: Counties need to budget effectively for health care



Source: The National Treasury budget (various years)

County governments can adopt cost effective approaches and the Sri Lanka model provides a good case study. The country achieved remarkable health outcomes in a cost effective way, and is considered 'good practice' in health care delivery. Sri Lanka spends 1.5 percent of GDP on health and success has been attributed to: political will to prioritize and sequence investments in health starting with primary health; increasing access in underserved areas and free provision to the poor; and, focusing on the most appropriate field based interventions. Most notable is the recruitment and training of a large number of community-based midwives who provide maternal and child care to their own communities. Sri Lanka's public health system is also funded fully through tax revenue, offering financial risk protection to all citizens, which is particularly important for the poor and vulnerable.



INTRODUCTION

In an effort to increase equity in access to services, health provision has now been devolved to county governments. Geographic disparities in access to health care in Kenya are unacceptably high. For instance, in Wajir County, only 12 percent of deliveries are assisted by a skilled health worker, compared to 94 percent in Nyeri, the best performing county. Likewise, only 47 percent of children were fully immunized in Wajir compared to 93 in the Nyeri in 2011.

County governments inherited a sector with a mixed performance— remarkable improvements stand side by side with sluggish performance. Favorable trends can be observed in infant mortality, life expectancy, TB, HIV, and malaria control. However, these gains contrast sharply with trends for high maternal mortality, stunting and malnutrition where progress has stagnated and, in some cases, reversed over the recent years. The emergence of lifestyle diseases like cancer, diabetes and high blood pressure further compound the strain on the burdened health system.

Devolution could deliver the health dividend if county governments address underlying inefficiencies in the health system that undermine access and quality of care. These include spatial distribution of health personnel, budget allocations between and by levels of care, absenteeism by health personnel, low budget absorption, and delays in replenishment of drugs, among others.

This health sector expenditure and policy review note provides a baseline assessment on equity, the efficiency and effectiveness of health provision. The review is framed along the following broad question areas: (i) how has Kenya's public expenditure and revenue developed over the past decade? are the levels of funding adequate to meet the health needs of the Kenyan population? (ii) Are health outcomes commensurate with the level of inputs? (iii) How has public expenditure patterns changed with devolution? and (iv) how can county governments improve health service delivery by using existing resources more efficiently?

This review starts with a discussion of health outcomes and the disease burden in Kenya, and provides an overview of the health system. The funding structure and aggregate spending in the sector is also presented, benchmarking Kenya against regional comparators. The note also summarizes efficiency in the sector by level of care and type of provider. Devolution of the sector offers opportunities and challenges, which are presented in the last sections of the review.

2.1 Health outcomes and disease burden

Kenya has made significant progress in improving health outcomes and utilization of health services. Notable reduction in child mortality has been achieved, and the burden of major communicable diseases has been effectively reduced during the past decade. Infant and under-five mortality declined by nearly a third during the period 2003 to 2008 (see Table 4.1). During the same period, the proportion of children fully immunized increased by a tenth. Recent data suggests that the prevalence of HIV among adults declined from 7.2 percent in 2007 to 5.7 percent in 2012. Out of the 25 most important causes of burden, as measured by Disability-Adjusted Life Years (DALYs), lower respiratory infections showed the largest decrease, falling by 21 percent from 1990 to 2010.

Communicable Diseases, maternal and perinatal conditions continue to be leading causes of the disease burden in Kenya. HIV/AIDS dominates the disability adjusted life years lost, followed by conditions arising during perinatal period, lower respiratory tract infections and diarrheal diseases. However, hospital data suggest that Non-Communicable Diseases (NCDs) account for 50–70 percent of all hospital admissions and up to 50 percent of all inpatient mortality. The current total annual mortality is estimated at approximately 420,000 people, out of which 270,000 (64 percent), 110,000 (26 percent) and 40,000 (10 percent) are due to communicable diseases, NCDs and injuries, respectively. It is projected that, by 2027, Kenyans will suffer more from NCDs than communicable diseases, even when injuries are excluded. Communicable diseases would decline to 140,000 (39 percent), while NCDs and injuries would be 170,000 (47 percent) and 60,000 (14 percent), respectively.¹

2.2 Health infrastructure

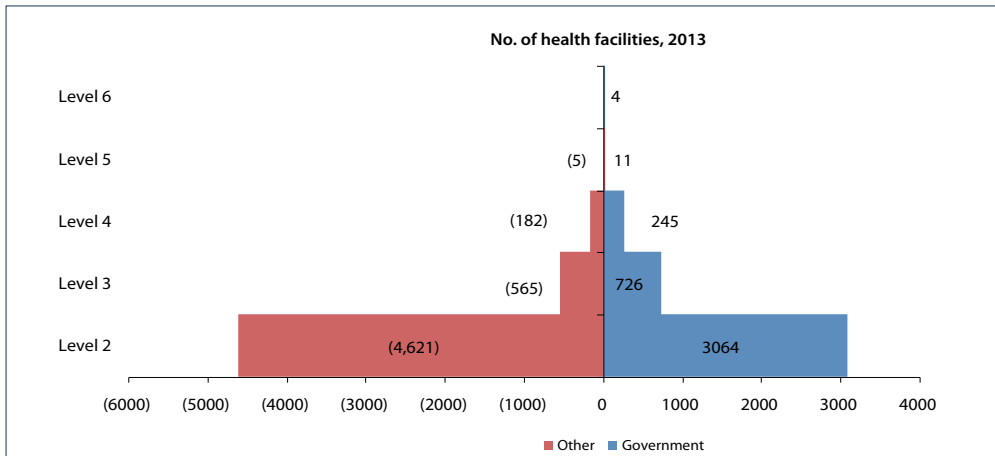
Kenya has a well-developed health infrastructure network covering more than 9,000 facilities, structured across six levels of care. About 80 percent of these facilities are at Levels 2 and 3, focused on primary health care, and include community health facilities, dispensaries and health centres. Levels 4 and 5 comprise secondary health facilities (district, sub-district and provincial hospitals) which provide specialized services. Level 6 facilities are highly-specialized tertiary hospitals (referral hospitals) and provide health care, teaching, training and research services. Figure 2.1 shows the health care system pyramid, split by government and other providers.

The health care system reflects a good mix between public and private provision. However, private and faith-based organizations (FBOs) are mainly concentrated at primary health care level, where their network of facilities is much larger at 60 percent, compared to government run facilities (about 40 percent). FBOs account for about 13 percent of health facilities available at Level 2, and 16 percent and 15 percent at Levels 3 and 4, respectively. The number of facilities managed by

¹ Ministry of Health, 2013 (Kenya Health Policy 2012 – 2030).

FBOs are fewer at higher levels of care. Other providers include private enterprises, community-owned and institution specific providers, for example, University staff health clinics (Annex 1).

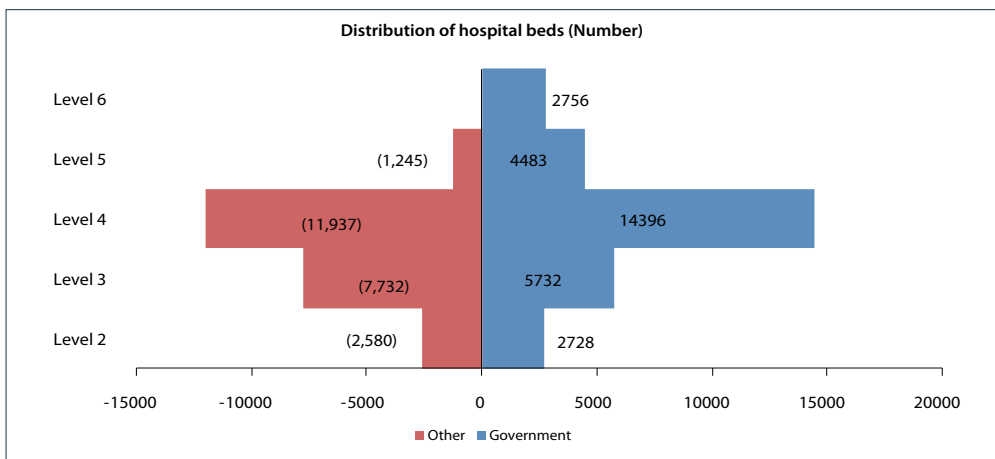
Figure 2.1: Structure of Kenya's health care system



Source: www.ehealth.or.ke (2013) data

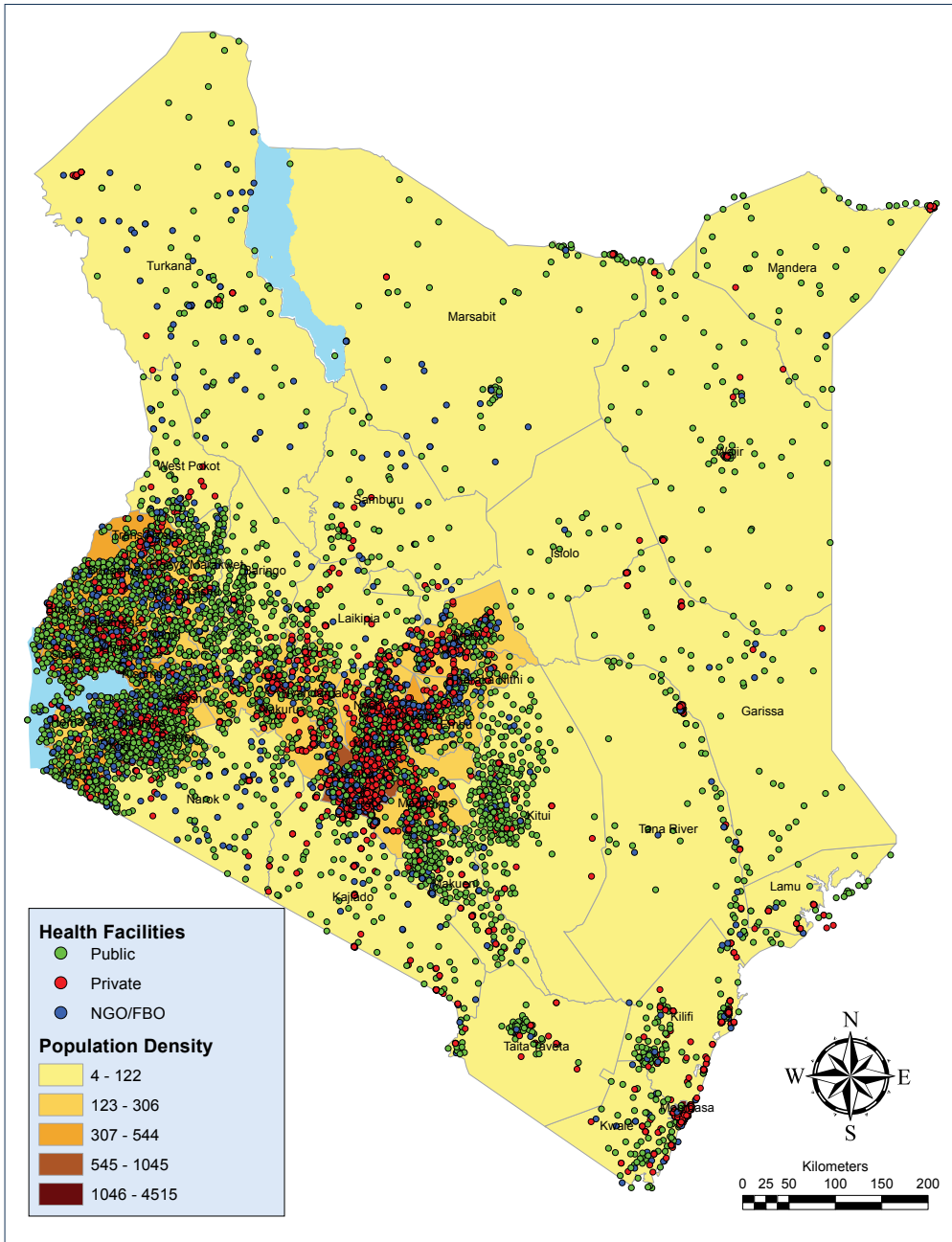
About half of the available hospital beds in Kenya are Level 4 care facilities (Figure 2.2). The health system has about 54,000 bed capacity (as at 2012) and also reflects a heavy public presence in the higher levels of care. This structure drives government expenditure and might explain the differences in efficiency between public and private facilities, discussed in forthcoming sections. At Level 5, for instance, the government provides 78 percent of the hospital beds available in the country. Of critical concern is the number of beds in public Level 2 and 3 facilities, which are often not used optimally, despite the government's efforts to allocate financial and human resources to this level of care.

Figure 2.2: Number of hospital beds by levels of care



Source: www.ehealth.or.ke (2013) data

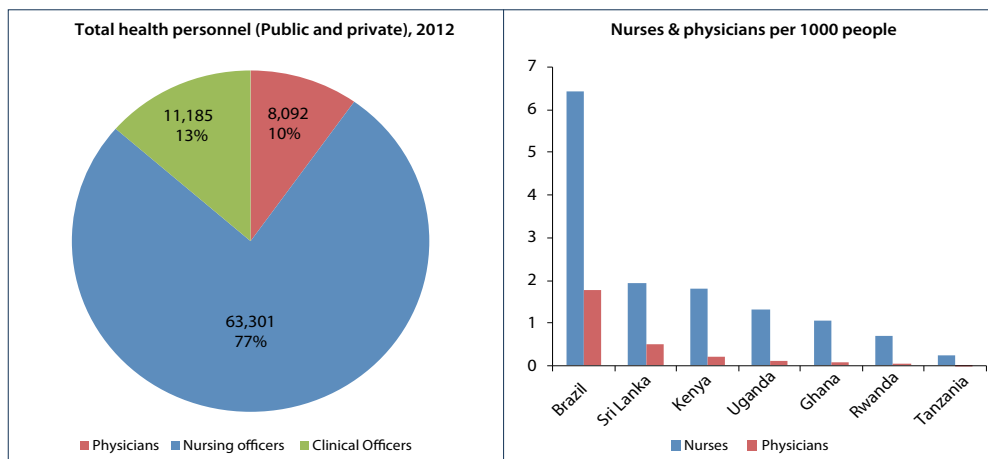
Figure 2.4: Distribution of health facilities by type of provider
(background color coding reflects population density)



Source: www.ehealth.or.ke (2013) data

Availability of health personnel would appear not to be the main challenge in Kenya. The challenge lies in the geographical distribution of health workers across counties (Section 4.3) and staff incentives as demonstrated by high rates of absenteeism (Section 5.1). By 2012, Kenya had a total of 82,000 health personnel of which three quarters were nurses and about 10 percent physicians (see Annex 2 for different categories). These numbers translate to 1.6 nurses and 0.2 physician per 1,000 people and about 7 nurses per physician (Figure 2.5). Although the ratios are below WHO recommendations, they are comparable to staffing levels in other African countries. Of interest is that the number of nurses and physicians in Kenya compare to that of Sri Lanka, which has recorded significantly better health outcomes, with almost similar levels of investment (Section 4.5), while Brazil has achieved comparable health outcomes to Sri Lanka with more than double investments in health workers.

Figure 2.5: Total health personnel in comparison



Source: www.ehealth.or.ke (2013) data

2.3 Aggregate levels of spending³

Total health expenditure per capita increased in the last decade from about US\$ 30 in 2002 to about US\$ 50 in 2012 (see Figure 2.6). The government, development partners and households are the main sources of health care funds in Kenya. The average total per capita expenditure for the last three years where data are available (2009 - 2012) shows that average expenditure per capita was US\$ 46, of which government contribution was US\$ 12, US\$ 19 from households and about US\$ 15 from development partners.⁴

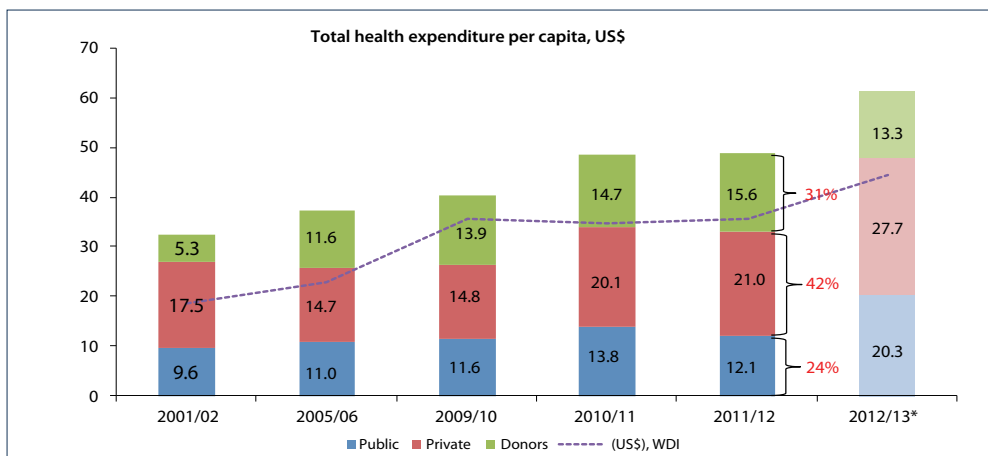
Government expenditure on health has increased in absolute terms but its relative share in total spending has declined. Health budget allocation has increased fourfold in absolute terms, from KSh 18.3 billion in 2002/03 to KSh 87 billion in 2012/13. However, government health spending as share of the total budget has declined and averaged only 6 percent in the last decade. There is no globally accepted standard on health budget as a share of GDP, but it is widely accepted that public level spending of 5 percent is required for a country to make significant progress towards Universal Health Coverage; Kenya's public health spending stood at 1.2 percent of GDP on average in 2009/10 to 2011/12. The WHO provides a national

³ Total health expenditure in this section includes off-budget donor funding.

⁴ The WDI has slightly lower figures of total health expenditure per capita.

benchmark of US\$ 42⁵ expenditure per capita needed to provide a basic package for health, while the Abuja Declaration committed governments to spend at least 15 percent of their total budget on health care. In the Kenyan case, the aggregate WHO target has been met. However, about 74 percent of these funds are from households through OOP payments and donor funding, which are fragmented and do not allow for risk pooling and income.

Figure 2.6: Health expenditure per capita has increased but a significant share is borne by households



Source: Staff computations based on The National Treasury budget data (various years); NHAs (2009/10); World Bank (WDI database, 2013); and WHO (GHE database, 2014)

The policy to abolish user fees at primary health care facilities could ease the burden of health expenditure for households. Following this policy, the government made a provision of KSh 700 million in the 2013/14 budget to compensate primary health care facilities for revenues lost from user fees. This policy is likely to change the structure of total health care expenditure, although the implications for service delivery and access to health care services remain unclear. The policy is discussed in greater details in Section 7.

2.4 Sources of finance⁶

Private health spending contributes the largest share of health care financing (Figure 2.7). Private health expenditure accounted for about 42 percent of total funding for the sector. Public expenditure contributes about one quarter of the funding and accounted for 24 percent of total health financing in 2011/12, a decline from 29 percent in 2009/10. The rest of the share is from donors and non-government organizations. Table 2.1 provides detailed data on the funding structure for the sector.

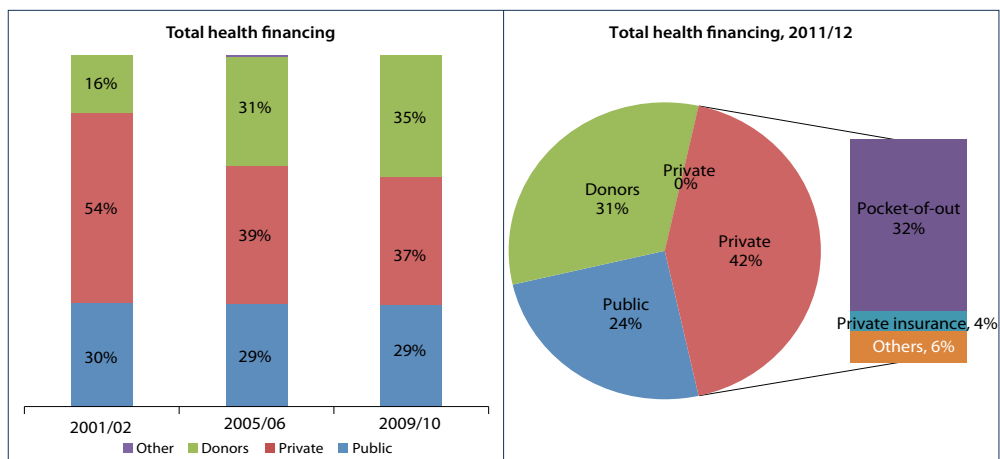
Donor funding accounted for 31 percent of total health expenditure in 2011/12. However, a significant share of the funding is off-budget which could undermine strategic prioritization and future sustainability of health programmes. In 2011/12, off-budget donor funding accounted for 22 percent of the total health finances, equivalent to over 60 percent of total donor funds (Figure 2.10). A significant share of this funding is for HIV/AIDS supported by the United States government through the President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund to fight

⁵ This benchmark is dated and more recent literature pegs it at US\$ 62.

⁶ Total health expenditure in this section includes off-budget donor funding.

HIV/AIDS, Tuberculosis and Malaria. In 2009/10, spending on HIV/AIDS accounted for 24.4 percent of total health expenditure, equivalent to 1.3 percent of GDP.⁷ The rest of the funding is mainly spent on malaria, TB and immunization.

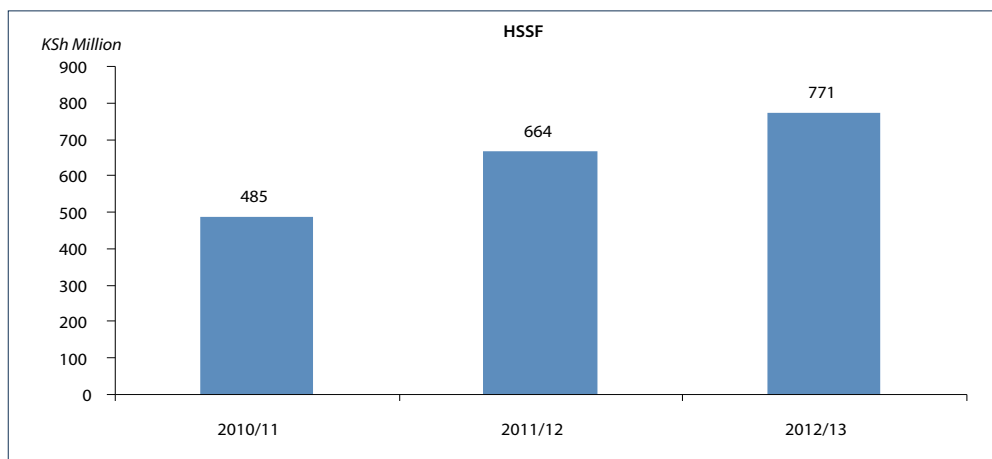
Figure 2.7: Sources of health financing in Kenya



Source: Computations based on The National Treasury budget data (2011/12); NHAs (2009/10); and WHO Global Health Expenditure database (2014)

The HSSF is an integral part of 'on-budget' donor funding and accounts for 1.4 percent of total public health expenditure, equivalent to about 0.3 percent of total health care expenditure. Health financing through HSSF, a program supported by the World Bank and DANIDA, averaged KSh 640 million in the period 2010/11 - 2012/13 (Figure 2.8).⁸ Through the HSSF, each dispensary received KSh 27,500 per quarter, while health centres received KSh 112,500 and District Health Management Teams (now County Health Management Teams) between KSh 131,500 and KSh 157,500, each per quarter. HSSF funds were transferred to primary health facilities through a phased implementation starting with health centres in October 2010 and dispensaries by end 2011. Following devolution, the flow of HSSF funding has been adopted to conform with Constitutional requirements. Under the new arrangement, counties will receive HSSF funds as conditional grants from the Ministry of Health.

Figure 2.8: HSSF averaged KSh 640 million in the last 3 years



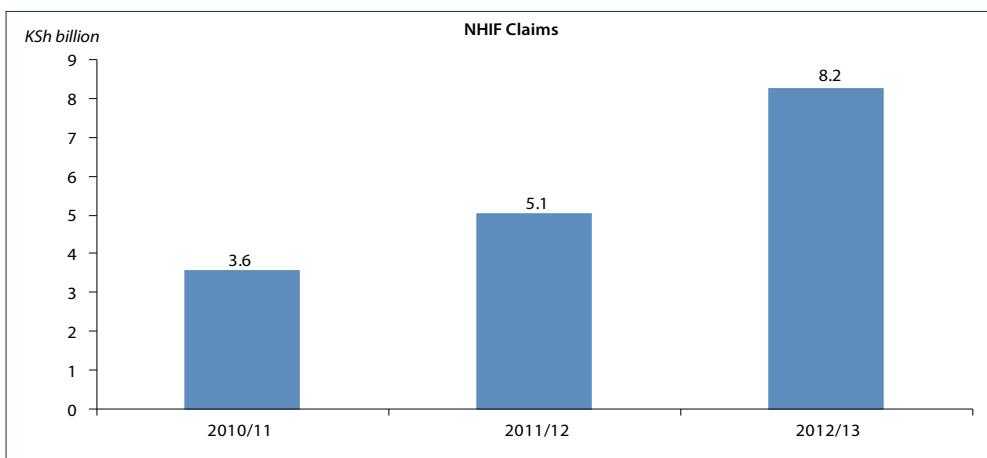
Source: Computations based on Ministry of Health and NHIF data

⁷ Kenya National Health Accounts, 2009/10.

⁸ See for details on HSSF.

The National Hospital Insurance Fund (NHIF) claims disbursed have more than doubled in the last three years (Figure 2.9). The NHIF reimbursements to hospitals amounted to KSh 5.1 billion in 2011/12 and increased to KSh 8.2 billion in 2012/13. The NHIF is funded through membership contributions which is compulsory to all employees working in the formal sector and voluntary to those in the informal sector. NHIF members and their dependents can access comprehensive inpatient services in all public health facilities, but co-payment is required for individuals seeking care in private health facilities. In 2012, the government introduced the Civil Servants Scheme, managed by NHIF, to provide comprehensive outpatient and inpatient cover for civil servants and the military, and up to four dependents, and The Scheme is funded through government allocations and medical allowances, previously paid to members on a monthly basis, amounting to KSh 4.2 billion in 2012/13.

Figure 2.9: NHIF claims more than doubled in the last 3 years



Source: Computations based on Ministry of Health and NHIF data

Table 2.1: Sources of finance for the health sector (KSh million)

	2009/10	2010/11	2011/12	2012/13*	2013/14*	2014/15**
Public expenditure/ ¹ (GoK)/ ²	35,382	46,040	45,679	72,361	..	..
National government	..	..	..	..	27,836	47,362
County governments	..	..	..	..	42,069	..
Private expenditure/ ³	45,087	66,876	79,204	100,675	..	..
of which out-of-pocket	..	51,252	60,726	77,451	..	..
private insurance	..	6,245	7,399	9,437	..	..
others	..	9,379	11,079	13,787	..	..
Donor funding/ ⁴	42,384	48,830	59,079	48,357	..	..
of which on-budget	..	11,337	18,343	..	..	..
off-budget	..	37,493	40,736	48,357	..	..
Other sources	-	3,568	5,056	8,236	..	..
of which NHIF claims (actual)/ ⁵	-	3,568	5,056	8,236	..	..
Total Health Expenditure (THE)	122,854	165,313	189,018	229,630	69,905	47,362
% of GDP (Rebased GDP series)						
Public	1.2	1.3	1.1	1.6	..	..
Private	1.5	1.9	2.0	2.2	..	..
Donors	1.4	1.4	1.5	1.1	..	..
Total	4.1	4.7	4.6	4.9	..	..

../ Data not available; * provisional; **projections

¹ excludes on-budget donor funding except for 2012/13

² Source: National Health Account report 2009/10 and Approved Budget data from The National Treasury

³ Source: National Health Accounts, WHO Global Health Expenditure database (2014)

⁴ Source: Development Partners for Health Kenya (DPHK) and Approved Budget data from The National Treasury

⁵ Source: National Health Insurance Fund data

Aggregate funding profiles mask differences in the sources of funding by level of care. The funding profiles differ by levels of care and although detailed data by level of care are not easily available, the 2012 Public Expenditure Tracking Survey (PETS)⁹ data show that user fees has been the main source of operation and maintenance (O&M) expenses for both primary and secondary health facilities (Figure 2.11). User fees contribution in dispensaries and health centres amounted to 56 percent and 48 percent of O&M expenditure, respectively (Figure 2.11). These funds are mainly used for purchasing out-of-stock drugs and other medical supplies, wages for casual staff at the facility level, nutrition and other operating costs (Figure 2.12).

With devolution, abolition of user fees at primary care level, and provision of free maternity care, health funding profile will change. Decentralization of the health system, abolition of user fees at dispensaries and health centres, and the provision of free maternity services in all public health facilities provide an opportunity to change the health financing architecture in Kenya. However, there is need for timely flow of funds from the national and county governments to health facilities, clear guidelines on how conditional grants should be used and vigorous monitoring and evaluation frameworks. Annex 4 presents the history of reforms in health financing.

⁹ See annex 6 for an overview of Public Expenditure Tracking Surveys (PETS) in Kenya.

Figure 2.10: Large share of health donor fundings off-budget

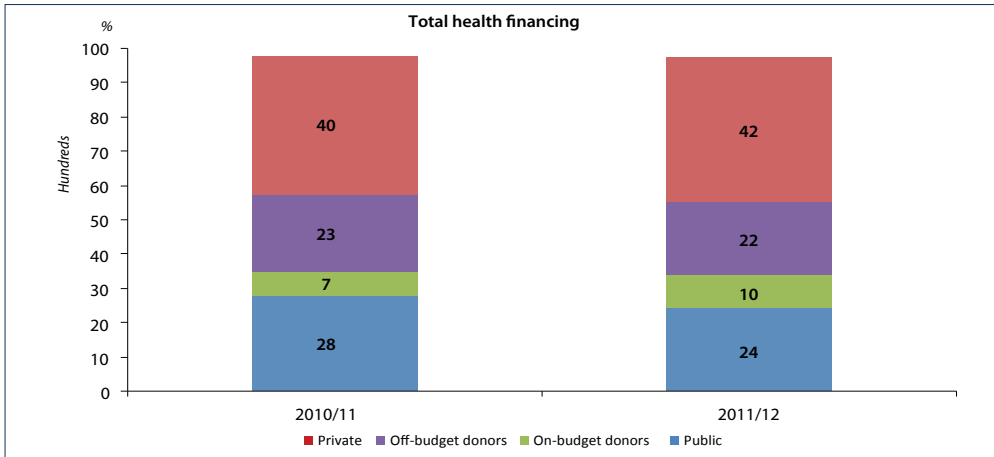


Figure 2.11: Sources of financing O&M at facility level

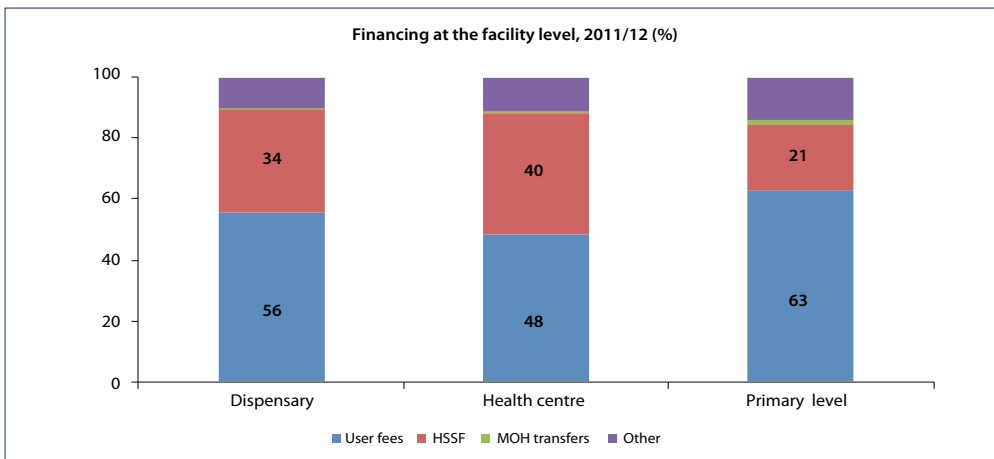


Figure 2.12: User fees are mainly used for drugs, nutrition and casual staff



Source: Computations based on National Treasury budget (Various years) and PETS++/SDI (2012) data

EQUITY AND EFFICIENCY: A FRAMEWORK OF ANALYSIS

Allocative efficiency is 'doing the right things' and technical efficiency is 'doing things right'

Literature identifies various approaches in assessing the performance of a health system: effectiveness, equity, allocative efficiency, and operational efficiency or technical efficiency (Kruk and Freedman, 2008). Allocative efficiency assesses the strategic prioritization of spending across sectors, for instance, health expenditure vis-à-vis other types of expenditure. At a micro level, allocative efficiency is about strategic prioritization within a sector, for example, relative allocation to curative versus preventive care. Technical efficiency measures the relationship between inputs and the volume of service provided, to assess whether services are provided at the least possible cost.

Effectiveness of spending analyses the relationship between inputs and outcomes. Some of the questions to address in this regard include: (i) are health inputs designed to match needs in the country? (ii) do services reach intended beneficiaries? Public Expenditure Tracking Surveys (PETS) is one of the approaches used to estimate the effectiveness of public spending.

3.1 Efficiency measures

Macro allocative level efficiency: At the aggregate level, this note reviews the share of health sector budget in total government spending and how it has evolved over time. The review benchmarks Kenya against other countries comparing inputs and achieved outcomes. Sri Lanka which is considered good practice in health care provision is presented as an example from which Kenya can draw some useful lessons. Sri Lanka has been chosen because of its success in using cost-effective primary care interventions to address health challenges.

Micro level allocative efficiency: To assess the efficiency in the use of resources within the health sector, this note analyzes the relative shares between recurrent and capital expenditure, and the relative shares by economic and functional classification.

Technical efficiency:

Technical efficiency is also analyzed from two angles; by level of care and at subnational level. Data envelop analysis (DEA) is a commonly used approach to measure technical efficiency. The World Bank commissioned a background study to estimate technical efficiency by levels of care in both the public and private sector. The study was based on a random sample of 24 district hospitals, 295 health centres and 38 dispensaries and used input and output data for 2012. The study used Data Envelope Analysis (DEA) to estimate technical efficiency at health facility level (see Annex 5 for a detailed presentation of DEA methodology), using five inputs summarized in Table 3.1. The findings from the study are presented in section 4.4.

Table 3.1: Inputs and outputs used in estimating technical efficiency

Inputs	Outputs
Total expenditure on pharmaceutical and non-pharmaceutical supplies	Inpatient admissions for delivery female fibroids, cancer, inpatient caesarean services.
Doctors and consultants	Inpatient admissions for malaria and diarrhea.
Nurses and clinical officers	Inpatient admissions for TB, newly enrolled AIDS patients.
Other staff	Outpatients for chronic conditions including diabetes, hypertension, pneumonia.
Hospital beds as proxy for capital	Other outpatient cases including diarrhea, malaria.
	Outpatient ART and related conditions

3.2 Outcome indicators

A range of inputs, outputs and outcomes can be used to measure efficiency in health care delivery. However, literature identifies a set of indicators that are commonly used to assess the overall performance of health systems in developing countries. These commonly used indicators include: infant mortality rate (IMR), maternal mortality rate (MMR), under five mortality rate (UMR), pre/neonatal mortality, low birth weight and the incidence of infectious diseases. The choice of these indicators is justified on the grounds that these outcomes are not influenced by access to other non-health exogenous factors. The outputs and outcomes indicators are presented in Table 3.2.

Table 3.2: Selected indicators for assessing the performance of health systems in developing countries

Outputs (access)	Outcomes (health status)
Effectiveness	
Availability <ul style="list-style-type: none"> Physicians, nurses, hospitals per 1000 population Basic and Comprehensives Emergency Obstetric Care per 500,000 of the population Percentage of the population within 5 km of a health facility 	Infant mortality Under five mortality Maternal mortality
Utilization <ul style="list-style-type: none"> Anti-retroviral treatment for HIV/Aids patients TB case detection rates Proportion of children aged under five years and pregnant women sleeping under an Insecticides Treated Net Antenatal care visits Deliveries by a skilled birth attendant 	
Continuum of care <ul style="list-style-type: none"> Full immunization rates Proportion of pregnant women making at least four ANC visits 	
Equity	
<ul style="list-style-type: none"> Distribution of government health funding across socio-economic groups Distribution of health care cost burden across socioeconomic groups Utilization of essential health services by socio-economic groups 	Mortality rates for lowest income quintile
Efficiency	
<ul style="list-style-type: none"> Cost per case treated Length of stay in hospital Cost-effectiveness ratios 	Mortality rates per dollar invested in health care
Timeliness <ul style="list-style-type: none"> Effective treatment of malaria within 24 hours 	
Continuity <ul style="list-style-type: none"> Completion rates for TB treatment Full immunization Full antenatal care 	

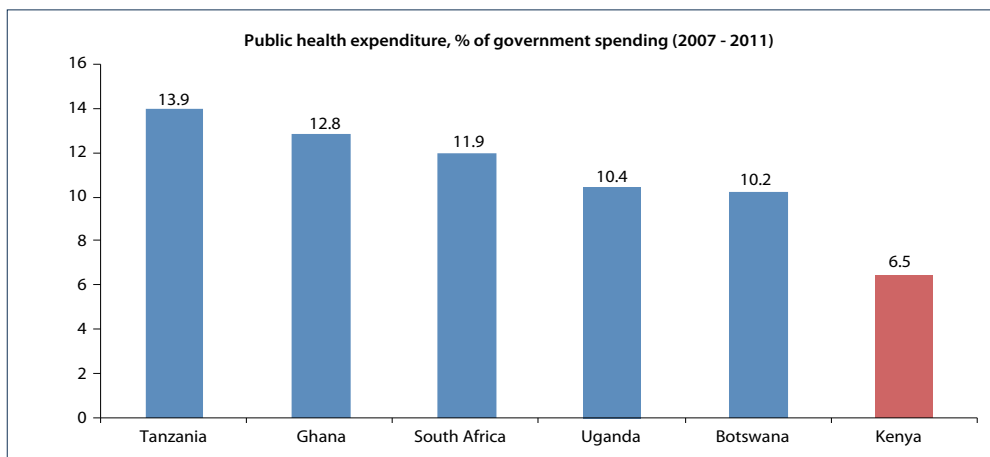
EFFICIENCY OF KENYA'S HEALTH SYSTEM

4.1 Macro level efficiency: A comparative benchmarking

Kenya's total health care expenditure is high but the public expenditure share is too low even by regional standards (Figure 4.1). Although aggregate spending on health has increased (Section 2), the share of government expenditure allocated to health remains relatively low. The government spends about 6 percent of the total budget on health, which is one of the lowest in the region. The EAC countries are spending a larger share of their budgets on health.¹ In Rwanda, health expenditure takes 22.6 percent of the budget, Tanzania 14 percent and Uganda 10.4 percent. Outside the region, Ghana allocates 13 percent of the budget to the sector, South Africa 12 percent and Botswana 10 percent.

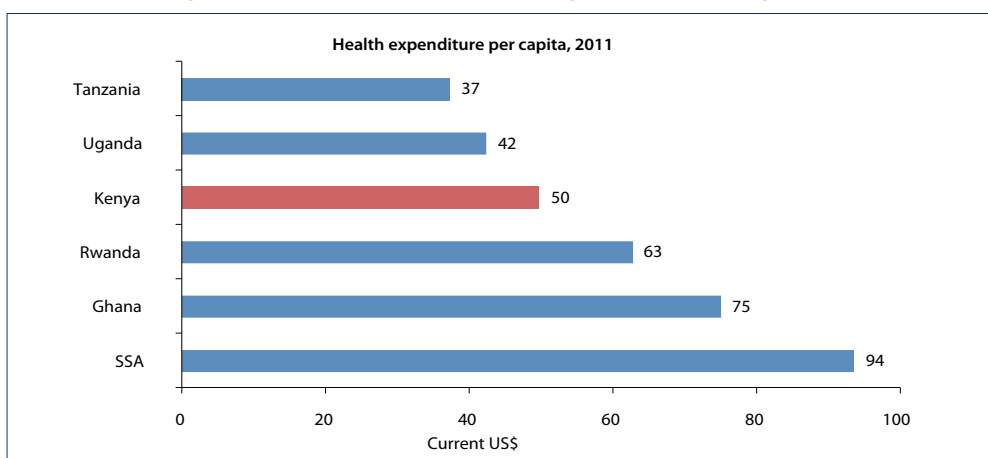
Kenya could increase the share of public expenditure on health to ease the health care burden for households, but this should be accompanied by efforts to improve efficiency. Kenya has committed to increase the share of health spending in the budget to the Abuja target of 15 percent. Although this is an important commitment other African countries spend a lot more on health (Figure 4.2). In South Africa, for example, per capita spending on health in 2011 was estimated at US\$ 689, Botswana US\$ 432, in Uganda US\$ 42. In the sample of countries selected here, Ethiopia is the lowest at US\$ 17 (see Annex 3). Emerging markets like Brazil spend about US\$ 1,121. However, some countries like Ethiopia are making remarkable progress even at lower levels of per capita spending. Furthermore, outcomes improve remarkably when interventions are provided as a package as will be demonstrated in the case for Sri Lanka in section 4.5.

Figure 4.1: Kenya's public health expenditure share in total public spending is low even in the region



¹ Comparing government allocations using the Abuja target is challenging, due to differences in estimation approaches and the economic growth of a country. Some countries like Rwanda, Malawi and Tanzania include donor funding as part of public expenditure on health, while others like Kenya do not. More importantly, the contribution of social determinants of health remains important, and while the health sector might deserve a larger share of the government's budget, other sectors like housing, water and sanitation contribute tremendously to the health of the population.

Figure 4.2: ... but health per capita spending compares to its neighbours



Source: World Bank (WDI database, 2013)²

Aggregate health outcomes: benchmarking inputs and outcomes

The country has made significant improvements in reducing infant and under five mortality rates but MMR remains stubbornly high. Infant mortality rate (IMR) declined from 77 to 52 deaths per 1,000 live births in 2003 and 2009, respectively, while under five mortality rate (UMR) declined from 115 to 74 deaths per 1,000 live births in the same period. This downward trend in infant and under five mortality rates has continued in the recent years. Recent estimates suggest that IMR and UMR stood at 48 and 72 deaths per 1,000 births, respectively, in 2012. Maternal mortality rate (MMR) remains high at 488 per 100,000 live births in 2008. Estimates for 2010 suggest a marginal decline of MMR to about 360 per 100,000 live births. Table 4.1 presents the mixed performance of Kenya's key health indicators in comparison with Sub-Saharan African and Middle Income Countries averages.

Table 4.1: Mixed performance in key health indicators in Kenya

Performing Health Indicators	Kenya 2003/04	Kenya 2008/09	Kenya 2012	SS Africa 2012	MIC 2012
Under 5 mortality rate, per 1000 live births	115	74	72	98	45
Infant mortality rate, per 1000 live births	77	52	48	64	34
Children fully immunized, %	57	68	88**	70**	82**
Contraceptive Prevalence Rate	39	46	-	-	-
Women receiving antenatal care, at least one visit	88	92	-	76*	82*
Ownership of bed-nets,%	22	61	-	-	-
TB treatment success rate	80	87	-	82*	87*
HIV prevalence rate (15-49 years)	7.2	6.2	5.7	4.6	-
Births attended by skilled health staff, % of total	42	44	-	-	-
Non-performing Health Indicators					
Maternal mortality rate	414	488	360*	500*	190*
Proportion of women making 4 or more antenatal visits	52	47	-	-	-

Source: Kenya DHS 2003 and 2008/09; UN MDGs Indicators (2013), <http://mdgs.un.org/>; World Bank (WDI database), Kenya AIDS Indicators Survey, 2012. * indicates 2010 figures; ** indicates 2011 figures

² SSA health expenditure per capita is high due to inclusion of South Africa and Botswana

Despite the recent progress, Kenya falls in the quadrant of weak performers in both maternal and infant mortality. Benching Kenya using these two indicators, Kenya appears in the quadrant of weak performers together with its neighbors, Uganda, Ethiopia, Rwanda and Tanzania (Figure 4.3).

High investments in immunization are not commensurate with UMR in Kenya. The second chart (Figure 4.4) plots immunization rates, against under five mortality. Kenya and its East Africa neighbors have achieved high immunization rates as high as some of the best performing countries like Brazil and Mexico, but the outcomes ('under five' mortality in this example) are much higher.

Figure 4.3: Kenya appears in the quadrant of weak performers in infant and maternal mortality, 2010

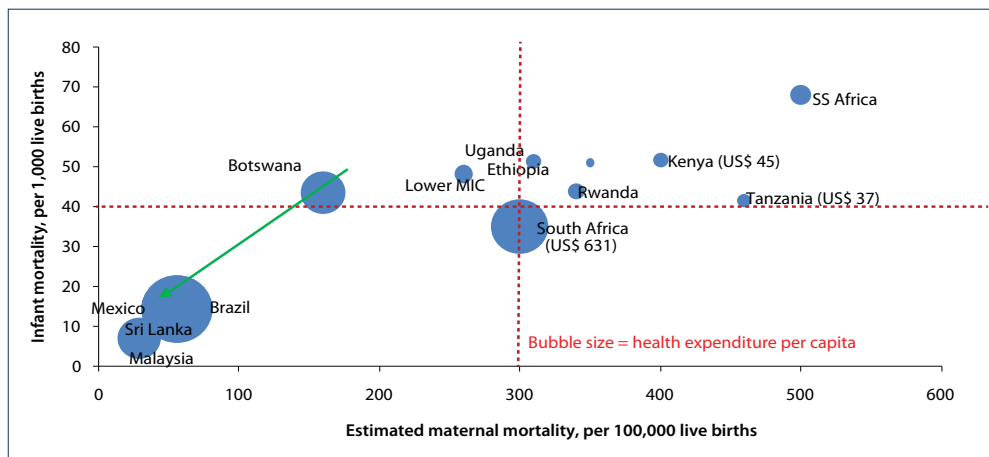
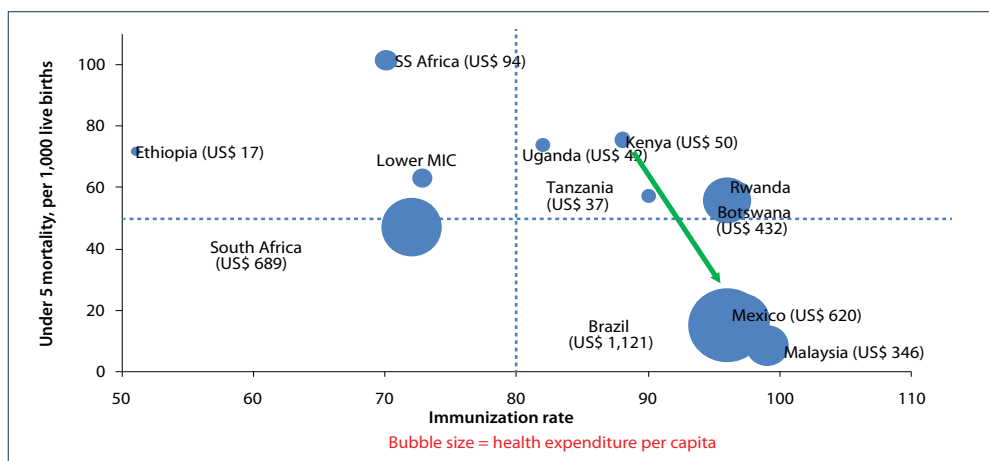


Figure 4.4: Immunization rates are high but require to be complemented by other inputs, 2011



Source: World Bank (WDI database)

The decline in IMR and UMR has been attributed to various key factors:³ (i) ownership and usage of insecticide-treated nets (ITNs) in malaria endemic zones; (ii) increased immunization rates; (iii) access to improved source of drinking water and; (iv) improved sanitation.

3 Demombynes and Trommlerova, 2012.

Preventive and promotive care interventions contributed to the decline in IMR and UMR, most notable the use of ITNs. The 2010 Malaria Indicator survey showed that 61 percent of children aged under five years slept under an ITN on the night before the survey. Children fully immunized increased from 57 percent in 2003 to 68 percent in 2008, and were estimated at 83 percent in 2012.⁴ Women making at least one ANC visit averaged 92 percent in 2009, while those making at least four ANC visits averaged 47 percent. The proportion of births assisted by skilled health personnel averaged 44 percent in the same year. The big difference between the proportion of women making at least one ANC visits compared to the share making four ANC visits and those assisted by a skilled health worker presents a missed opportunity to provide maternal health services in Kenya. The number of households accessing improved source of drinking water averaged 63 percent in 2009.

The high levels of maternal mortality have been attributed to several factors; one of the most significant factors is HIV/AIDS which accounts for 20 percent of maternal deaths. Some of the other drivers of maternal deaths include: severe bleeding and infections after birth, high blood pressure during pregnancy and unsafe abortions. In SSA, HIV/AIDS contributes to maternal mortality indirectly. Recent estimates suggest that in Kenya, 20.2 percent of maternal deaths can be attributed to HIV/AIDS, compared to an average of 10.4 percent for SSA.

Overall, aggregate outcomes suggest that even at the current levels of spending the country can achieve better health outcomes. The share of children who are fully immunized in Kenya is higher than in middle income countries, at 88 percent against 82 percent, and well above SSA average of 70 percent in 2011. In 2011, Kenya spent US\$ 50 per capita on health compared to US\$ 17 in Ethiopia. The rate of immunization in Kenya is also almost double the rate in Ethiopia, at 88 percent and 51 percent respectively, but the two countries have similar outcomes in maternal infant and under five mortality rates.

4.2 Allocative efficiency in health spending

The discussion on allocative efficiency is based on public expenditure and 'on-budget' donor funding. It is difficult to undertake a similar analysis for user fees and donor funding since granular data from these sources are not available.

Public spending is skewed in favour of high-end curative care which is inefficient and inequitable (Figure 4.5). Empirical evidence shows that preventive public health interventions are more cost effective than curative care. An efficient health system would allocate a significant share of funds to primary care due to widespread coverage of public primary health facilities and equity considerations, while maintaining lower but sufficient transfers to the national referral hospitals as they are important for offering specialized care. But in Kenya, about two thirds of the transfers are mainly to the two referral hospitals: Kenyatta National Hospital and Moi Teaching and Referral Hospital (Figure 4.6). Total transfers to national referral hospitals increased from KSh 3.3 billion in 2002/03 to about KSh 17 billion in 2012/13, over five-fold increase. Kenyatta Hospital accounts for the largest share of the total transfers, receiving 43 percent on average in last five years compared to 16 percent to Moi Teaching and Referral Hospital.

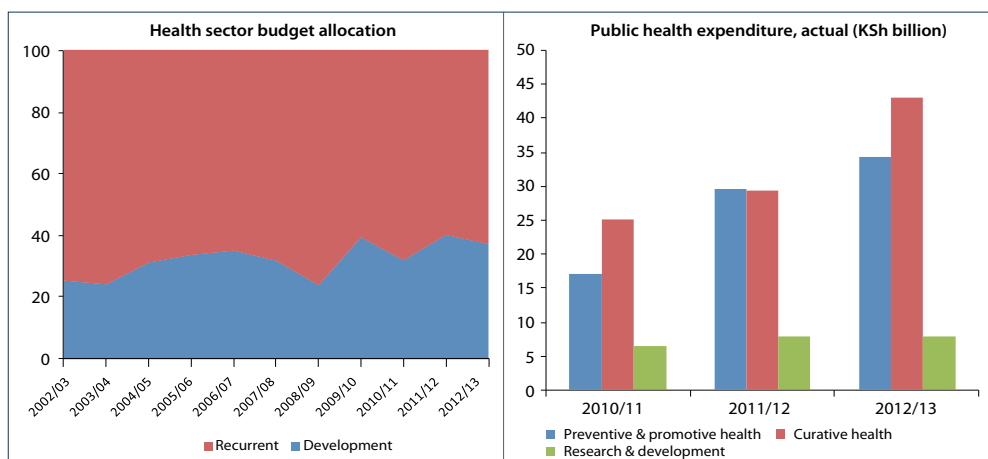
⁴ KDHS 2008-09 and WHO database, 2012.

Although the costs of service provision are expected to be relatively high for teaching and referral hospitals compared to those of primary health care facilities, the current pattern suggests that the share received by the two referral hospitals is relatively high compared to that allocated to primary health care facilities. Of more concern is that these teaching and referral hospitals largely benefit the richest population⁵ (the poorest quintile only receives 2.5 percent share of funding allocated to teaching and referral hospitals). Furthermore, weak referral systems often lead to overcrowding and provision of services for health conditions that can be addressed at lower levels of care. The distribution of health commodities has a similar pattern; hospitals enjoy the highest provision of drugs as shown in Figure 4.7.

The largest share of the health spending is recurrent in nature and skewed towards curative health (Figure 4.5). Recurrent expenditure quadrupled in the last ten years, from about KSh 14 billion in 2002/03 to KSh 54.6 billion in 2012/13. Over half of these funds support salaries, leaving very little for purchasing medicines and supplies. There are efforts to reduce the recurrent expenditure while increasing the development expenditure. Curative health care accounts for the highest share of the health budget while preventive care has remained relatively low. Nevertheless, there have been efforts to increase spending on preventive health in the last few years. Development expenditure averaged KSh 14 billion in this period.

Spending on wages is high but high levels of absenteeism and 'knowledge practice' gap undermine the efficiency of such spending. Compensation to employees constitutes the highest expenditure of health resources (Figure 4.6). This has seen an average increase of five percent between 2003-2007 and 2008-2012/13. Expenditure on goods and services declined in this period while transfers and capital expenditure recorded a marginal increase. In 2012/13, wages and salaries accounted for 42 percent of the total health sector allocation. This trend is likely to continue especially with the continued demands for higher wages by the health personnel and employment of more health workers.

Figure 4.5: Health expenditure is recurrent in nature and skewed towards curative health



5 Chuma J., Maina T. and Ataguba J. (2012). Does the distribution of health care benefits in Kenya meet the principles of universal coverage?

Figure 4.6: Wages and salaries dominate health expenditure while transfers are mainly to the Referral hospitals

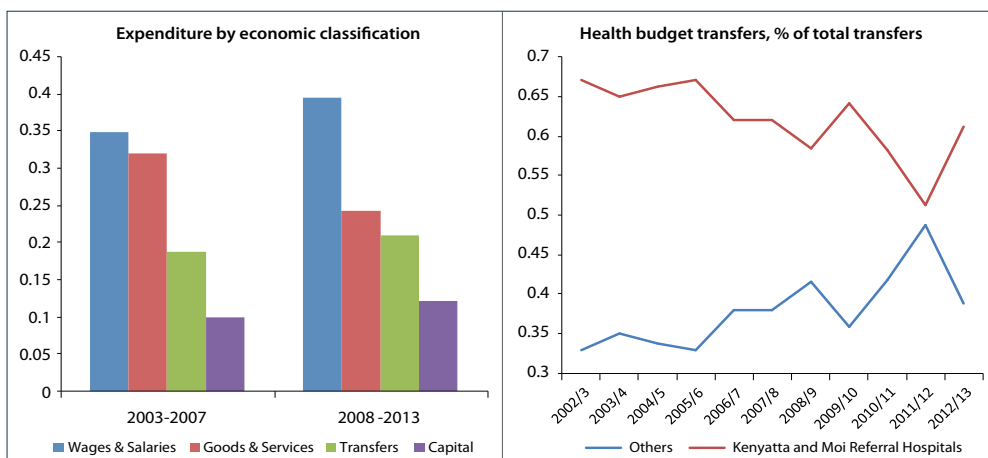
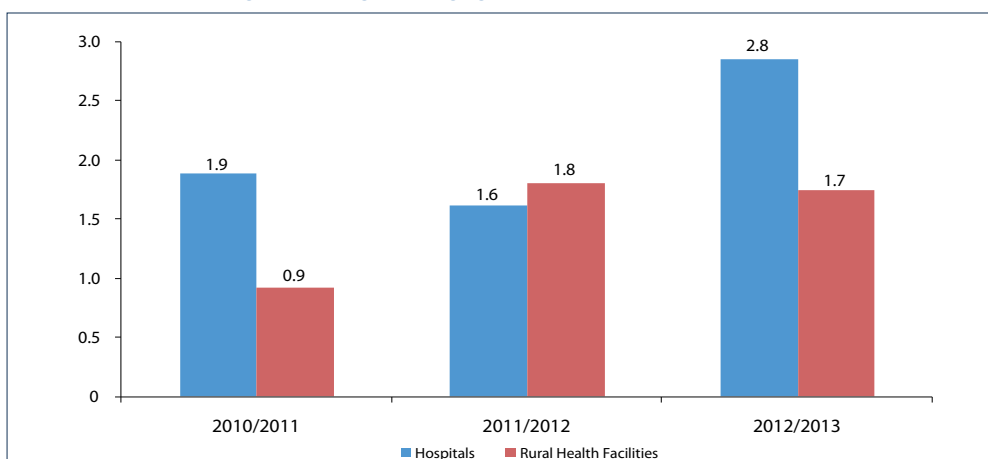


Figure 4.7: Drugs drawing rights by level of care (KSh billion)



Source: Computations based on National Treasury budget data and KEMSA data

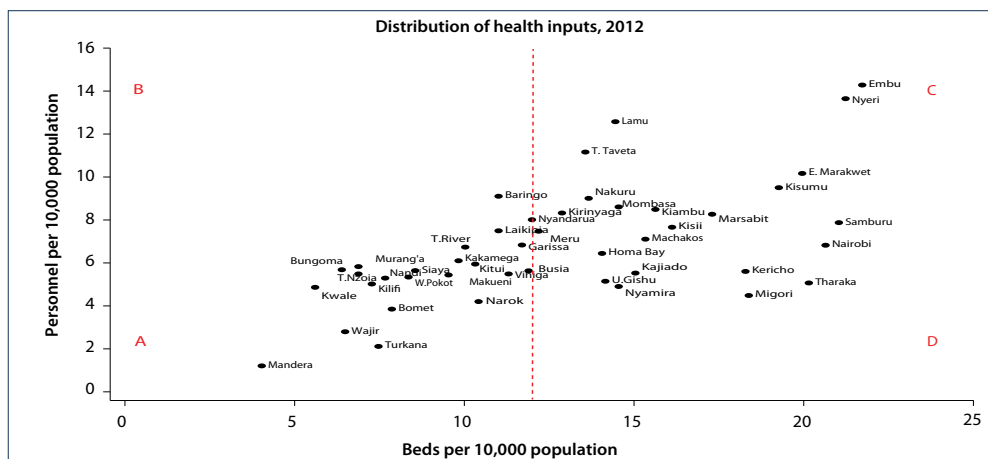
4.3 Spatial allocative efficiency

While national level structures and systems reflect a well-resourced country, the spatial distribution is a different story. The distribution of health facilities, personnel and other resources reflect spatial concentration and in some cases a mismatch between disease burden and the resources available at county level.

The quadrant analysis shows that in Manderu County, there is one health personnel and four hospital beds for every ten thousand people. In the neighboring county Turkana, 10,000 people share two health personnel and eight hospital beds. These numbers contrast sharply in the well-resourced counties. In Isiolo, there are 17 health personnel and 35 beds for every 10,000 people. In the next tier, Nyeri and Embu, 14 health personnel and 22 hospital beds are available for every 10,000 people. In section 4, we will use the quadrant analysis to determine which types of counties are more efficient in resource use, the well-resourced or under-resourced.

Counties with low population density face the greatest challenge in increasing access to health care. A deeper review of the distribution of beds and personnel per 10,000 people reveals the underlying disparities. Figure 4.8 presents beds and health personnel available by county. The counties fall into three quadrants: the first group of counties (B & C) is well resourced both in hospital beds and health personnel (based on national averages), the second category (D) has sufficient beds but still require additional personnel. The final category in quadrant A, are counties with low population density will limited facilities, beds and personnel. This group of counties requires innovative approaches to increase access to health in a cost effective way.

Figure 4.8: Distribution of health personnel and total beds by County⁶



Source: Computations based on www.ehealth.or.ke and HMIS data

Spatially, there are some examples of mismatch between available resources and the demand for health services. The analysis uses malaria test positivity, and the share of the population living with HIV/AIDS to proxy the demand for health care, and total spending per capita at county level as proxy for supply. There is a mismatch between available resource and the demand for health care suggesting that there might be redundant capacity in some of the existing health facilities in some counties. Nyeri and Siaya provide good examples to make the point; Nyeri has the highest number of facilities and personnel but one of the lowest incidence in malaria and the number of people living with HIV.

4.4 Technical efficiency by level of care

Technical efficiency declines at lower levels of care in public health facilities.⁷ The average technical efficiency for referral hospitals was estimated at 82 percent, 73 percent for district hospitals, 80 percent for health centers, and 47 percent for dispensaries. For private providers, (profit and non-profit), efficiency scores for hospitals are in excess of 90 percent compared to 50 percent for private health centers and 58 percent for private not-for-profit dispensaries. While the findings

⁶ Isiolo county which has the highest combination of personnel and hospital beds (17 health personnel and 35 beds per 10,000 population) is excluded from the scatter plot.

⁷ Results from this section draw on a technical efficiency study commissioned by the World Bank. The study had a number of limitations: it was based entirely on secondary data drawn for the Health Information System; the choice of variables was largely based on data availability and reporting rates; it was conducted before devolution. Current reforms may have implications on efficiency level considering the changes related to funds flow and service delivery responsibility at the county level; some inefficiencies observed are caused by factors outside the health systems. It is important to understand the causes of inefficiencies through qualitative research to find solutions to address them.

suggests that private health facilities are more efficient, it is important not to lose the equity focus in public sector provision, which presents a trade-off between efficiency gains and equity.

Public health facilities have the lowest technical efficiency scores, with the exception of health centres. A comparison of efficiencies scores at dispensary level shows private-for-profit scored 62 percent, mission facilities 58 percent, and public dispensaries 47 percent. A similar comparison for hospitals shows that 'non-profit' hospitals are the most efficient at 94 percent, private-for-profit at 91 percent and public hospitals at 73 percent. The causes of inefficiencies were not explored. However, differences between public and private sectors are expected considering the equity obligations for the public sector and the profit maximizing goal of the private sector, which influences their location in urban areas where the better-off population live. Moreover, inefficiencies can result from limited funding rather than too much funds, which are not adequately used. Exploring the causes of inefficiencies in county health systems and identifying mechanisms to address is an important area for future consideration. The average technical efficiency scores by level of care and by type of provider are presented in Figure 4.9 and Figure 4.10.

Figure 4.9: Technical efficiency by owner

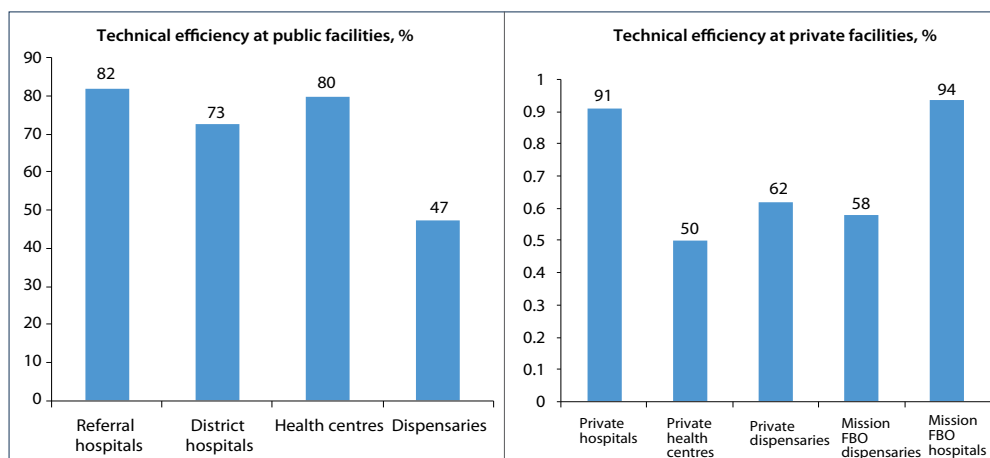
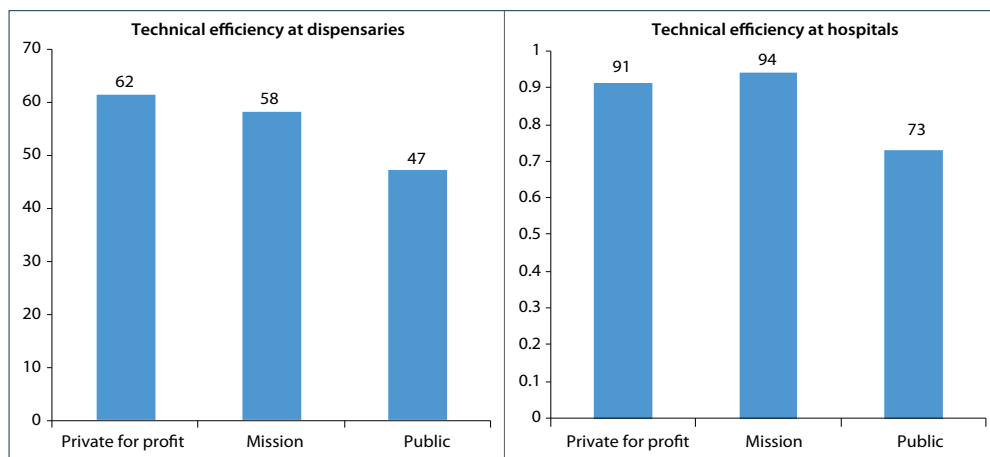


Figure 4.10: Technical efficiency by level of care and provider



Source: World Bank study findings (2013)

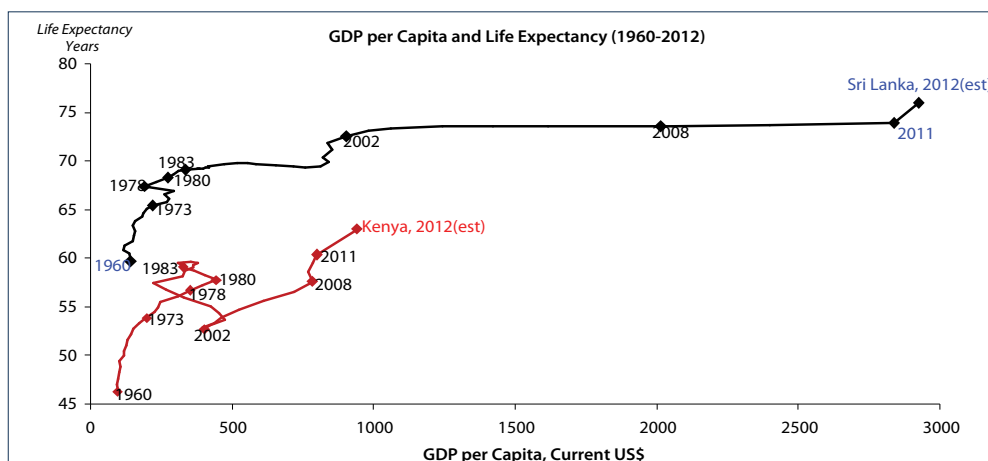
4.5 Kenya can learn from Sri Lanka⁸

In three decades, Sri Lanka's incomes per capita increased eight fold as Kenya struggles to double, so Sri Lanka can afford to spend more on health in per capita terms and has achieved enviable health outcomes.

Comparing health and wealth, Sri Lanka is a good case study for benchmarking Kenya's outcomes. The two countries have a lot in common: they share a British colonial heritage and upon achieving Independence inherited agriculture based economies exporting tea and coffee. In 1970s and 80s, the two countries had similar levels of income per capita. For instance, in 1980, Kenya's GDP per capita was US\$ 447 and Sri Lanka's was US\$ 273. By 2010, Sri Lanka's GDP per capita had increased ten-fold to US\$ 2,400, compared to Kenya's US\$ 787. Sri Lanka is now a much richer country and can afford to spend more per person on health. It is noted that the country has a higher GDP than Kenya and hence may have better outcomes.

Today, Sri Lanka is considered good practice in health care provision; the country has achieved remarkable outcomes in areas where Kenya is still struggling. The pursuit of different policies led to different outcomes in the two countries. Figure 4.11 compares life expectancy and income per capita for the two countries from 1960 to 2012.

Figure 4.11: Health and wealth - Kenya can learn from Sri Lanka



Source: World Bank (WDI database)

Sri Lanka's public health spending accounts for only 1.5 percent of GDP (2011) and the country has achieved remarkable health outcomes in a cost effective way. MMR in Sri Lanka is estimated at about 34 per 100,000 live births, IMR at 8.3 per 1,000 live births and under five mortality stands at 10 per 1,000 births. The country's share of public spending on health is very close to Kenya's 1.8 percent of GDP (2011), yet in Kenya the MMR is over 10 times higher at 360 per 100,000 live births, IMR is six times higher at 48.7 per 1,000 live births and UMR is seven times higher at 73. At this level of spending, Sri Lanka has achieved 99 percent antenatal coverage, 51 percent of women make 9-15 antenatal visits, skilled birth attendance stands at 99.5 percent, and home deliveries have declined to one percent, and even these deliveries are

⁸ Kenya's GDP per capita is based on the old GDP series before rebasing in September 2014.

by skilled birth attendants. Delivery at health facility is 85 percent and contraceptive use stands at 51.2 percent. See Figure 4.12, Figure 4.13, Figure 4.14, Figure 4.15 and Figure 4.16 for comparative health outcomes for Sri Lanka and Kenya.

Figure 4.12: Kenya's maternal mortality is over ten times that of Sri Lanka

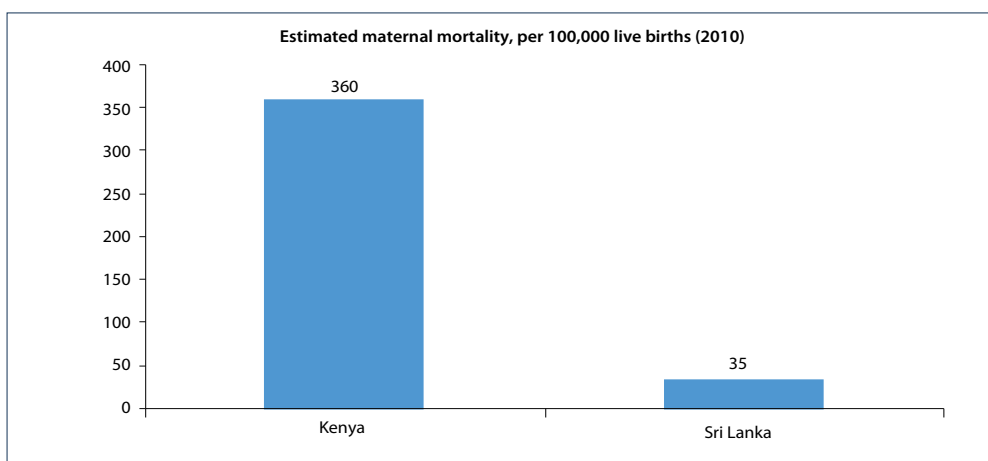
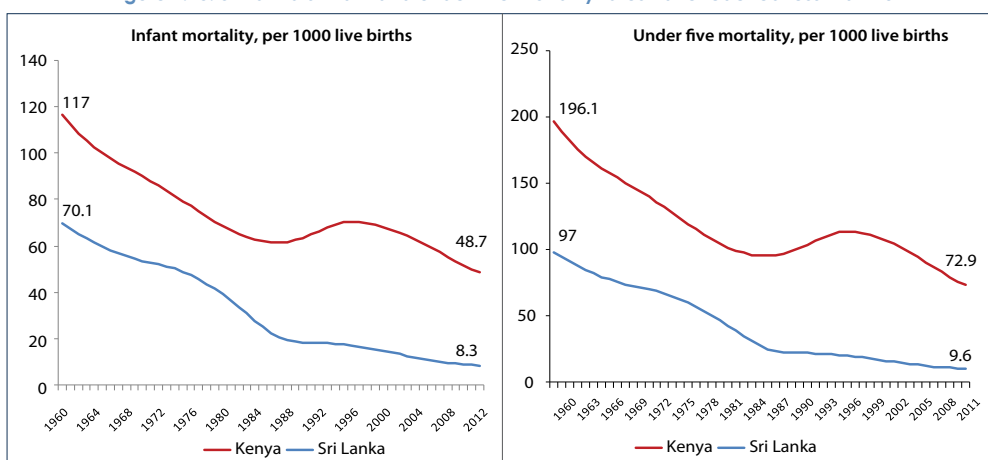


Figure 4.13: Sri Lanka's infant and under five mortality rates have reached less than 10



Source: World Bank (WDI database)

Health outcomes in Sri Lanka: Six decades of uninterrupted progress.

The remarkable outcomes are attributed to a combination of several policies, a few highlight here:

At the macro level universal free education up to tertiary level had significant spillover effects, some of which are reflected in the positive health outcomes. At the national level success is attributed to provision of free education up to university level and the provision of health care free of charge. Consequently, fertility rates have declined due to delayed age at marriage and increased contraceptive prevalence and hence the country is reaping the demographic dividend.

There is political will and commitment to prioritize and sequence investments in health. Sri Lanka's success has been attributed to consistent and indigenous low-cost policy actions which have gone uninterrupted by successive governments for six decades. The policies are home-grown and evidence-based, complemented by field and institutional systems country-wide.

The Sri Lankan government prioritized investments in primary health care. They have made significant investment in health care facilities to ensure easy access to primary and tertiary health plus field based surveillance care. Public health investments increased the number of public health facilities; essential obstetric care facilities are available at 1 per 460,000 people and are within a 3 km radius for every household. The country has strong field based systems for maternal, newborns and childcare. Field-based care is provided through public health midwives (PHMs) who are recruited from, and serve their own communities to minimize geographical and cultural barriers. Each PHM serves a population of 300 to 5,000 and has replaced traditional birth attendants. The PHMs make post-natal visits at least twice within the first 10 days. Infant weighing centres, at least one per village, are well established across the country and nutrition supplements are provided for undernourished children.

The public health system in Sri Lanka is tax funded, which ensures that all citizens have access to health care services when needed. While Kenyan health systems are predominantly funded through OOP payments, the public health system in Sri Lanka is tax-funded and no user fees are charged at the point of service delivery. Tax funding allows for risk pooling between the sick and the health provider and income cross-subsidization between the rich and the poor. More importantly, it promotes access to health care services among the poor and provides financial risk protection for all.

Public/private differential in the quality of care ensure that access to health care is equitable as the rich seek care in private facilities. Overall, significant investments, efficient use of resources and improvements will still be required in Kenya's health sector, even in areas where there has been progress.

Figure 4.14: In Sri Lanka 99 percent of births are attended by skilled health staff compared to 44 percent in Kenya

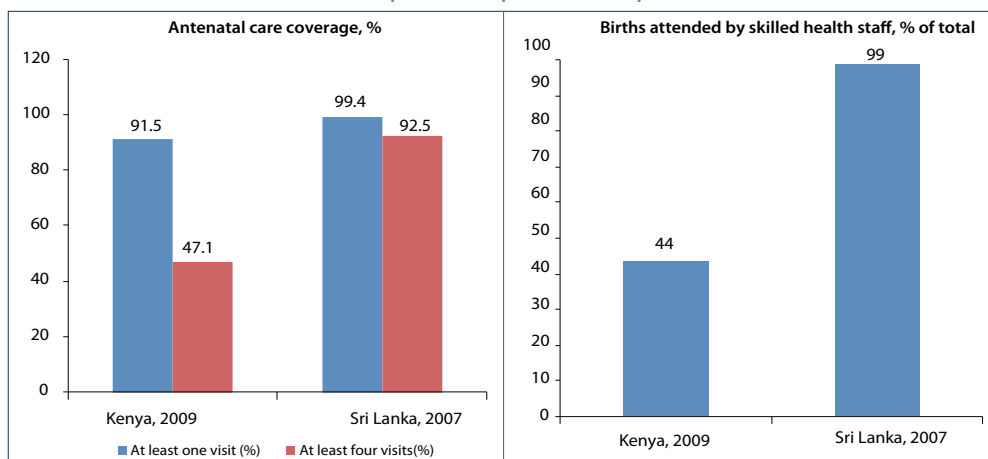


Figure 4.15: Immunization rate is high in both countries

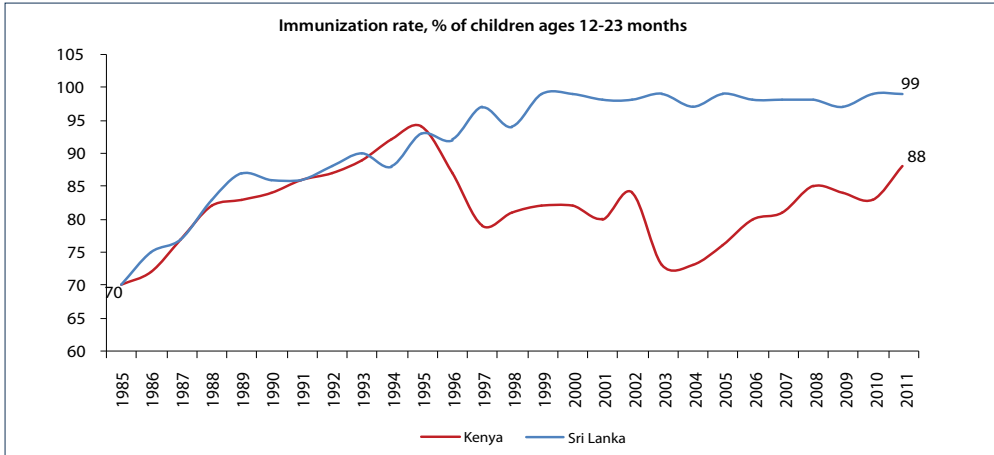
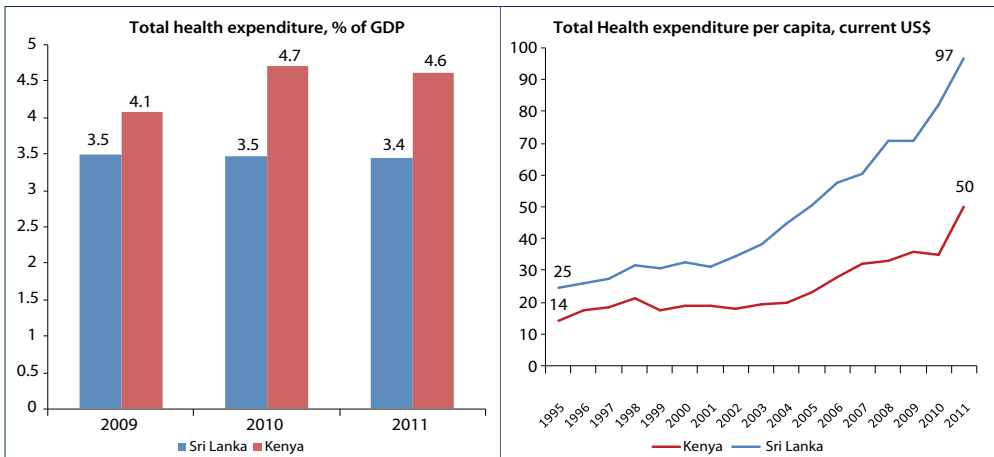


Figure 4.16: Kenya's expenditure on health⁹ is higher compared to Sri Lanka; however Sri Lanka's per capita spending is more than double that of Kenya



Source: World Bank (WDI database)

⁹ Kenya's total health expenditure, percent of GDP is based on the new GDP series after rebasing in September 2014.

SOURCES OF INEFFICIENCY IN HEALTH CARE PROVISION

Absenteeism and knowledge practice gap are some of the leading sources of inefficiency in health care delivery. The most recent PETS++/SDI survey (2012) uncovered several sources of inefficiency that undermine the effectiveness and quality of health care in Kenya. These include: the knowledge practice 'know do' gap; absenteeism by health professionals; diagnostic accuracy; delays in disbursement of funds; and shortage of equipment and hospital infrastructure (see Table 5.1).

Table 5.1: Sources of inefficiency in health care delivery

	All	Public	Private (non-profit)	Rural Public	Urban Public
Absence from facility	28%	29%	21%	28%	38%
Caseload*	9.0	8.7	10.4	8.5	10.3
Diagnostic accuracy	72%	74%	75%	73%	79%
Adherence to clinical guidelines	44%	43%	48%	42%	52%
Management of M/N complications	45%	44%	46%	43%	49%
Drug availability (all)	54%	52%	62%	53%	49%
Equipment availability	78%	77%	80%	76%	81%
Infrastructure availability	47%	39%	75%	37%	59%

Source: PETS++/SDI Survey (2012)

5.1 Absenteeism by health professionals

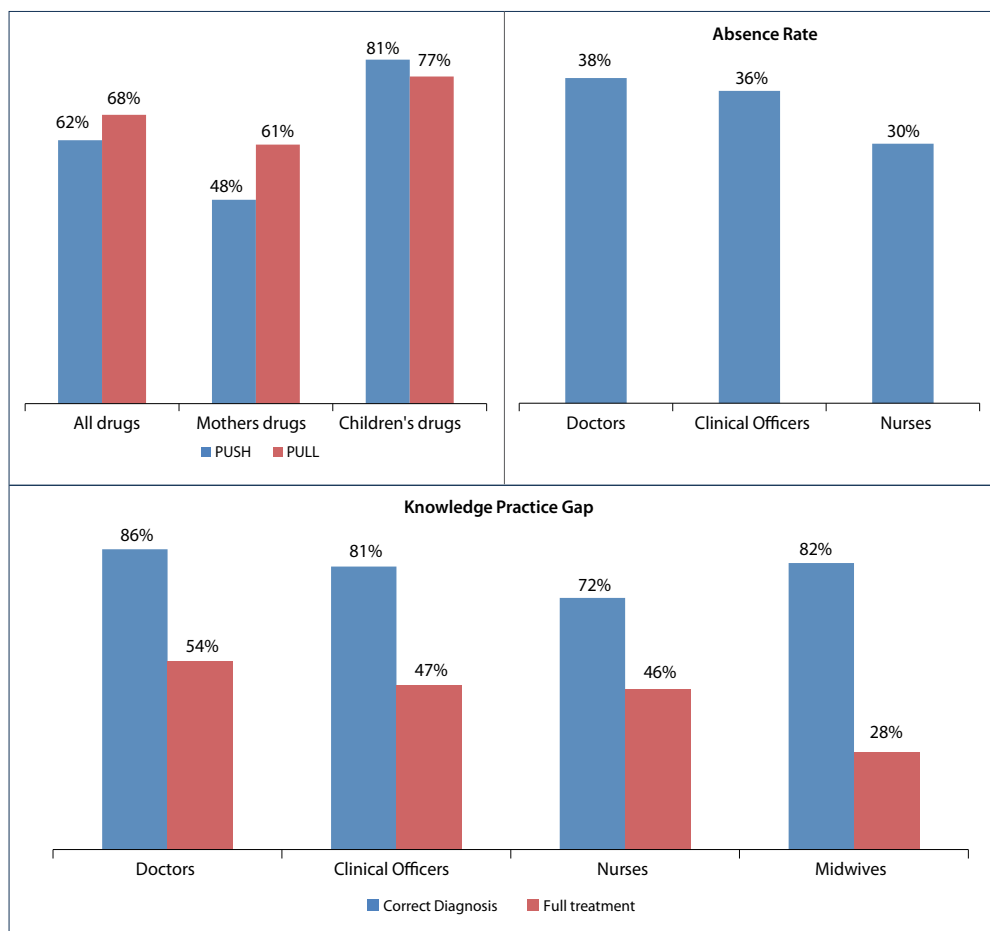
Absenteeism undermines the level and quality of health care in Kenya, particularly among physicians. Inequitable distribution of health personnel continues to be a major challenge in health facilities. This, coupled with absenteeism threatens the quality of health care provided at the facility level. Absenteeism averaged 28 percent in 2011/12 and it was highest in public health facilities at 29 percent compared to 21 percent in private (non-profit) facilities. Urban public health facilities recorded the highest absenteeism at 37.6 percent compared to 28.3 percent in rural public facilities. In public health facilities, doctors recorded the highest absenteeism at 37.6 percent compared to 36 percent for clinical officers and 30 percent of nurses (Figure 5.1). However, the analysis revealed that 88 percent of the cases are sanctioned by the authorities.

5.2 Knowledge practice gap

The 2012 survey estimated diagnostic accuracy at 72 percent but is much higher in urban health facilities. Findings from the 2012 PETs observed that at 72 percent, diagnostic accuracy in Kenya is high (86 percent for doctors, 81 percent for clinical officers). Figure 5.2 shows that doctors have a diagnostic accuracy of 86 percent but

full treatment is achieved in 54 percent of the cases. A similar gap can be observed for clinical officers and nurses but is highest for midwives, 82 percent diagnostic accuracy against full treatment at 28 percent. Inefficiencies creep through partial treatment, which may arise due to lack of resources needed to deliver required treatment (e.g. essential medicines and supplies), low motivations among health workers to do the right thing and/or high workload.

Figure 5.1: Absenteeism in health facilities is high among higher cadre staff



Source: PETS++/SDI Survey (2012)

5.3 Heavy reliance on OOP payments

As discussed in section 2, user fees are a significant source of O&M finance for health facilities. User fees are inefficient and inequitable and hinder access to health care services for the poorest households. This is particularly the case in Kenya where governance mechanisms are weak and there is limited oversight at facility level.

5.4 Delays in disbursements

Delays in disbursement of funds from the national government were a major challenge for the health facilities. The 2008 PETS findings indicated that most hospitals received 80 percent of their original Authority to Incur Expenditure (AIEs) allocations. The gap between allocation and actual receipts could be explained by underfunding from Treasury rather than a leakage. Fourth quarter AIEs were lower than all the other quarters in the same period. Moreover, the time taken to receive AIEs by provincial general hospitals was 43 days and ranged from 17-57 days for the four quarters. The fourth quarter was received just a few days before the end of the accounting period. It remains unclear whether counties are disbursing funds to the health sector on time, although anecdotal evidence suggests that similar delays may be happening at the county level.

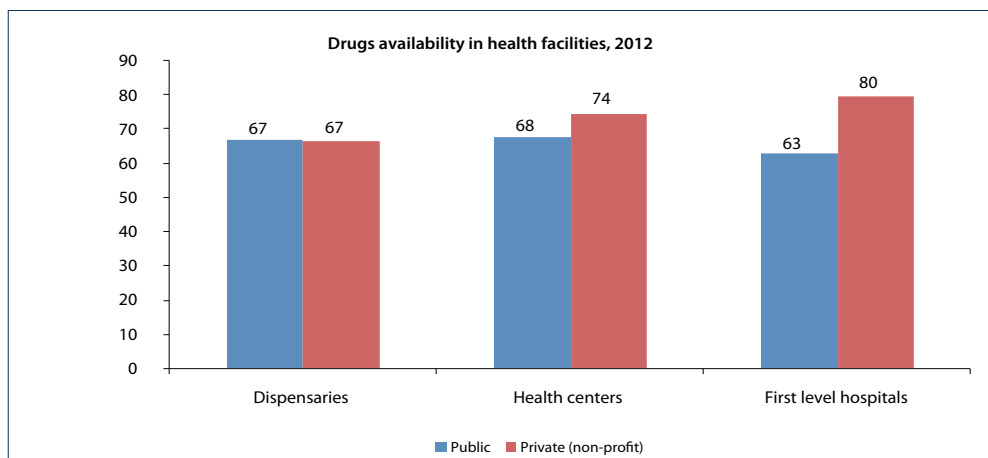
In 2012, most health facilities experienced delays of two to three months in receiving the HSSF funding from the national government. Findings from the 2012 PETS showed that 80 percent of health facilities receiving HSSF funds experienced delays. This affects implementation of the set activities as well as creating avenues for misappropriation.

Health facilities received lower than their original HSSF allocation in 2011/12. The 2012 PETS results indicated that out of the total health facilities surveyed, only 75.7 percent of dispensaries and 93.7 percent of health centres were receiving HSSF funds. Dispensaries received only 70.7 percent of the HSSF funds.

5.5 Stock outs and leakages in drugs and medical supplies

Health facilities have also to battle with shortage of drugs and medical supplies. The PETS findings in 2004 showed that 85 percent of the health facilities surveyed experienced shortages in medical supplies with 83 percent of the facilities buying their own drugs. Dispensaries were the hardest hit by these shortages. In 2012, overall essential drugs availability stood at 67.2 percent mainly dominated by essential drugs for children at 77.9 percent (see Figure 5.2).

Figure 5.2: Public health facilities face double burden of drugs shortage and delays in delivery



Source: PETS++/SDI Survey (2012)

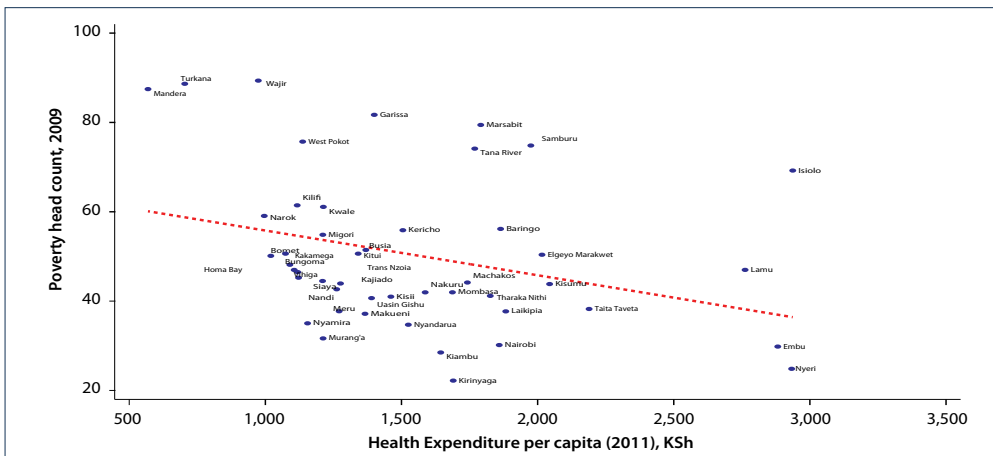
EQUITY IN HEALTH SPENDING

Is health budget allocated equitably vertically and geographically, and has it improved over time? A Benefit Incidence Analysis (BIA) would provide the right answers to these questions but the 2005/06 household budget survey is too outdated to provide relevant answers. Nevertheless, the 2005/06 BIA findings and track expenditures by levels of care were analyzed to determine if the pattern of public spending has become more equitable over time.

Health care is skewed in favor of high end curative care which benefits mainly the richest households. The BIA of health spending based on KIHBS 2005/06 showed that 48 percent of the unit subsidy in referral hospitals accrues to the richest households compared to nine percent for poor households. A more equitable allocation of health expenditure would see increased allocations towards primary health care and proportionately less in favor of curative spending. The analysis in section 4 concluded that health care is skewed in favour of high-end curative care which undermines equity in Kenya's health care system. Inequitable access to health care is further exacerbated by the high share of OOP payments discussed in section 2.

Recent data on sub-national spending per capita shows there is a negative correlation between health expenditure per capita and poverty headcount.¹ A mapping of county expenditure per capita and poverty head count is presented in Figure 6.1. The data shows a negative correlation between the two variables. This is not surprising, and devolution of health services is intended to address inequitable access to health services.

Figure 6.1: Correlation between poverty and health expenditure per capita in Kenya



Source: Staff computation from KNBS Census (2009) and HMIS data

¹ Poverty head count based on World Bank small area estimation using the 2009 census.

HEALTH SECTOR EXPENDITURE ANALYSIS (POST-DEVOLUTION)

7.1 Recent expenditure trends

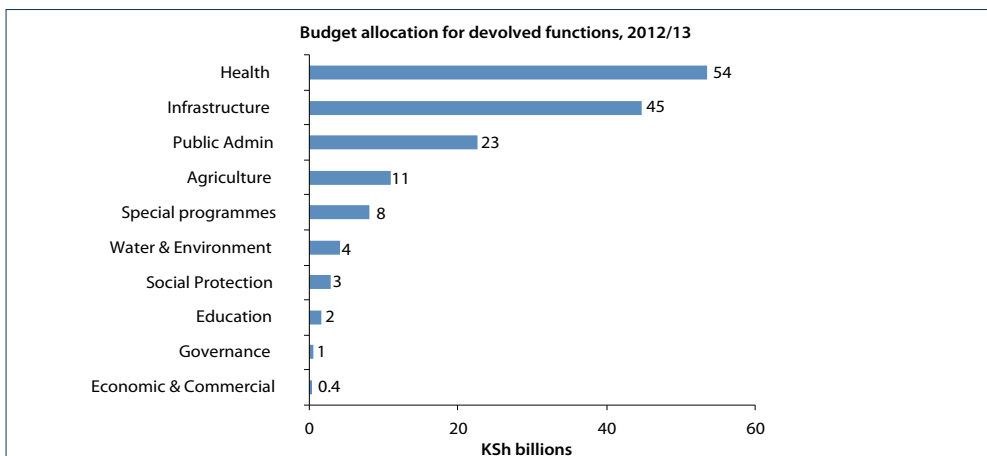
The health sector is probably the most impacted by devolution and policy reforms by the new government. This section discusses four changes that are likely to impact the delivery of health services: full devolution of the sector to the management of county governments, with the exception of national referral hospitals; abolition of user fees at primary health care level; provision of free maternal care policy in all public health facilities; and, the ambiguity in the funding of Level 5 referral hospitals (formerly provincial general hospitals) which are only available in eleven counties, which impacts on the performance of the referral system.

The abolition of user fees and introduction of free health maternal care will ease the burden of health care for households. The new government abolished user fees at primary health care facilities to increase access to health services. However, user fees are a significant source of O&M revenue for health facilities; the policy thus abolished a key source of finance for health facilities. Evidence indicates that user fees are a major barrier to access among the poorest population and that primary health care facilities benefit the poorest more. Removing user fees at primary care level is an important step towards the right direction. However, the extent to which this important policy contributes towards better health outcomes largely depends on: timely flow of resources to compensate facilities for lost revenue; availability of essential medicines and medical supplies (EMMS); and, availability of motivated health workers at the lower levels of care.

The National government has set up a fund to compensate health facilities for the loss of revenue from user fees and for free maternal care. To compensate dispensaries and health centres for loss of revenue from user fees, the government set aside KSh 700 million in 2013/14. Health facilities are compensated for lost revenue based on their previous collection levels, reported as part of the HSSF. HSSF used an average of the 6 months period before devolution (Jan-June 2013) as the basis for reimbursement. The government committed KSh 3.8 billion in 2013/14 to fund free deliveries in all public health facilities. Level 4 and 5 hospitals are reimbursed KSh 5,000 for each delivery, while health centers and dispensaries receive KSh 2,500 per delivery. Funds for free maternity care for dispensaries and health centres go through HSSF. Tertiary hospitals are reimbursed KSh 17,000 per delivery. The current budget estimates show that health sector allocation by the national government will increase by 36 percent in 2014/15 from the 2013/14 level and further by five percent during the MTEF period(2014/15-2016/17).

The health sector accounted for about 40 percent share of the total expenditure of earmarked devolved functions. A summary of devolved functions in the 2012/13 budget (before devolution) shows that 'on-budget' allocation for the health sector was KSh 54 billion, accounting for about 40 percent of the devolved funds, closely followed by infrastructure (KSh 45 billion) accounting for 30 percent of the devolved funds (see Figure 7.1).

Figure 7.1: Health had the largest budget allocation among earmarked functions for devolution¹

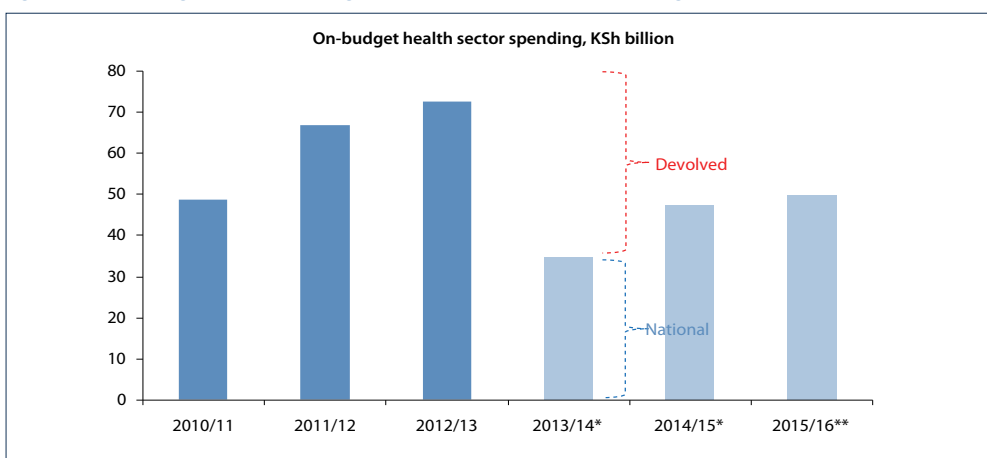


Source: National Treasury budget (2012/13)

However, the equitable share to the county governments is not sector earmarked; county governments have the discretion in allocating funds to different sectors. The provisions in the constitution give county governments full discretion in the allocation of equitable transfer to different sectors/departments in the county, so county governments are not under obligation to maintain the relative sector budget shares in line with the functions that were initially earmarked as devolved. So how are county governments allocating their budgets?

How much are county governments spending on health? An analysis of the 2013/14 budget shows a reduction of national government funding to the sector by KSh 50 billion (Figure 7.2). The difference is the share of the sector spending that was devolved to county governments. Therefore to maintain public health spending at the previous level, county governments ought to spend at least KSh 50 billion on health.

Figure 7.2: National government funding for the sector has increased following implementation of the new policies



Source: The National Treasury budget (2014/15)

¹ This chart summarizes Code 98 functions (devolved) in the 2012/13 budget. Other institutions like the Commission on Revenue Allocation and Transition Authority have different estimates. The budget estimates were used in this analysis.

The aggregate half-year county expenditure by sectors (July – December 2013) is presented in Table 7.1. The data shows that total spending for the health sector was KSh 3.3 billion which annualizes to KSh 6.6 billion. Half-year county expenditure on health personnel (paid by national government) was KSh 15.3 billion and expenditure on drugs and medical supplies at KSh 2.4 billion.² Table 7.1 projects a possible end-year expenditure outturn for the sector based on half-year expenditure. Mombasa County provides a good example of some of the challenges county governments experienced in 2014 in budgeting for the health sector (Box 1).

Table 7.1: Projected counties expenditure on health 2013/14³ (KSh million)

	2013/14 July – Dec Actual	2013/14* Projected annual
County expenditure	3,281	6,562
Personnel emoluments/ ¹	15,300	30,600
Drugs and medical supplies/ ²	2,453	4,907
Total	21,034	42,069

Source: Staff computations based on Controller of Budget data

¹ Payment of health staff working under county governments by the central government (MoH)

² Includes KEMSA one-off distribution to health facilities (September 2013, before counties took over) and KEMSA sales to county governments (Jan-Mar 2014)

The funding of Level 5 referral hospitals has been controversial since the sector was devolved. Level 5 hospitals are designed to be the referral centers for county hospitals; they provide specialized care that is not available at county level. In the structure of the sector these hospitals also maintain quality standards and coordinate county health activities. Level 5 hospitals are currently located in 11 out of 46 counties—excluding Nairobi (Figure 7.3⁴)—implying that the facilities presumably serve populations beyond the host county boundaries. Challenges remain on how to fund these facilities after devolution to compensate for the referral services offered to residents from other counties.

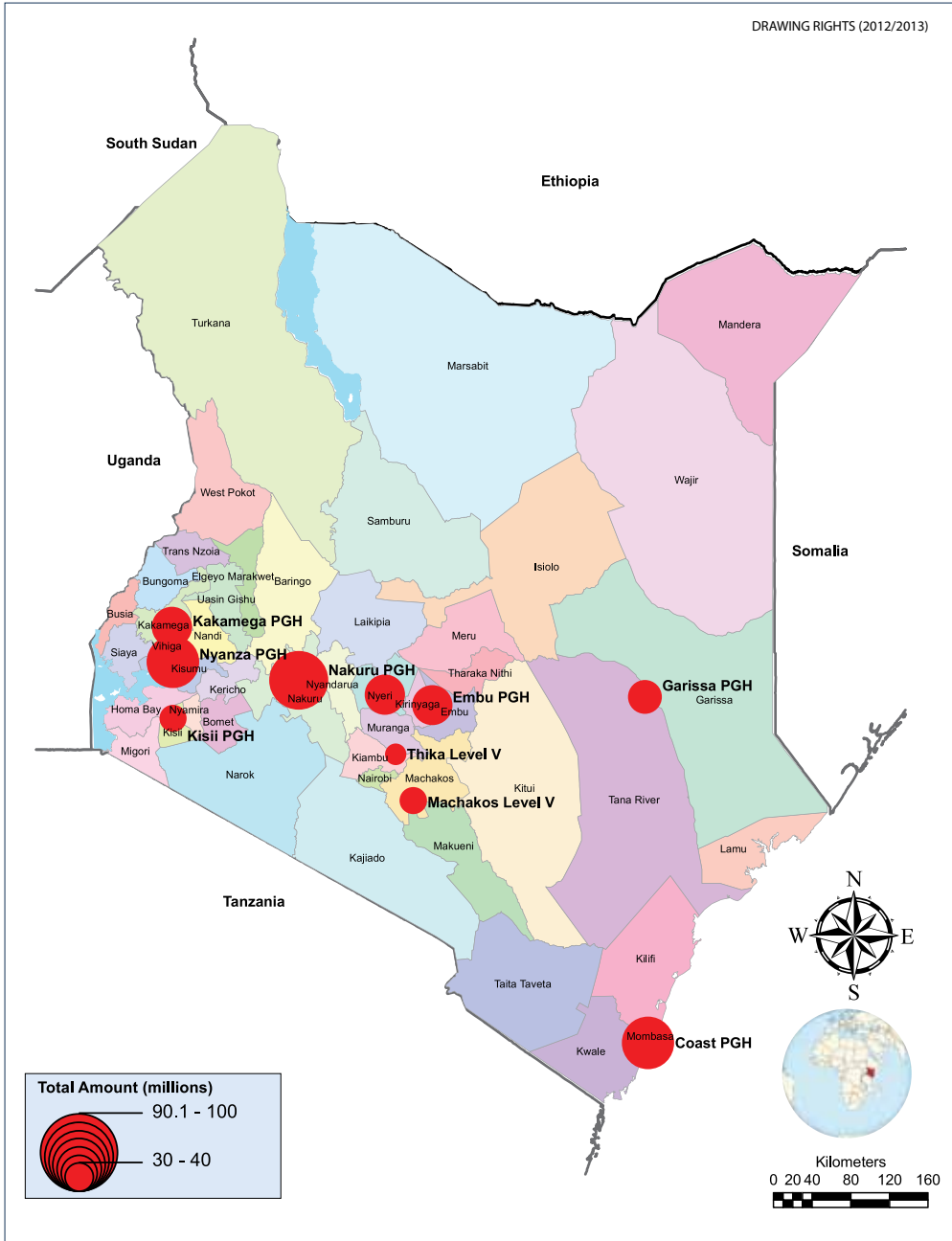
Some county governments would prefer to build their own Level 5 hospitals which will drive expenditure towards curative care. The National Treasury provided a separate grant of KSh 8 billion for these Level 5 facilities, in addition to the equitable share to county governments. The amount was subsequently reduced to KSh 3.4 billion after several consultations, and finally no earmarked allocation was provided for these hospitals. There is now an effort by some county governments to build their own Level 5 hospitals. Investments in high-end curative care will undermine efficiency in the sector and hence drive expenditure further away from preventive health. Efforts should be directed towards rationalizing hospital use through networks of hospitals across counties rather than constructing additional facilities.

² It is not clear if the amount paid to KEMSA was part of the 3.2 billion expenditure so there is potential for double counting.

³ This excludes Donor HSSF funds where the framework for conditional grants is under formulation to facilitate disbursements.

⁴ Level five hospitals are in eleven counties: Nyeri, Mombasa, Nakuru, Meru, Machakos, Kisumu, Kisii, Kiambu, Kakamega, Embu and Garissa.

Figure 7.3: Pharmaceutical and non-pharmaceutical drawing rights for level 5 hospitals



Source: Staff computations based on KEMSA data
 Notes: 1 Bubble size represents the value of the drawing rights

Box 1: Case study on health financing in Mombasa County

The county faces an extremely tough fiscal situation inherited from the former municipal council. The former Mombasa Municipal Council was in a dire state, with a persistent cash deficit financed by overdrafts and accumulating arrears. Furthermore, Mombasa has encountered budget challenges that many new administrations face (and which have also occurred in many other counties): (i) unrealistic levels of revenue are budgeted for, meaning that the overall spending level is set unrealistically high, but concurrently, (ii) inadequate information on the operating costs for health facilities, thus key expenditure items are not budgeted for.

Information asymmetry undermined the credibility and comprehensiveness of the budget. First, counties did not have all the information they needed on the costs of key inputs such as personnel emoluments and medical supplies which were previously centrally managed by the Ministry of Health, nor was all the information available fed through to County Treasuries to inform the budget process. As a result, the county budget did not fully cater for all ongoing expenses. The 2013/14 county budget for health was only KSh 938 million, yet the estimated costs of the basic inputs (personnel emoluments, drugs and other essential medical supplies, and operating costs for hospitals, health centres and dispensaries) is around KSh 2.1 billion. The major reason for this was a failure to budget fully for the costs of health sector personnel emoluments, which are around KSh 1.5 billion, yet only KSh 222 million was allocated in Mombasa's 2013/14 budget.

The multiple sources of funding, on- and 'off-budget' undermine the comprehensiveness of the budget, and are difficult to track. Health facilities receive funding from a variety of sources, notably, government funding, Health Sector Services Fund (HSSF), on- and off-budget, Hospital Management Services Fund (HMSF), off-budget donor funding, NHIF payments and also user fees collected and used at health facility level. Of these, only salaries, medical supplies procured from KEMSA and the operating grants in the form of HMSF and HSSF were previously included in the national budget. The county government did not have the consolidated data on financing at health facility level and the operating costs and some of these costs were effectively excluded from the budget.

Health facility financing has now become even more complex with the introduction two more grants from the national government. A significant portion of user fee revenue has been replaced with funding from national government for free maternity services and the abolition of user fees for primary services. These funds are not yet being treated as conditional grants reflected in the annual County Allocation of Revenue Act, rather, are being paid direct to facilities by the national Ministry of Health, and are not being budgeted for a county level. Lack of full oversight of facility spending means that a county may not be aware of the funding facilities required to deliver services. In Mombasa, this has led to hospitals building up arrears with suppliers.

The results of these complexities in health budgeting is that, as Mombasa demonstrates: the 2013/14 county budgets did not adequately cater for the full recurrent costs of health care delivery; and, most of the financing of facilities including hospitals, which are potentially the largest spending entity in most counties, is largely off-budget.

While the first risk is transient the second risk is more daunting and could undermine service delivery. As counties gain experience in budgeting and analyzing their patterns of expenditure over time, the first problem should be fixed. However, the second issue presents risks to continued flow of funding for health service delivery. The first risk is that in an effort to ensure proper scrutiny of fees collected by facilities, counties insist user fees are paid into the County Revenue Fund, instead of being retained by the facilities. This would deprive facilities, especially hospitals, of their current fiscal autonomy and make them fully dependent on accessing funding through the county treasury and county budget. If the county budget is unrealistic (i.e. over-optimistic revenue projections meaning in reality the budget is in deficit), or if county treasuries face challenges in accurately executing the budget, then facilities may find they receive less funding from the county than they are collecting in user fees. This would also create incentives for facilities not to report revenues collected, resulting in the perverse effect of further decreasing the scrutiny a county would have over health finances.

Box 1: Case study on health financing in Mombasa County (continued)

The second risk is that with facilities financed largely off-budget, there will be limited oversight on the management of health facilities. This might mean that neither the County Executive nor the County Assembly will have full understanding and oversight of health spending in the county. This makes it difficult for the county to assess what additional financing they should provide to facilities, and if further policy changes occur which further reduced facility revenues (e.g. further removal of user fees), then there is unlikely to be a smooth process of the county stepping in to replace this funding.

The first risk suggests that until county fiscal positions stabilize and counties can assure flows of consistent funding to health facilities, which include hospitals that are the most complex and expensive of county services, then these should continue to retain the user fees and grants from government. However, in order to introduce transparency, and place these revenues on budget, they should be included in county budget estimates and appropriation acts as “appropriations-in-aid”, or revenues which are shown on budget, but which can be retained by the county entity which collects them.

Source: World Bank Team (County Visits, 2014)

7.2 Supply chain system for drugs and medical supplies.

Timely availability of Essential Medicines and Medical Supplies (EMMS) is critical for delivering quality health services. Like most developing countries, Kenya has made efforts to ensure sustained supply chain of EMMS. However, two major challenges faced in achieving this objective was unpredictable flow affecting timely procurement of EMMS by the Kenya Medical Supplies Agency (KEMSA) and high levels of wastage including sometimes surplus stocks at the facility level.

7.2.1 Before Devolution

Kenya's efforts to improve delivery of EMMS:

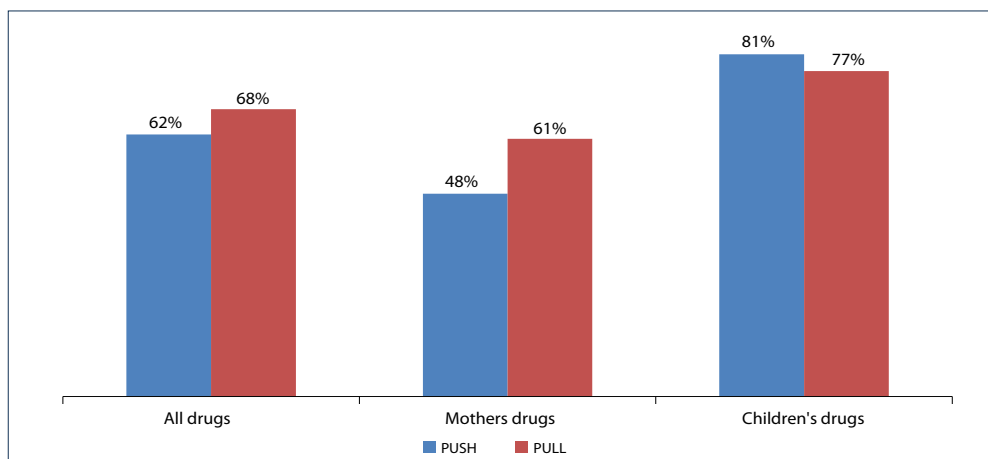
To reduce high levels of wastages and ensure supplies are responsive to local needs, Kenya piloted the 'pull system' of supply in 2006. The 'pull system' allows facilities to place orders based on their drawing rights—wastage rates tend to be higher under the push system of supplying pre-packaged kits. The government was finally able to scale-up the 'pull system' to all primary health care facilities by February 2013. The MoH facilitated establishment of drawing rights for districts while districts in turn made drawing rights for individual facilities based on work load. This initiative was complemented by support from the World Bank and Danida to capitalize and reform KEMSA. Technical assistance provided by the US Government also helped implementation of automated systems. The government started to reimburse KEMSA upon submission of proof of delivery to health facilities every quarter which ensured replenishment of the capital and better procurement planning.

Simultaneously, the government also reconstituted the KEMSA Board which hired competent staff through open market recruitment. KEMSA strategically outsourced warehousing and transport while instituting proper tracking systems and introduced barcoding of all its supplies. Each batch of EMMS procured by KEMSA is subjected to quality testing by a WHO pre-qualified laboratory before releasing it into the supply chain. This enabled KEMSA to effectively respond to the changing paradigm

and improve its efficiency and transparency. A comparison of KEMSA procurement prices undertaken by the MoH in 2011 has shown that at the aggregate level KEMSA was able to procure at 74 percent of the median international reference price.

A case study undertaken by the World Bank assessed the effect of KEMSA reforms in improving the provision of EMMS to poorer locations. This was done by regressing KEMSA supplies with district level poverty data. The study has shown that per capita value of supplies made by KEMSA were marginally higher in districts with highest proportion of the poor (75 percent) compared to districts where about a quarter of the population was living below poverty line (KSh 99 vs. KSh 86). However, the study has shown that it costs KEMSA more to ship supplies to poorer districts compared to better-off districts, probably due to longer distances from Nairobi, and dispersed location of facilities in such counties. The public expenditure tracking survey 2012 has shown marginal improvements in availability of essential medicines with much enhanced availability of commodities for maternal health (Figure 7.4).

Figure 7.4: Trends in availability of EMMS under Push and Pull Systems



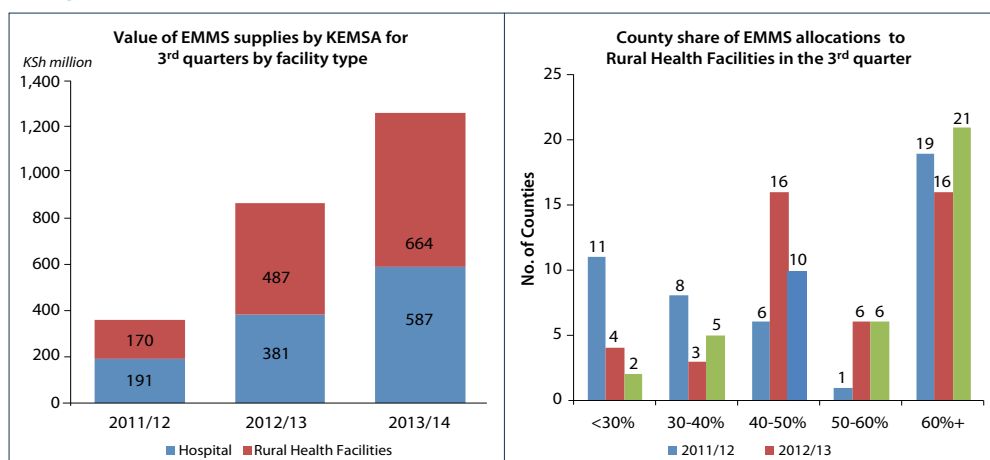
Source: PETS++/SDI Survey (2012)

7.2.2 EMMS in Devolved Health System

Devolution has led to a major change in the existing arrangements to procure and distribute EMMS. The resources for supplying EMMS are now devolved to counties which are at their liberty to procure EMMS. Due to political compulsions, the devolution process was accelerated which resulted in disruption of supply chain. The MoH has made transition arrangements by allowing KEMSA to release supplies for first two quarters of FY 2013-14. Meanwhile, KEMSA and another important agency undertaking pooled procurement for faith-based organizations- the Mission for Essential Medicines and Supplies (MEDS)—both reached out to counties. As it stands, KEMSA has entered into memoranda of understanding with all 47 counties and during the third quarter of FY 2013/14 forty four counties have placed orders. There are however concerns that there could be an overall reduction in volume of ordering by counties as they have to purchase these commodities out of their unconditional grants and therefore have to compete with other country priority purchases. There is therefore a significant risk that hospitals would be favored at the expenses of lower level facilities thereby forcing them to reintroduce some form of cost sharing for guaranteeing their own functionality.

A quick comparison of supplies made by KEMSA in the third quarter in the past three years, when the funding was still centralized, shows that generally orders made by counties in the third quarter of FY 2013/14 was higher compared to corresponding period of previous two years. Further, the share of orders placed for rural health facilities was higher than that of the hospitals. A more detailed analysis presented in Figure 7.5 shows that 27 out of the 44 counties ordered 50 percent or more of supplies made to rural health facilities. While this is a positive trend, more careful security is required by the MoH to track these trends and also compliance with essential drug list. Counties need to focus on improving quantification, timely ordering, proper storage and rational use which makes it a win-win for all.

Figure 7.5: EMMS orders made by counties from KEMSA increased in the first year of devolution (2013/14)



Source: Staff computations based on KEMSA data

Comparisons were made for trends in per capita public expenditure EMMS before and after devolution based on the supplies made by KEMSA (Figure 7.6). However, this did not take in to consideration the purchases made by facilities directly; for instance National referral hospitals procure directly. Despite these limitations, the key observation is that per capita public expenditures on EMMS in Kenya ranged between KSh 98 to KSh 130 (around US\$ 1.15 to US\$ 1.5) and are much lower than the average in sub-Saharan Africa. For example, OECD countries generally devote US\$ 239 in annual spending on drugs per head, compared to about US\$ 20 in developing countries and US\$ 6 in sub-Saharan Africa.⁵ Therefore, it is not surprising to note that the successive household health care utilization and expenditure in Kenya show that a significant part of the household out of pocket expenditure (over three fourths) is spent on pharmaceuticals.

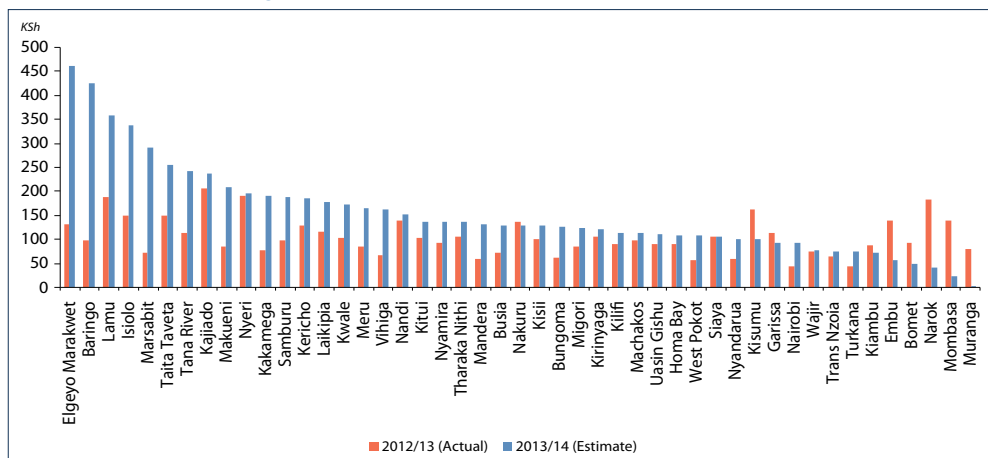
While it is important to ensure that more public resources are spent on essential medicines, it is also important to get more value for money currently being spent. An assessment of the KEMSA procurement prices done by the Ministry of Health⁶ suggests that KEMSA managed to get commodities at competitive prices. On average, there is a price advantage of around 25 percent in procurements done by KEMSA compared to international prices. Further, KEMSA also has quality assurance systems in place and making supplies at the service delivery point also reduces the risk of leakages during transport. However, this needs to be complemented by facility

5 WHO Medicines Strategy: Framework for Action in Essential Drugs and Medicines Policy 2002–2003. (Geneva: WHO, 2000), www.who.int/medicines/strategy/strategy.pdf

6 Personal communication from Dr. Jackson Omondi, former Chief Pharmacist, Ministry of Public Health and Sanitation

level actions such as rational prescription, good storage practices and effective ordering based on quantification.

Figure 7.6. Estimated per capita EMMS supplies to counties



Source: Staff computations based on KEMSA data

Comparisons were also made on how per capita EMMS supplies made by KEMSA at county level varied after devolution. The comparisons used actual supplies for FY 2012-13 and estimated supplies for FY 2013-14 based on the supplies made by KEMSA during the third quarter. There are huge limitations in applying this approach as some counties, such as Mombasa and Murang'a, used alternate sources during the quarter studied, and the assumption that one quarter represents the full year does not hold true. Despite these limitations, the overall picture is that there are huge variations in supply, but in general more EMMS supplies are being made by KEMSA after devolution. It is also important to note that both counties and KEMSA faced initial challenges in setting up the system and ensuring timely delivery and payments. As the range of products also increased, KEMSA could not supply all commodities being ordered. Some challenges are also noted in complying with the national Essential Drug List (EDL) and a tendency to order propriety products rather than generic.

Key conclusions:

- The supplies made by KEMSA in the third quarter of FY 2013-14 suggest EMMS delivery was not adversely affected by devolution and actually improved marginally as counties made efforts to sustain the supply chain;
- A majority of counties provided a higher share to rural health facilities in their orders;
- Centralized procurement is cost effective and could be responsive to a devolved system;
- Counties need to further enhance funding for EMMS and improve quantification and rational use to optimize existing allocations. It is important to comply with the national EDL and order generic medicines; and
- The MoH needs to effectively engage with County Departments of Health in the ongoing updating of the National Essential Drug List. The MoH also needs to monitor the ordering patterns, especially by levels of care, and establish whether ordering includes preventive and nutrition commodities and addresses neglected diseases.

HARNESSING OPPORTUNITIES THROUGH DEVOLUTION

Devolution provides a unique opportunity to address the long standing inequities as well as inefficiencies. This note offers six suggestions for county governments to consider:

Consider partnerships with private 'not-for-profit' providers to increase access to health care in underserved areas. Figure 8.1 clusters counties into three groups based on availability of health infrastructure and personnel. In counties where FBOs are strong partners, county governments could adopt a partnership model rather than start new investments in health infrastructure with the limited fiscal envelope. Non-government health providers have a wide network and the analysis shows they are more efficient than public health facilities.

Create appropriate incentives for health staff. Absenteeism and knowledge practice gap are some of the sources of inefficiency in Kenya's health sector. Devolution creates opportunity for closer staff supervision and performance monitoring. County governments need to create appropriate incentives for staff to be at work in scheduled times.

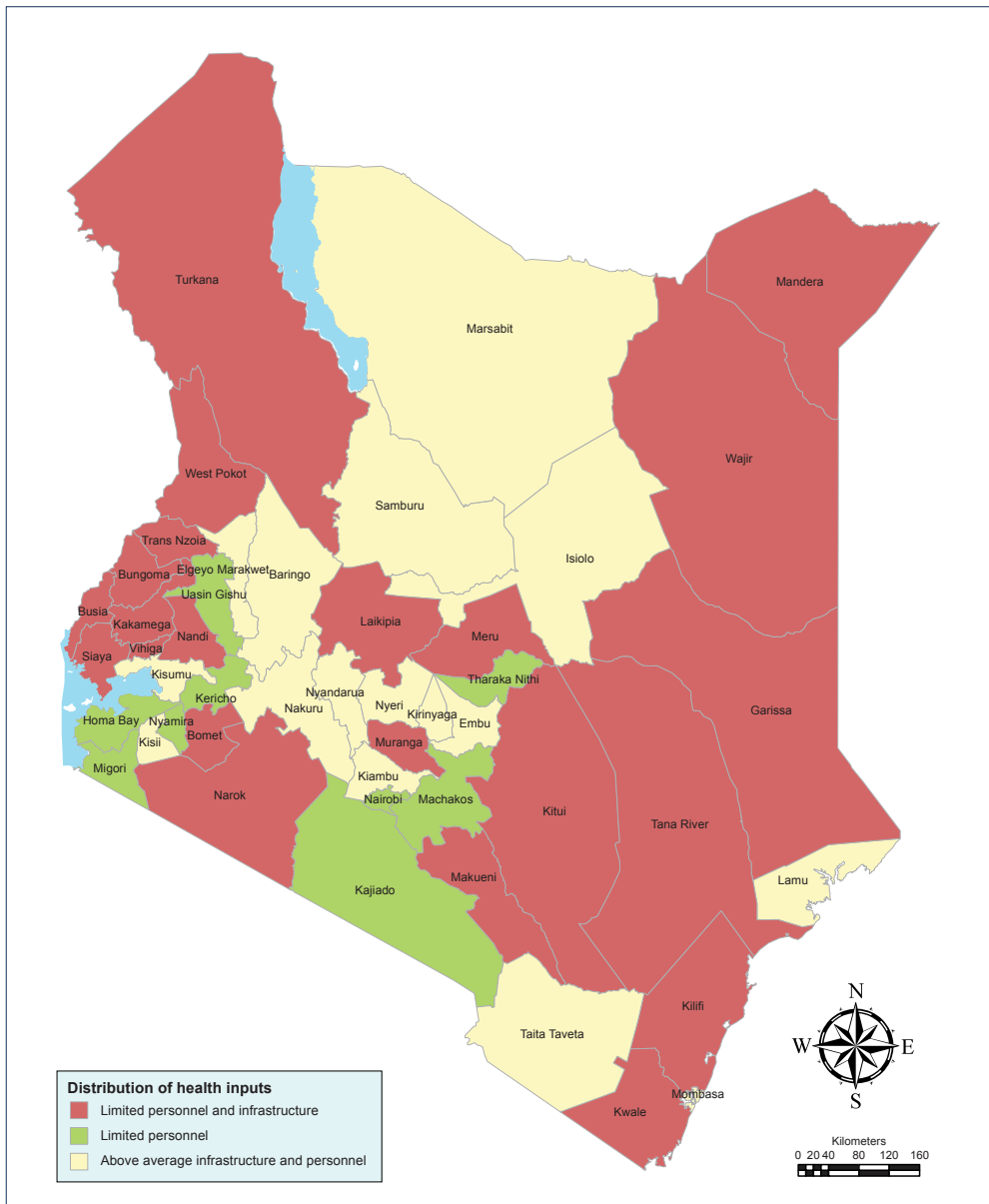
Align donors with county priorities; 'on budget' funding permits coordination. The heavy donor presence in Kenya's health sector presents opportunities and challenges. Donor financing frees up the much needed fiscal space for other development priorities. However, the significant share that is channeled outside the budget is inefficient and comes with two main challenges; it tends to be disease centric and undermines strategic prioritization. Furthermore, this kind of funding poses significant risks and contingent liabilities should the donors withdraw.

Develop a more efficient mode for the collection and management of user fees. User fees constitute a significant share of O&M expenses for health facilities, much larger than tax financed expenditure. The requirement that user fees are deposited in the County Revenue Fund could be more efficient but it presents two potential challenges that could undermine service delivery: (i) that counties under report the user fees; and, (ii) user fees are not ploughed back to the health sector. An alternatives approach is health facilities collect and retain user fees, but reflect in the budget and account as Appropriations in Aid (AiA).

Allocate resources to the most cost-effective interventions rather than high-end curative care. County governments can increase equity and efficiency in health care by allocating more resources to the most cost-effective interventions. Analysis shows that health financing has hitherto been skewed in favor of high-end curative care which is inefficient and inequitable. In this regard, county governments can learn from the Sri Lanka model which has achieved remarkable health outcomes in a cost effective way, and is considered 'good practice' in health care delivery.

The Sri Lanka model has unique cost effective approaches which country governments can learn from. There is political will and commitment to prioritize and sequence investments in health care. The country has prioritized investments in primary health care complemented by field based surveillance care, and essential obstetric care facilities are available at one per 460,000 and are within a 3 km radius for every household. The country has also strong field-based systems for maternal, newborns and childcare provided through public health midwives (PHMs) who are recruited from, and serve their own communities to minimize geographical and cultural barriers. Each PHM serves a population of 300 to 5,000, and has replaced traditional birth attendants.

Figure 8.1: Distribution of health infrastructure, 2011



Source: Staff computation based on HMS data

ANNEXES

Annex 1: Number of health facilities by level of care

	Level 2	Level 3	Level 4	Level 5	Level 6	Total
Dispensary	4,276	17	1	-	-	4,294
Medical Clinic	2,965	42	1	-	-	3,008
Health Centre	79	963	-	-	-	1,042
Other Hospital	2	57	174	5	-	238
Nursing Home	31	147	11	-	-	189
VCT Centre (Stand-Alone)	150	2	-	-	-	153
District Hospital	-	13	116	2	1	132
Sub-District Hospital	-	11	121	-	-	132
Laboratory (Stand-alone)	50	-	-	-	-	50
Maternity Home	13	33	2	-	-	48
Dental Clinic	30	-	-	-	-	30
Not in List	23	-	-	-	-	23
Medical Centre	16.0	3	-	-	-	19
Health Programme	12	-	-	-	-	12
Eye Centre	9	-	1	-	-	10
Provincial General Hospital	-	-	-	9	-	9
Radiology Unit	9	-	-	-	-	9
Health Project	7	-	-	-	-	7
Training Institution	5	1	-	-	-	6
District Health Office	2	1	-	-	-	3
Eye Clinic	3	-	-	-	-	3
National Referral Hos	-	-	-	-	3	3
Blood Bank	1	-	-	-	-	1
Funeral Home (Stand-alone)	1	-	-	-	-	1
Regional Blood Transfusion	1	-	-	-	-	1
Rural Health Training	-	1	-	-	-	1
Total	7,685	1,291	427	16	4	9,424

Source: www.ehealth.or.ke (2013)

Annex 2: Total health personnel in Kenya

Type of Personnel	2011			No. per 10,000 population		
	Number	No. per 100,000 population	No. per 10,000 population	Number	No. per 100,000 population	No. per 10,000 population
Doctors	7,549	19	1.9	8,092	20	2.0
Nursing Officers	57,267	145	14.5	63,301	155	15.5
Clinical Officers	9,793	25	2.5	11,185	28	2.8
Public Health Officers	7,584	19	1.9	8,069	20	2.0
Public Health Technicians	5,969	15	1.5	5,969	15	1.5
Pharmacists	2,432	6	0.6	2,532	6	0.6
Pharmaceutical Technologists	4,436	11	1.1	5,236	13	1.3
Dentists	930	2	0.2	985	2	0.2
Total	95,960	242	24	105,369	259	26

Source: www.ehealth.or.ke (2013)

Annex 3: Kenya's health expenditure compared with other countries, 2011

	Public Health Expenditure as % of GDP	Out-of-pocket expenditure as % of total health expenditure	Health expenditure per capita (current US\$)
Ethiopia	4.7	33.8	17
Kenya	4.5	46.4	50
Tanzania	7.3	31.7	37
Uganda	9.5	47.8	42
Rwanda	10.8	21.4	63
Lower middle income	4.3	55.4	79
Sub-Saharan Africa	6.5	29.8	94
Malaysia	3.6	41.7	346
Botswana	5.1	5.0	432
Mexico	6.2	46.5	620
South Africa	8.5	7.2	689
Brazil	8.9	31.3	1,121
Middle income	5.7	36.3	246

Source: World Bank, WDI database (2014) and National Treasury budget data

Annex 4: History of reforms in health financing

1989-1990: User fees were introduced in 1989 but abolished soon after in 1990 due to large declines in service utilization. Before this period, general taxation was used to provide health services in line with the policy of free health care. The fees were reintroduced in 1991 following declining public health expenditure per capita due to poor economic performance and declining donor support. With the reintroduction of user fees, the waiver and exemption policy was introduced, with children under the age of five being exempted from all fees.

1994: The government introduced the Kenya Health Policy Framework where reforms included restructuring the NHIF to expand and diversify the range of products being offered. Due to high out-of-pocket expenditures, the National Social Health Insurance Scheme was recommended for establishment in 2004 but the Bill was not assented to, even after being passed by Parliament.

2007: The government abolished user fees at primary health facilities (dispensaries and health centers) so as to increase utilization of health care services especially for the poor. However, the 10/20 policy rule was introduced where only a minimum registration fee of KSh 10 and KSh 20 for dispensaries and health centers, respectively, were maintained. In addition, free maternal health care was introduced in July 2007 in primary health facilities but this did not work due to lack of compensation for these provisions.

2007: To enhance access of health services by capping facility fees, the Health Sector Services Fund (HSSF) was established in 2007 to increase the flow of resources to primary health facilities. HSSF is a direct transfer from the MoH to the primary public health facilities (dispensaries and health centres) and District Health Management Teams (DHMTs). The main contributors of the HSSF funds are GoK, DANIDA and the World Bank as on-budget funds. The funding is currently almost on a 50-50 basis between the GoK and the donors.

2007: In addition, the 'pull' system was introduced which enables health facilities to prioritize acquisition of drugs and non-medical supplies from KEMSA according to their needs, a shift from the push system that supplies a standard kit of drugs, regardless of need and morbidity patterns. The pilot to implement the 'pull' system started in 2005 and ended in December 2006. Scale up of the 'pull' system started in January 2007 with anticipation that all public health facilities would adopt it by June 2011. However, the roll out was slowed by challenges until 2011 when it resumed at a faster rate than it had been from 2008. The process involved training health care workers to quantify their needs, place orders and keep good inventory records as a source of data for their quantification and requisition. By February 2013, all the public health facilities were using the pull system.

2013: The government has recently shown commitment to support provision of health services. On June 1, the President declared provision of free maternal health services in all public facilities as well as abolition of user fees at all primary health care facilities. This is a great initiative towards achieving universal health coverage. In response, KSh 3.8 billion in the budget was allocated to cater for free maternal health services while KSh 700 million was allocated to compensate health facilities for the abolition of user fees. This will deal with the problem of lack of compensation and an increase in services in health facilities is expected. These funds are disbursed through the HSSF to public primary health facilities as conditional grants under the oversight of counties.

Currently, the government is keen to achieve Universal Health Coverage and efforts are in place to support health insurance subsidies for the poor in which a pilot study has been rolled out by NHIF supported by the World Bank.

Annex 5: Data Envelopment Analysis (DEA) Methodology

Data Envelopment Analysis (DEA) is a functionalist, linear programming methodology for estimating efficiency of decision making unit among a set of fairly homogeneous decision-making units (DMUs), such as hospital, health centre and dispensary. Efficiency analysts either employ econometric or mathematical programming methods, such as Data Envelopment Analysis (DEA), to estimate technical and scale efficiency. The study used DEA due to its capability of estimating efficiency of health facilities that use multiple inputs to produce multiple outputs. Technical efficiency measures the ability of a DMU to provide maximum quantities of health services (outputs) from a given set of health system resources (inputs).

Technical efficiency of a facility is affected by the size of operations (scale efficiency) and by inputs and outputs from the best performing health facilities. DEA by default assigns weights to each unit's inputs and outputs in a way that maximizes its technical efficiency score. Health facilities that compose the 'best practice frontier' are assigned an efficiency score of one (or 100%) and are deemed technically efficient compared to their peers. The efficiency of the health facilities below the efficiency frontier is measured in terms of their distance from the frontier. The inefficient health facilities are assigned a score between zero and one. The higher the score, the more efficient a health facility is.

The model below illustrates how DEA measures the technical efficiency (TE) of hospital \mathbf{z} compared with \mathbf{n} hospitals in a peer group. It sketches a production possibilities frontier (data envelop or efficient frontier) using combinations of inputs and outputs from best performing health facilities. Since hospitals, health centres and dispensaries employ multiple inputs to produce multiple outputs; their individual technical efficiency can be defined as:

Objective function:

$$\text{Max } TE(u, v) = \sum_{r=1}^s u_r y_{rj_0} + u_o$$

s.t.

$$\sum_{i=1}^m v_i x_{ij} = 1$$

$$\sum_{r=1}^s u_r y_{rj_0} - \sum_{i=1}^m v_i x_{ij} + u_o \leq 0 \quad j = 1, 2, \dots, n$$

$$u_r \geq \varepsilon, r = 1, 2, \dots, s$$

$$v_i \geq \varepsilon, i = 1, 2, \dots, m$$

u_o is unconstrained in sign

Where: ε is an infinitesimal quantity greater than zero and a value of $u_o > 0$ denotes increasing returns to scale; $u_o < 0$ implies decreasing returns to scale; and $u_o = 0$ shows constant returns to scale. The terms y_{rj_0} and x_{ij_0} represent the amount of output r utilised by the j th unit and amount of input i utilised by unit j_0 . Optimization is performed separately for each decision making unit to compute an optimal set of weights (u_r, v_i) i.e. u_i refer to weight given to a health facility input i ; v_r is the weight given to output r and efficiency measure h_0 .

This model therefore allows the separation of both technical and scale efficiencies, as well as determination of whether individual decision making unit's operations are in regions of increasing, constant or decreasing returns to scale.

Annex 6: Public Expenditure Tracking Surveys (PETS)

Public Expenditure Tracking Surveys (PETS) is a diagnostic tool used to study the flow of resources through the system under which data are collected at all involved administrative levels and at the frontline provider. PETS track the flow of resources through various levels of government in order to determine how much of the originally allocated public resources reach each level. This has been necessitated by weak correlation between public spending and outcomes, poor information systems and need for accountability mechanisms, need for better understanding of service delivery performance, improve transparency and budget execution, and improve efficiency and impact of public expenditure.

PETS are useful in locating and quantifying political and bureaucratic capture, leakage of funds and problems in the deployment of human and in-kind resources such as staff, text books, drugs and specifically how the system targets funding to different levels. The PETS enables us to observe the outputs and actions of service providers, hence providing new information to policy-makers and beneficiaries on the complex transformation of public budgets into services.

Since 2004, Kenya has undertaken various PETS mainly in education, health and agriculture sectors. Recent PETS in education and health sectors were undertaken in 2012. Health PETS have been conducted for several years (2004, 2007, 2008, 2009, and 2012) led by the Ministry of Health and KIPPRA and supported by various development partners.

Source: Reinikka and Smith (2004)

Annex 7: Comparative benchmarking of health outcomes

Country	2010			2011		
	Estimated Maternal Mortality Rate, per 100,000 live births	Infant Mortality Rate, per 1,000 live births	Health expenditure per capita, current US\$	Under-5 Mortality Rate, per 1,000 live births	Immunization Coverage, % of children ages 12-23 months	Health expenditure per capita, current US\$
Botswana	160	43.6	382	56.0	96.0	432
Brazil	56	14.5	990	15.3	96.0	1,121
Ethiopia	350	51.0	15	71.9	51.0	17
Kenya	360	51.7	45	75.5	88.0	50
Malaysia	29	7.2	368	8.5	99.0	346
Mexico	50	14.7	603	16.7	97.0	620
Rwanda	340	43.7	55	58.9	97.0	63
South Africa	300	35.0	631	47.2	72.0	689
Tanzania	460	41.5	37	57.3	90.0	37
Uganda	310	51.2	44	74.0	82.0	42
Lower MIC	260	48.2	70	63.2	72.8	79
SS Africa	500	67.9	85	101.4	70.1	94

Source: World Bank, WDI database (2014)

Annex 8: County level health inputs and outcomes

	Births delivered at a health facility (%), 2011	Malaria Test Positivity Rates (%), 2011	Expenditure per capita, 2011	Personnel per 10,000 population, 2012	Beds per 10,000 population, 2012	Cots per 10,000 population, 2012	Poverty rate 2005/06 (%)
Baringo	28.5	30.0	1,864	9.34	11.2	0.6	57.4
Bomet	23.4	9.4	1,020	3.95	8.0	1.3	46.5
Bungoma	28.5	47.1	1,090	5.83	6.5	0.4	52.9
Busia	38.3	51.6	1,369	5.78	12.1	1.4	66.7
Elgeyo Marakwet	31.8	27.4	2,016	10.43	20.3	0.8	55.5
Embu	56.5	37.5	2,882	14.65	22.1	2.7	42.0
Garissa	27.1	18.4	1,400	7.01	11.9	1.0	49.2
Homa Bay	31.9	33.3	1,074	6.61	14.3	1.2	44.1
Isiolo	29.3	23.5	2,937	16.61	35.1	8.4	72.6
Kajiado	25.4	23.0	1,276	5.67	15.3	2.0	11.6
Kakamega	32.3	42.4	1,122	6.26	10.0	1.4	53.0
Kericho	46.1	16.8	1,505	5.75	18.6	1.1	44.2
Kiambu	72.0	13.1	1,644	8.71	15.9	3.1	27.2
Kilifi	44.0	13.9	1,117	5.15	7.4	0.7	71.4
Kirinyaga	74.0	3.7	1,690	8.54	13.1	1.2	25.2
Kisii	46.1	16.9	1,461	7.86	16.4	1.8	60.7
Kisumu	57.3	40.8	2,044	9.75	19.6	1.7	47.8
Kitui	24.9	46.0	1,341	6.10	10.5	1.6	63.5
Kwale	34.3	23.0	1,213	4.99	5.7	0.5	74.9
Laikipia	23.9	1.2	1,883	7.69	11.2	0.9	50.5
Lamu	51.4	6.8	2,762	12.90	14.7	1.9	32.7
Machakos	27.6	24.3	1,742	7.29	15.6	2.0	59.6
Makueni	19.8	21.4	1,366	5.58	9.7	1.7	64.1
Mandera	20.0	20.0	569	1.24	4.1	0.4	87.8
Marsabit	20.6	20.2	1,791	8.48	17.6	1.4	83.2
Meru	42.6	46.3	1,271	7.67	12.4	1.0	28.3
Migori	37.5	39.1	1,211	4.60	18.7	0.9	46.7
Mombasa	73.9	26.1	1,687	8.83	14.8	2.0	37.6
Murang'a	55.8	3.6	1,212	5.98	7.0	0.8	29.9
Nairobi	47.3	21.5	1,859	7.00	21.0	3.1	22.5
Nakuru	50.5	23.5	1,587	9.24	13.9	2.3	40.1
Nandi	18.0	26.7	1,262	5.43	7.8	0.5	47.4
Narok	17.0	15.3	996	4.31	10.6	1.9	33.8
Nyamira	40.7	6.1	1,155	5.03	14.8	1.0	48.1
Nyandarua	57.8	10.9	1,525	8.22	12.2	1.6	46.3
Nyeri	94.2	2.0	2,933	14.00	21.6	1.8	32.7
Samburu	18.5	30.8	1,975	8.08	21.4	1.9	73.0

Annex 8: County level health inputs and outcomes (continued)

	Births delivered at a health facility (%),2011	Malaria Test Positivity Rates (%),2011	Expenditure per capita, 2011	Personnel per 10,000 population, 2012	beds per 10,000 population, 2012	Cots per 10,000 population, 2012	Poverty rate 2005/06 (%)
Siaya	43.6	42.1	1,210	5.79	8.7	0.3	35.3
Taita Taveta	54.4	15.5	2,189	11.45	13.8	0.7	54.8
Tana River	18.4	31.9	1,769	6.91	10.2	0.0	76.9
Tharaka Nithi	40.5	49.7	1,826	5.20	20.5	1.2	48.7
Trans Nzoia	18.0	39.1	1,106	5.63	7.0	0.6	50.2
Turkana	14.7	48.4	704	2.17	7.6	0.8	94.3
Uasin Gishu	24.4	30.2	1,390	5.28	14.4	1.3	51.3
Vihiga	35.1	43.7	1,119	5.63	11.5	1.6	41.8
Wajir	12.4	35.2	974	2.87	6.6	0.4	84.0
West Pokot	19.7	37.2	1,137	5.48	8.5	0.4	69.8

Source: Staff computation based on HMIS data

Annex 9: Health expenditure per capita, current US\$

Year	Total	Government
1995	14	6
1996	18	7
1997	19	7
1998	21	9
1999	18	7
2000	19	9
2001	19	8
2002	18	8
2003	20	9
2004	20	8
2005	23	10
2006	28	11
2007	32	14
2008	33	13
2009	36	15
2010	35	14
2011	50	14

Source: WHO-Global Health Expenditure database (2014); WDI (2014); and National Treasury budget data

Annex 10: Half-year (July – Dec 2013) county expenditure by sector

Sector	2013/14 H1	Share %
Other Economic Affairs	761	1.8
Housing & Community Amenities	908	2.1
Agriculture	919	2.1
Environmental Protection	1,242	2.9
Education	1,314	3.0
Public Debt Transactions	2,200	5.1
Transport	2,679	6.2
Health	3,281	7.6
County Assembly	5,636	13.1
Office of the Governor & County Executive Services	10,977	25.4
Other General Public Services	13,248	30.7
Total	43,167	100.0

Source: Controller of Budget

Annex 11: Counties total budget allocation by functions, 2013/14

	Row Labels	Approved Estimate
Administration Services	1,308,700,000	1,308,700,000
Coordination of State Functions	156,250,935	156,250,935
Development and Stabilization of the Financial Sector	377,533,768	377,533,768
General Administration Planning and Policy Development	520,571,641	520,571,641
Human Resources and Support Services	404,729,640	404,729,640
Information Communications Services	3,234,734	3,234,734
Infrastructure, Social Economic Policy and Planning	209,088,574	209,088,574
Management of Public Financial Resources	299,192,536	299,192,536
Performance, Monitoring and Evaluation	80,000,000	80,000,000
Poverty Alleviation Initiatives	90,000,000	90,000,000
Preventive medicine and promotive health	838,378,513	838,378,513
Project Monitoring and Evaluation	50,338,030	50,338,030
Promotion of Investment, Private Enterprise and Competition	200,000,000	200,000,000
Unknown New	739,928,055	739,928,055
Unknown New	529,891,967	529,891,967
Grand Total	5,807,838,393	5,807,838,393
Health, % of Total	14	14

Source: National Treasury, IFMIS data

Laying The Foundation For A Robust Health Care System In Kenya

This health sector review expenditure and policy review provides a baseline assessment on the equity, efficiency and effectiveness of health provision. It observes that while total health expenditure has increased in recent years, almost a third of that spending is from out-of-pocket payments by individuals and households. And while the government has taken measures to increase the share of expenditure in primary health care, public health expenditure is stagnant and remains lowest in the region.

The policy note offers suggestions for increasing efficiency and equity to create a more robust health system. Overall, reduce reliance on out-of-pocket payments and move towards pre-payment solutions financing mechanisms; increase preventive primary health care expenditure; and harmonize donor support for the sector. Devolution also provides a unique opportunity to address long-standing inefficiencies as well as inequities.

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