KENYA REPRODUCTIVE, MATERNAL, NEWBORN, CHILD AND ADOLESCENT HEALTH (RMNCAH) INVESTMENT FRAMEWORK

Ministry of Health
Government of Kenya
January 31, 2016

TABLE OF CONTENTS

FOREW0RD 5
MESSAGE 7
EXECUTIVE SUMMARY 8
INTRODUCTION 12
VISION 13
GUIDING PRINCIPLES 13
PROGRESS TO DATE 14
REMAINING GAPS AND OBSTACLES 16
LESSONS LEARNED 17
WHY INVEST IN RMNCAH? 20
THEORY OF CHANGE 22
WHAT TO INVEST IN? 23
OPERATIONALIZING THE RMNCAH INVESTMENT FRAMEWORK 51
PERFORMANCE MEASUREMENT AND ACCOUNTABILITY 56
INNOVATION AND RESEARCH 57
RISKS AND MITIGATION 57
ESTIMATED RESOURCE REQUIREMENTS 58
IMPACT OF INVESTMENT 65
REFERENCES 69
ANNEX 1. DEVELOPMENT OF THE RMNCAH INVESTMENT FRAMEWORK 75
ANNEX 2. SELECTION OF RMNCAH PRIORITY COUNTIES 81
ANNEX 3. INTERVENTIONS WITH PROVEN EFFICACY 85
ANNEX 4. OPTIMIZING SERVICE DELIVERY TO ACHIEVE RMNCAH RESULTS 87
ANNEX 5. STRATEGIC ISSUES, OBJECTIVES AND STRATEGIES FOR CRVS 103
ANNEX 6. RESULTS FRAMEWORK AND MONITORING 107

Cover photo: © Melanie Mayhew, World Bank

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral Treatment
ASRH	Adolescent Sexual and Reproductive Health
BEmONC	Basic Emergency Obstetric and Newborn Care
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CHW/V	Community Health Worker/Volunteer
CRVS	Civil Registration and Vital Statistics
CBO	Community-based Organization
CSO	Civil Society Organization
DHIS	District Health Information System
DMS	Director of Medical services
ECD	Early Childhood Development
FBOs	Faith Based Organizations
FGM	Female Genital Mutilation
FP	Family Planning
GBV	Gender-based Violence
GFF	Global Financing Facility
HIV	Human Immunodeficiency Virus
HPV	Human Papillomavirus
HRH	Human Resources for Health
HSCC	Health Sector Coordination Committee
IDSR	Infant Death Surveillance and Response
IMR	Infant Mortality Rate
ICD	International Classification of Diseases
KDHS	Kenya Demographic and Health Survey
KEPH	Kenya Essential Package for Health
KEMSA	Kenya Medical Supplies Authority
KNBS	Kenya National Bureau of Statistics
LAPM	Long Acting and Permanent Methods
MDG	Millennium Development Goals
MDSR	Maternal Death Surveillance and Response
MMR	Maternal Mortality Ratio

MNCH	Maternal Newborn and Child Health
MOH	Ministry of Health
NCPD	National Council for Population and Development
NMR	Neonatal Mortality Rate
NGO	Non-Governmental Organization
OBA	Output Based Aid
OOP	Out of Pocket
PMA	Performance Monitoring and Accountability
PMTCT	Prevention of Mother-to-Child Transmission
PNC	Postnatal Care
PPH	Post-Partum Hemorrhage
RBF	Results-Based Financing
RMNCAH	Reproductive, Maternal, Newborn, Child and Adolescent Health
SARAM	Service Availability and Readiness Assessment Mapping
SBA	Skilled Birth Attendance
SDG	Sustainable Development Goals
STI	Sexually Transmitted Infection
TA	Technical Assistance
TBA	Traditional Birth Attendant
THE	Total Health Expenditure
U5MR	Under-Five Mortality Rate
UHC	Universal Health Coverage
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

FOREWORD

This report presents Kenya's Reproductive Maternal Neonatal Child and Adolescent Health (RMNCAH) Investment Framework for Kenya to realize the Vision 2030, the Constitution of 2010 and the Health Sector Strategic and Investment Plan 2014-18 and Sustainable Development Goals (SDGs).

Kenya has made remarkable progress in improving RMNCAH outcomes during the last decade. Child mortality has declined by over 20 percent since 2008 and the country achieved a total fertility rate (TFR) of less than four. Stunting, which remained stubbornly high over the past two decades, has started to decline. Six out of ten pregnant women now receive skilled care at childbirth and over half get postnatal care. However, in Kenya today, many women, neonates, children, and adolescents continue to suffer or die from conditions, which are preventable or treatable. Access to quality RMNCAH services still remains a challenge across all levels of care, while geographic, population sub-groups, and economic inequities persist due to supply and demand side barriers.

Improving coverage for RMNCAH services is a priority for the Government of Kenya. The Government has introduced new policies such as Free Maternity Services and Elimination of User Fee for Primary Care to address critical barriers and the First Lady is spearheading the nation-wide Beyond Zero campaign to ensure that no woman should die while giving life. Globally, there is renewed momentum and support for RMNCAH with the updated strategy for Women's Children's and Adolescent's Health and the establishment of new partnerships and funding streams for acceleration such as the Global Financing Facility (GFF). Growing national and international commitments provide an opportune time to enhance both domestic and external support for RMNCAH in Kenya to ensure smart, scaled-up, and sustained financing with focus on results.

Kenya has introduced an ambitious devolution initiative, which could help to address the major demand and supply side challenges. With devolution, national and county levels now have clear roles and responsibilities. This national RMNCAH Investment Framework is relevant to all 47 counties and will serve as a guide for the development and implementation of county RMNCAH implementation plans, which will be an integral part of County Integrated Development Plans and aligned with the County Health Strategic and Investment Plans. Each county can use the framework to inform county implementation plans that specifically focus on how to improve services relevant for that county context.

Sustained and additional health care financing will be central to the success of this RMNCAH Investment Framework. Towards this, the Ministry of Health (MOH) is developing a roadmap for Universal Health Coverage and a health financing strategy that will seek to mobilize additional domestic resources and align support from development partners. Given the limited fiscal space, this investment framework recognizes that coverage and quality improvements will, to a large extent, depend initially on increased productivity and efficiency gains.

This investment framework, which evolved through an extensive consultative process involving key stakeholders especially County Governments, Civil Society and Private Sector presents a prioritized set of smart interventions that could be scaled up during the next five years to rapidly improve the health outcomes of Kenyan women, children and adolescents. The MOH will enhance intergovernmental coordination mechanisms that ensure collective response from both levels of Government and development partners to rapidly improve the health status of women children and adolescents in Kenya.

Dr. Nicholas Muraguri

Principal Secretary

MESSAGE

Kenya has made notable progress in improving maternal and child health outcomes. Despite the progress, unfortunately Kenya could not achieve the Millennium Development Goals for maternal and child health. It is clear that a lot more still needs to be done by Kenya to address the supply and demand side barriers in the delivery of essential health services in order to realize the goals of vision 2030 and the 2010 Constitution. The Bill of Rights clearly articulates the right for health including reproductive health.

The transformational changes in the Kenyan Health System with the devolution provide a unique window of opportunity to address long-standing inequities and inefficiencies in the health sector. There have been notable improvements in service delivery during the past 3 years. The county governments have given priority attention to expand primary health care networks and enhance effectiveness in service delivery. Access to emergency obstetric care has improved in counties that faced long-standing challenges in making facilities operational. The availability and accountability of human resources for health is improving and most counties enhanced allocations for the supply of essential medical supplies.

However, more focused effort is required during next 5 years to eliminate preventable maternal and child deaths and improve health outcomes. I believe that the Kenya Reproductive Maternal Newborn Child and Adolescent Health (RMNCAH) Investment Framework provides a useful guidance for counties to set priorities relevant for their context and mobilize collective effort involving both levels of government, development partners, civil society and private sector to enhance maternal, child and adolescent health. While county governments will continue to enhance their efforts, it is important to make sure that they receive sound technical assistance and additional resources to develop and implement evidence based plans that provide priority attention to addressing country specific barriers in the delivery of RMNCAH services. For ensuring sustainability, these inputs should be fully integrated with county planning and budgeting processes.

Dr. Andrew Mulwa
Chair, County Executives Forum for Health

EXECUTIVE SUMMARY

Kenya has made steady progress in improving reproductive, maternal and child health outcomes in the last decade. Child mortality has declined by over 20 percent since 2008 and the country achieved a total fertility rate of less than four. Stunting, which remained stubbornly high over the past two decades, has started to decline. Six out of ten pregnant women now receive skilled care at childbirth and over half receive postnatal care. However, despite this progress, Kenya could not achieve maternal and child health Millennium Development Goals (MDGs). In Kenya today, many women, neonates, children, and adolescents continue to experience morbidity or die from preventable conditions that have proven and cost effective interventions. Access to quality Reproductive Maternal Newborn Child and Adolescent Health (RMNCAH) services remains a challenge across all levels of care, and inequities continue to persist among population sub-groups, and between rich and the poor.

Recent surveys[1] show major supply and demand side gaps and challenges in coverage of health services that result in continued disparities between counties, urban and rural residents and different population groups. The key supply side challenges include sub optimal functioning of the health system with uneven distribution of the health workforce as well as constraints in competency and motivation of the health care providers to provide quality care; insufficient financing and weak supply chain management resulting in missing critical inputs required for service delivery, especially essential commodities; and poor quality and utilization of routine data for evidence-based decision making. Sociocultural and economic barriers and constraints in physical access to health services continue to limit demand.

Improving coverage for RMNCAH services is a priority for the Government of Kenya as is reflected in its Vision 2030, the Constitution of 2010 and the Health Sector Strategic and Investment Plan 2014-18. The Government has introduced new policies as well as initiatives such as Free Maternity Services, Elimination of User Fee for Primary Care and the Beyond Zero campaign to address the critical barriers. Globally, there is also a renewed momentum and support for RMNCAH as part of the Sustainable Development Goals (SDGs) and the updated Global Strategy for Women's Children's and Adolescent's Health (2016-2030) which aims to achieve the highest attainable standard of health for all women, children and adolescents, and ensures that every newborn, mother and child not only survives, but thrives. The Global Financing Facility creates a new platform for collective action at the country level and is one of the main funding streams for the Every Woman Every Child movement. Such growing national and international commitments provide an opportune time to enhance both domestic and external support for RMNCAH in Kenya to ensure smart, scaled-up, and sustained financing.

[1] Kenya Demographic and Health Survey (KDHS) 2014 Kenya National Bureau of Statistics (KDHS), Kenya Service Provision Assessment 2010 (NCPD et al), Kenya Service Delivery Indicators, 2013(World Bank), and Service Availability and Readiness Assessment Mapping, SARAM 2014 (MOH).

An ambitious investment framework is, therefore, required to accelerate the scale-up of RMNCAH services through enhanced domestic and external resources, and align all stakeholders around prioritized investments that generate progress and results as Kenya marches towards universal health coverage (UHC) and sustainable health financing.

This document presents Kenya's RMNCAH investment framework, which has evolved through a Ministry of Health (MOH) led consultative process involving a wide range of stakeholders and prioritization informed by triangulation of available data from different sources. The investment framework envisions *a Kenya where there are no preventable deaths of women, newborns or children, and no preventable stillbirths; where every pregnancy is wanted, every birth is celebrated and accounted for and where women, babies, children, and adolescents are free of HIV/AIDS, survive, thrive and reach their full social and economic potential.*

Recognizing that business as usual will not accelerate progress, this RMNCAH investment framework focuses on translating political commitment into sustainable results. It recommends approaches and innovations relevant to the Kenyan context to address prioritised bottlenecks. The investment framework is informed by the guiding principles of respecting human and reproductive health rights (as enshrined in the Kenyan Constitution), promoting equity and gender equality, ensuring a responsive health system to client needs, and leadership and ownership at both national and county levels. Emphasis will be on achieving results by enhancing accountability through effectively leveraging performance incentives, optimizing efficiency through improved productivity and integrating RMNCAH service delivery with other vertical programs (HIV, tuberculosis, malaria etc.,) while ensuring continuum of care. This investment framework builds on Kenya's unique strengths of a growing private sector and a vibrant civil society through strategic engagement and partnerships.

The main assumption is that supply side interventions to improve service delivery and strengthen the health system need to be effectively coupled with innovative demand side approaches for scaling up coverage and utilization for high impact RMNCAH interventions. The framework also highlights the need for a multi-sectoral approach to address key social determinants that impact RMNCAH outcomes such as education, safe water and sanitation, transport, communication, food security as well as gender equality.

The key strategies driving this investment framework aim to address: (i) disparities in equitable coverage through investments in underserved counties and accelerated action for underserved and marginalized populations including the urban slum residents; (ii) prioritized bottlenecks that prevent the delivery and scale-up of proven high impact, evidence-based interventions to women, children and adolescents; and (iii) vital gaps in the health system to support an efficient and effective delivery of the high impact RMNCAH interventions through optimizing existing and mobilizing new public and private sector investments in the health sector. Community engagement will be key to generating demand, promoting behavior change and enhancing social accountability.

Given the huge resources required to improve RMNCAH outcomes in Kenya and the limited fiscal space, strategic choices will need to be made to select relevant best buys based on, but not limited to, gap and bottleneck analysis. While the RMNCAH investment framework is relevant for all counties, targeted additional investments will be required for the high burden and disadvantaged counties and most vulnerable groups and areas.

Increased multi-sectoral investments in adolescents will likely increase social and human capital resulting in a healthier, better skilled and educated future workforce ready for the labor market. In the long run, this will assist Kenya in realizing its demographic dividend to eliminate extreme poverty and promote shared economic prosperity.

Kenya has introduced an ambitious devolution initiative, which could help to address the major demand and supply side challenges. With devolution, national and county levels now have clear roles and responsibilities. The national Government is responsible for developing essential policies, strengthening regulation, establishing norms and standards, and financing national referral hospitals and selected national institutions, as well as providing capacity building and technical assistance (TA) to counties. While counties are responsible for service delivery, the two levels have shared responsibilities for resource mobilization, maintenance of essential health infrastructure, ensuring commodity security and quality human resources for health, and monitoring and evaluation. The national RMNCAH investment framework is relevant to all 47 counties and will serve as a guide for the development and implementation of county RMNCAH implementation plans, which will be an integral part of County Integrated Development Plans and aligned with the County Health Strategic and Investment Plans. Each county can use the framework to inform county implementation plans that specifically focus on how to improve services relevant for that county context. Targeted investments will prioritize the 20 high burden counties to address current inequities.

The implementation of the RMNCAH investment framework will help Kenya achieve maternal and child health SDGs by improving coverage for key indicators. The investment framework sets ambitious targets to increase: 1) skilled deliveries to 87 percent, 2) 4+ ANC visits to 69 percent, 3) full immunization to 76 percent, 4) contraceptive use by currently married women in reproductive age to 73 percent, and 5) pregnant women tested for HIV who received results and post-test counseling to 75 percent by 2020 from the baselines of the Kenya Demographic and Health Survey 2014 with enhanced focus on quality of services. It also aims to reduce stunting to 19 percent, teenage pregnancy to 11 percent, and contribute to decrease in neonatal mortality to 18 percent. The absolute number of deaths of children under-five years is projected to reduce from 77,761 to 48,590 and maternal from 5,453 to 3,276 between 2014/15 and 2019/20. Finally, the framework aims to ensure that at least three out of four births will be registered, thereby providing more robust denominators to effectively plan and monitor RMNCAH service delivery.

Progress on improvements in quality, productivity and efficiency will be tracked through strengthened routine data, independent surveys, and implementation research of innovations. Impact and outcome level indicators in reducing neonatal, infant, and under-five mortality rates, and maternal mortality ratio (MMR) will be tracked through population based surveys such as

the KDHS. The proposed Maternal Death Surveillance and Response (MDSR) helps to identify and register maternal deaths, and support appropriate actions to be implemented to prevent them. In addition to routine data, active citizens' participation and feedback, independent verification and progress reviews will be used to track achievements of the investments made in RMNCAH. Strengthening Civil Registration and Vital Statistics (CRVS) will be an essential intervention to inform better planning and enhance accountability to results. Improving data quality, analysis, use and implementation research to generate regular information on program costs and effectiveness is therefore a key investment priority.

Finally, sustained and additional health care financing will be central to the successful implementation of the RMNCAH investment framework. It is estimated that implementation of the framework will require an increase in current annual per capita public expenditures on RMNCAH from Kenyan Shillings (KSH) 1,033 (US$10.87) in 2015/16 to KSH 1,306 (US$ 13.75) by 2019/20. An additional KSH 59 billion (US$ 617 million) will be required to address the financing gap. To ensure sustainable financing for RMNCAH and address health financing fragmentation due to disjointed and poorly coordinated investments in the sector, the MOH is developing a roadmap for Universal Health Coverage (UHC) and a health financing strategy that will seek to mobilize additional domestic resources and align support from development partners to achieve UHC . Given the limited fiscal space, this investment framework recognizes that coverage and quality improvements will, to a large extent during the initial phase, depend on increased productivity and efficiency gains from ongoing investments which could release up to KSH 26 billion (US$ 277 million). This could be complemented with more efficient risk pooling that reduces out of pocket (OOP) payments for basic health care as well as catastrophic health expenditure spending by households. With an estimated economic return of three shillings and 65 cents for every shilling invested, the framework provides strong economic rationale for higher budgetary allocations by both the national and county governments. The MOH will enhance coordination mechanisms that ensure that donor support is aligned to the sector goals and objectives, promote financial risk pooling for delivering essential services, and encourage adoption of payment mechanisms that provide incentives for better productivity and efficiency in service delivery.

INTRODUCTION

The Government of Kenya is committed to universal health coverage (UHC) and accelerated achievement of the Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCAH) outcomes. Although the recent Kenya Demographic and Health Survey (KDHS) 2014 shows that Kenya has improved most of its RMNCAH outcomes, the Millennium Development Goals (MDGs) for maternal and child health could not be achieved as many challenges in coverage still remain and disparities continue to exist in service delivery. This RMNCAH investment framework responds to the urgent need to maximize the constitutionally mandated right to access RMNCAH services while addressing the concerns of suboptimal targeting and insufficient prioritization of bottlenecks that prevent evidence-based and high impact interventions from being delivered. It proposes effective, efficient and innovative strategies to achieve sustainable, equitable and accelerated improvements in RMNCAH outcomes.

The framework is the outcome of a Ministry of Health (MOH) led consultative process with counties, MOH departments, and relevant government entities at the national level as well as various stakeholders including civil society organizations (CSOs), faith based organizations (FBOs), private sector, professional associations, development partners and communities (Annex 1). It is also supported by solid analytical work triangulating data from different sources and a desk review of relevant documents to inform the prioritization process. The investment framework is therefore grounded in the latest evidence, identifies best buys relevant for the country context, priorities and affordability, and provides an integrated approach across RMNCAH areas.

This document presents a costed investment framework that lays out Kenya's RMNCAH vision. It defines the guiding principles and elaborates on the progress to date in attaining RMNCAH results as well as lessons learned, at global and country level, to inform transformational strategies for Kenya. It explains the benefits of investing in RMNCAH and highlights the returns on investment and possible impacts. To accelerate progress, the framework focuses on addressing the 'hows' rather than the 'whats'. In other words, it addresses the obstacles that prevent use of RMNCAH services with a focus on translating political commitment into sustainable results. By prioritizing areas for investment and actions to be taken at different levels, the framework aims to ensure that affordable evidence-based and high impact interventions are delivered to improve RMNCAH results.

The national investment framework takes into consideration existing RMNCAH strategies and implementation plans as well as current programs and initiatives by MOH, County Departments of Health and development partners. It will serve as a guide for the development of county RMNCAH implementation plans, which will be in alignment with County Integrated Development Plans and the County Health Strategic and Investment Plans.

VISION

The vision of the RMNCAH investment framework is:

A Kenya where there are no preventable deaths of women, new-borns or children and; no preventable still-births, where every pregnancy is wanted, every birth celebrated and accounted for; and where women, babies, children and adolescents are free of HIV/AIDS, survive, thrive and reach their full social and economic potential.

This vision is in keeping with Kenya's development program 'Vision 2030', which aims to provide equitable and affordable health care by focusing on ensuring universal access to quality preventive and curative health care.

The Kenya Constitution (2010) calls for the highest attainable standard for health including reproductive health for all Kenyans. The Kenya Health Policy (2014-30) commits to strengthening the health care system and service delivery, and the Kenya Health Sector Strategic and Investment Plan (2014-18) aims to achieve the highest possible health standards responsive to people's needs (MOH 2014A, B, MOH 2012). New policies such as Free Maternity Care, Elimination of User Fee for Public Primary Health Care Services, and initiatives such as Beyond Zero confirm Kenya's recognition of RMNCAH as a development priority and reflect its strong national commitment to bring about a change.

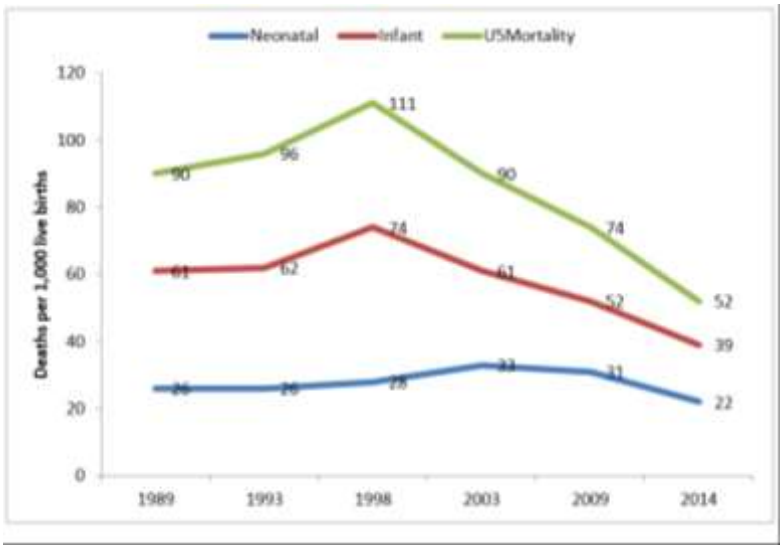
GUIDING PRINCIPLES

The Kenya RMNCAH investment framework will be guided by the following principles, many of which are articulated in the Kenya constitution:

1. Respect human and reproductive health rights and promote gender equality as envisioned in article 43 of Kenya Constitution;
2. Promote shared prosperity by making strategic investments in the health sector which will contribute to equitable growth and development;
3. Enhance efficiency, productivity, quality of services, and accountability through scale-up of evidence-based high impact interventions, performance measurement, incentives and integration;
4. Nurture a health system that is resilient, responsive and accountable to client needs and also capable of leveraging private, FBOs, civil society and community health delivery mechanisms and structures;
5. Ensure country and county leadership and ownership that will provide appropriate stewardship based on the national health sector strategies and county RMNCAH implementation plans integrated with the planning and budgeting processes and cycles; and
6. Promote continuous learning by doing, course corrections and innovation.

PROGRESS TO DATE

Figure 1: Trends in Neonatal, Infant and U5 Mortality



Source: KDHS 2014

Kenya has shown encouraging improvements in reproductive and child health outcomes over the period 2003-2014. The KDHS 2014 shows a decrease in the infant mortality rate from 52 to 39 per 1,000 live births, and a decrease in the under-five mortality rate from 74 to 52 per 1,000 live births (Figure 1) between 2008 and 2014. These declines have been driven mainly by enhanced use of mosquito nets, increases in antenatal care, skilled attendance at childbirth, postnatal care, contraceptive use, exclusive breastfeeding practices and a decrease in unmet family planning (FP) needs, as well as overall improvements in other social indicators such as education and access to water. The neonatal mortality rate (NMR) declined from 31 per 1,000 births to 22 per 1,000 live births between 2008-2014. However, during the past decade, the NMR exhibited the slowest decline. Further reductions in infant and child mortality require steeper decline in the NMR, which is closely linked to improvements in maternal health services including intrapartum care.

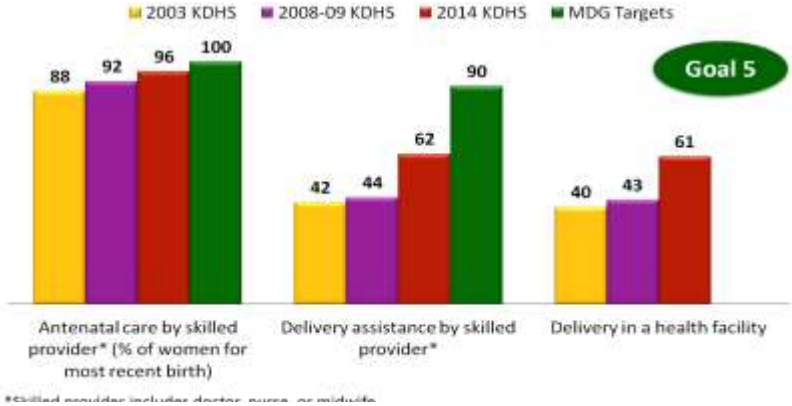
The MMR of 362 per 100,000 live births estimated by KDHS in 2014 is still high and the recent estimates of WHO, UNICEF, UNFPA, the World Bank Group and UN Population Division also highlight insufficient progress. Coverage/utilization indicators also show some improvements but much more needs to be done to address inequities and to reach UHC. The contraceptive prevalence rate (CPR, any method) among married women has increased to 58 percent in 2014 from 46 percent in 2008/9 with a decline in unmet need for FP. Nearly two thirds (61 percent) of births took place in a health facility and 62 percent of pregnant women were delivered by a skilled attendant. Postnatal care (PNC) increased from 42 percent in 2009 to 51 percent in 2014 (Figure 2).

The total fertility rate has declined from 4.6 in 2008/9 to 3.9 in 2014; however, there has been no change in teen pregnancy with one in five (18 percent) adolescents in the 15-19 years age group having started child bearing due to early marriage, high unmet need for contraception and poor access to FP services.

Nutritional status of children under-five has improved with a decline in stunting from 35 percent in 2008/9 to 26 percent in 2014. However, one out of every four children still remains shorter for

their age, a factor that adversely affects their future health, well-being and economic productivity.

Figure 2: Trends in Coverage for Maternal Health Services



Source: KDHS 2014

Nearly half (48 percent) of households have access to an insecticide treated net; 53 percent of women and 46 percent of men were tested for HIV in the past 12 months and received the test results. Overall immunization coverage for basic vaccines increased from 65.3 percent 2008/9 to 71.3[2] percent in 2014 and coverage for measles, pentavalent and pneumococcal vaccine remained high. Prevalence of exclusive breastfeeding among children under 6 months has nearly doubled from 32 percent to 61 percent during the same period. Table 1 is a summary of progress to date for Kenya compared with some indicators from the Sub-Sahara Africa region.

Table 1: Progress in Key RMNCAH Indicators

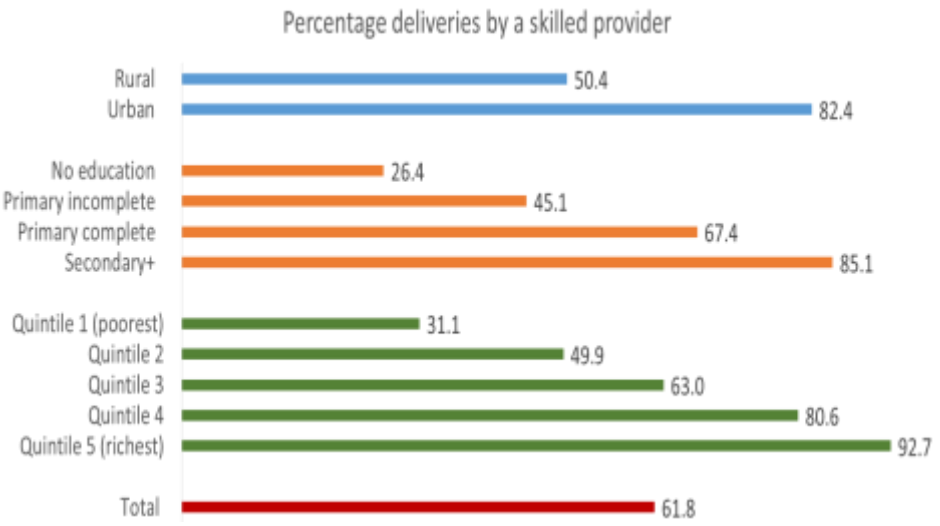
Key Indicators	KDHS 2008/09	KDHS 2014	SSA region
Neonatal mortality rate (per 1,000 Live births)	31	22	31.1*
Infant mortality rate (per 1,000 Live births)	52	39	61.1*
Under-five mortality rate (per 1,000 Live births)	74	52	92.4*
Maternal mortality ratio (per 100,000 live births)	488	360	510*
Total fertility rate (per women)	4.6	3.9	5.0*
Teen pregnancy (%)	18	18	-
Children under-five stunted (%)	35	26	-
Deliveries attended by a skilled provider (%)	43	62	48.6**
Pregnant women received any antenatal care (%)	92	96	77**
Children received all basic vaccines (%)	65	71	-
Children under 6 months exclusively breastfed (%)	32	61	37.7**
Contraceptive prevalence rate (any method) among currently married women (%)	46	58	23.6**
Unmet need for family planning (%)	25	18	24.4**

* Source- World Bank 2013, **2011, NA – Not available,
KDHS – Kenya Demographic and Health Survey, SSA – Sub Sahara Africa

[2] Percentage of children age vaccinated by 12 months of age who received basic vaccinations

Despite these improvements at the national level, challenges remain in addressing the geographical, rural/urban, socioeconomic and educational disparities and inequities. In particular, education and wealth are strongly associated with service utilization. Only about half of mothers residing in rural areas received skilled care or delivered in a health facility compared to 82 percent of mothers residing in urban areas. About a quarter of mothers without education received skilled care during delivery compared to 85 percent among mothers with secondary or higher education (Figure 3).

Figure 3: Deliveries by a Skilled Provider



Source: KDHS 2014

Similarly, 20 percent of women with no education received PNC within two days compared to 68 percent of women with secondary or higher education. Thirty percent of women belonging to the lowest wealth quintile received PNC compared with 71 percent in the highest wealth quintile. Forty three percent of rural women received PNC compared with 65 percent of urban women.

REMAINING GAPS AND OBSTACLES

The remaining gaps and obstacles are numerous and can be grouped into four main areas:

- **Inequitable coverage** among certain areas or population groups, including adolescents, requiring well targeted additional investments.
- **Demand side barriers** that limit access and utilization of proven high impact interventions to realize Kenya's RMNCAH vision. These include long distances to health facilities, high costs, religious and sociocultural beliefs and practices and low status of women as well as lack of knowledge and information. The demand side barriers get further compounded by provider attitudes, poor quality and limited integration of services that also hamper and discourage utilization of services.
- **Supply side challenges** due to suboptimal functioning of the health systems (infrastructure, human resources for health (HRH), supply chain, health financing, health Information, and leadership/governance). The main health system challenges include poor workforce distribution and productivity coupled with funding gaps and weak supply chain management

for provision of essential RMNCAH commodities; incomplete and poor quality of data from routine health information systems that hamper evidence-based decision making and accountability for results; inability to optimize the devolution dividend and make effective use of resources from both domestic and partners due to capacity challenges and weak coordination at national and county levels.

- **High burden of HIV and AIDS** and related mortality and morbidity remain a challenge.

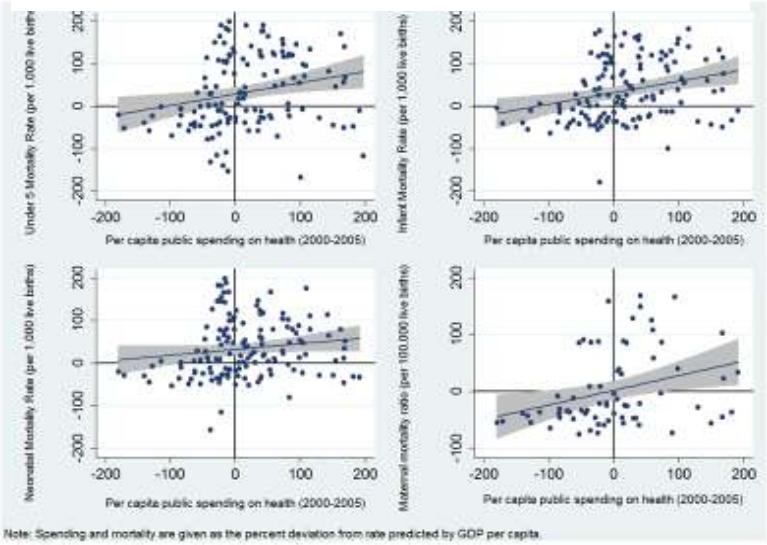
The RMNCAH investment framework focuses on strategies to address these major bottlenecks and gaps.

LESSONS LEARNED

Lessons from international experiences informed the Kenya RMNCAH investment framework to identify priority actions required for smart, scaled up and sustainable financing.

- **Increased government spending is necessary to scale-up interventions but ensuring effective coverage with an equity focus is critical to improve health outcomes.** There is mixed evidence on the effectiveness and efficiency of increased government health spending to improve health outcomes especially of the poor (Figure 4). Increased government spending is often accompanied by expansion in access to services, which bypass the poor who also typically pay higher out of pocket (OOP) payments relative to their incomes (Gupta et al 2001). Inefficient spending and poor quality services also weaken the impact of increased spending. In addition, in less developed countries, the infrastructure needed to access health care may not exist, making the increased health care spending ineffective (Anyanwu and Erhijakpor, 2007, Bokhari et al, 2007). Higher allocations to primary health care rather than secondary and tertiary care can be more effective especially when implemented in good governance settings (Gupta et al, 1999, Filmer et al, 2000). This investment framework therefore focuses on improving efficiency, equity and effective

Figure 4: Relationship between Expenditure and Health Outcome



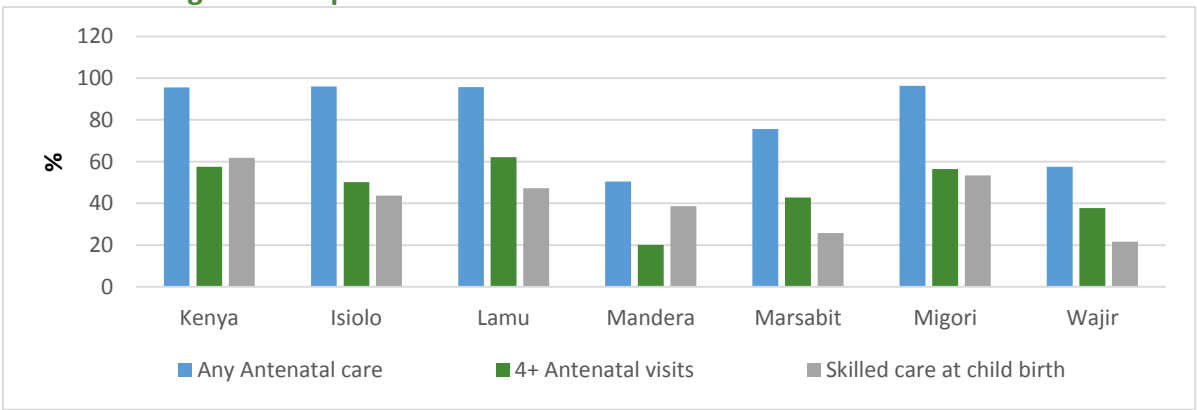
Source: World Bank 2013

coverage to accompany increased government spending as set out in the health financing strategy.

- **Effective partnerships are critical for success as fragmented financing and governance cause high transaction costs, hindering effective harmonization at the country level.** Globally, there is a multitude of different financing mechanisms and partnerships for RMNCAH. Despite the recent efforts to strengthen coordination, the existing financing initiatives can still cause fragmentation in financing streams and high transactional costs at country level. Fragmentation also leads to suboptimal distribution of resources. Additionally, it remains hard to track donor financing for RMNCAH and to drive accountability for commitments made. Effective and trusting partnership between government and their development partners at the country and county levels on the principles of the International Health Partnership can help to resolve this issue. This investment framework provides a unique opportunity for further harmonization by coordinating and matching available resources against prioritized needs to attract new partners beyond the traditional bilateral and multilateral partnerships such as foundations, private sector, etc.

- **Integration can optimize the efficient use of resources and reduce duplication and wastage.** Integration of services helps to reduce missed opportunities to optimize linkages of RMNACH with other programs including HIV and AIDS and sexually transmitted infections (STIs). The client who comes into contact with the service delivery site has multiple needs and all these should be met preferably in the same consultation, either on site or through facilitated referrals. Integration saves time and promotes cost effective quality care. Besides integrating the health system, linkages must be established with other related non health sectors. Integration is also critical for advancing the continuum of care approach (adolescence, pre-pregnancy, pregnancy, childbirth, postnatal and childhood). Figure 5 illustrates the huge gap in continuum of care and highlights the differences between ANC utilization and skilled attendance at childbirth. An integrated national investment framework has the potential to improve coordination between two levels of government, MOH departments and among different development partners, aligning investments to key priorities.

Figure 5: Gaps in Continuum of Care for Maternal Health Services



Source: KDHS 2014

- **Incentives are effective in changing and influencing behavior of providers and users to improve health outcomes.** The current spending has not created incentives linked to performance. Weak accountability and monitoring systems have made it difficult to measure results. Approaches such as results based financing (RBF), which includes performance based financing at the health facility level as well as demand-side incentives, link payment to verified results and provide autonomy on the use of resources to attain the desired results. Rigorous evidence on the impact is still limited and mixed. However, positive results appear to dominate in countries such as Rwanda and Argentina showing improvements in both quantity and quality of services provided. In Argentina, RBF was found to reduce the probability of low birth weight by 19 percent and probability of in-hospital neonatal mortality by 74 percent. In Zimbabwe, initial analyses showed that institutional deliveries increased by 14 percentage points and post-natal care by 12 percentage points. (Basinga et al. 2011; Gertler et al. 2014; World Bank, 2013). In Kenya, RBF was piloted in Samburu County in 2011 and an end-line evaluation showed progressive increase in the delivery of maternal and newborn health (MNH) services, improvement in the average clinical quality score from 63 to 93 percent and improvement in the proportion of facilities holding regular management committee meeting. Different RBF approaches are proposed in this investment framework so as to address demand and supply side barriers.

- **Devolution has the potential to address inequities and to enhance accountability.** International experience shows that decentralization improves accountability and citizen participation, and inspires good governance by strengthening the capacity of CSOs in social accountability. Although, many structural and process challenges still exist, lessons from Ghana, Ethiopia and Brazil show that continuous capacity building and learning, clearly defined roles and responsibilities, and strong and functional governance system with a unified system of planning, budgeting and reporting are key for achieving the devolution dividend to deliver quality RMNCAH services. Lessons from India also show that a flexible funding system and innovations to improve a decentralized system as well as reforms in human resource management can improve disbursements from national to devolved structures, reporting of resources and delivery of health services round the clock (Kenya MOH, High Level Forum, 2015). Governance and leadership are highlighted in this investment framework, with a particular focus on building capacity for new roles and responsibilities in a devolved setting.

- **Political commitment has been key to improved RMNCAH outcomes in all countries that have made progress on MDGs 4 and 5.** Rwanda and Ethiopia are good examples of countries that have made accelerated progress towards maternal and child health MDGs due to political commitment at all levels. Kenya has prioritized investing in ending preventable maternal, newborn, child and adolescent deaths and morbidities and is implementing several initiatives such as the Beyond Zero campaign and removal of user fees for maternity services. Community engagement can also generate political will at county level.

WHY INVEST IN RMNCAH?

There is growing evidence that investing in women, children and adolescents has high returns to society and the economy by saving lives, reducing morbidity and mortality, and improving wellbeing (Bhutta et al., 2013, 2014, NCPD and PRB 2012). Although Kenya has made good progress over recent decades in reducing the number of child deaths, too many mothers and children continue to die each year despite the availability of feasible, cost effective and evidence-based solutions that could be scaled up. For example, providing contraceptives and skilled care at birth could prevent half of maternal deaths and dramatically reduce unintended pregnancies, unsafe abortions and mother to newborn transmission of HIV. Using impact modeling, the Kenya National Council for Population and Development (NCPD) in 2015 estimated that with an increased use of FP services to reach a contraceptive prevalence rate (CPR) of 64.7 percent by 2020, Kenya would be able to save the lives of more than 20,000 mothers and 144,000 children, and avert more than 7.7 million unintended pregnancies and 1.4 million unsafe abortions. Other programs have shown huge returns from investing in FP programs (Frost et al 2014).

Preventive/promotive RMNCAH investments could lower health care costs in the long run as healthier and well-nourished women, children and adolescents require less health care. Unexpected and catastrophic OOP expenses, especially for the poor, would also be lower.

Maasai mother in Kajiado, Kenya. Photo: © Georgina Goodwin/World Bank

Global evidence clearly shows that investing in RMNCAH is a smart buy. For an additional US$1 invested in women's and children's health, there would be US$9 of economic and social benefits (Global Strategy for Women's Children's and Adolescent's Health 2016-2030, UN). Investing in women is a smart investment that improves productivity, engenders economic empowerment, closes the gender gap and has an inter-generational impact. Investing in early childhood development has an estimated return of 7 percent to 10 percent from better outcomes in education, health, economic productivity and reduced crime.

Investing in adolescents would increase social and human capital resulting in a healthier, better skilled, and educated future workforce which will assist Kenya in realizing its demographic dividend. The 15-35 years age group is rapidly increasing and is now estimated to contribute to about two-thirds of Kenya's adult population. Kenya has a great opportunity to capture the demographic dividend.

With fewer births each year, the working-age population will grow larger in relation to the young dependent population. With more people in the labor force and fewer young people to support, dependency ratios will decline creating a window of opportunity for rapid economic growth if Kenya makes the right social and economic investments and policies that are able to produce healthy and competent workforce ready for the labor market and generate sufficient jobs. However, the gains are neither automatic nor guaranteed without the timely right mixture of investments.

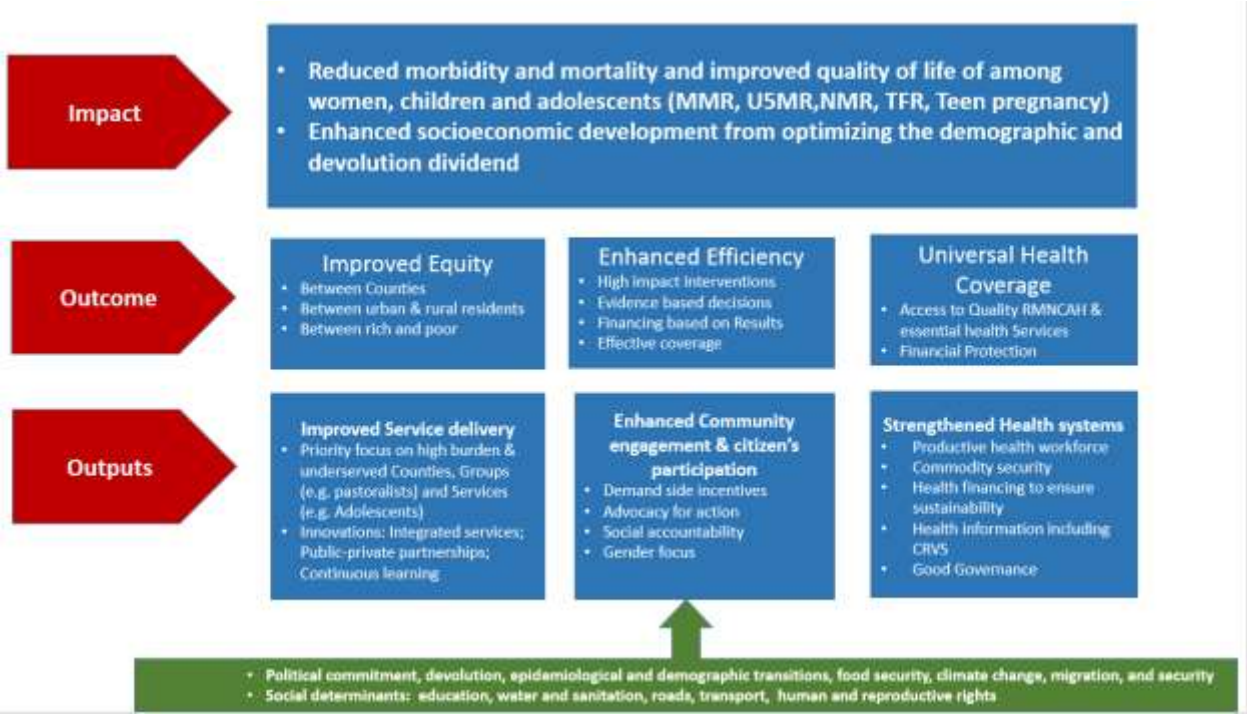
This is an opportune time for Kenya to invest in RMNCAH as proven and affordable interventions exist and far more is known about innovative service delivery channels and approaches which accelerate coverage and quality of RMNCAH care. We know what needs to be done but how it needs to be done in a specific country context still remains largely elusive. Furthermore, devolution provides a great opportunity to address geographical and socioeconomic inequities and increase coverage, improve service delivery for underserved areas and populations and invest in strengthening county health systems (KPMG 2014).

With the strong political commitment, recent economic development, improvements in education and the reduction in the gender gap, it is possible for Kenya to achieve sustainable improvements in RMNCAH services and realize its Vision 2030 goals. In addition, the growing international commitment and momentum gathered through the global movement of Every Woman and Every Child and its global financing facility as well as other international initiatives that support FP, nutrition and elimination of infectious diseases, and the SDGs all provide a great opportunity to accelerate progress in RMNCAH outcomes.

THEORY OF CHANGE

The investment framework choice of interventions and pathways towards improving RMNCAH outcomes is informed by the theory of change, which is summarized in Figure 6.

Figure 6: Improving RMNCAH - Theory of Change



Expected outcomes include UHC with financial protection, improved equity and enhanced efficiency. All these can lead to the desired impact to reduce morbidity and mortality as well as advance realization of the demographic divided contributing to Kenya's socioeconomic development (NCPD and PRB 2014).

Prioritized investments are needed to ensure that underserved populations and areas will have access to services and that equitable coverage is improved. Scaling up of well-known high impact interventions, such as institutional deliveries and FP, is important to improve RMNCAH indicators (Dickson et al 2014). This can only be achieved if key bottlenecks in service delivery are addressed, including enhanced quality of care and integration in already existing services. Innovative approaches, like private-private partnerships and performance based financing, are needed to address supply side barriers. Other solutions will be required to address demand side barriers, such as community engagement and demand side financing. County governments will make evidence-based decisions depending on their specific needs and priorities to efficiently use resources to achieve UHC.

Strengthening the health system is critical to ensure the effective and efficient availability and use of quality RMNCAH services. Improving workforce distribution, staff competency and

productivity is vital as it constitutes the largest share of health expenditures. Better availability of essential medical supplies, such as vaccines, FP commodities, and necessary equipment will enable the staff to provide the priority interventions. Sustained availability of adequate financial resources is essential for the successful implementation and desired impact.

The national government will work with county governments and development partners to improve efficiency of existing resources, increase both domestic and external resources, and ensure harmonized use to address inequities. Strengthened leadership and governance at all levels are key pillars to coordinate effectively, reduce leakages, improve efficiency and promote sustainable service delivery. The availability of data, including births and deaths through CRVS, will contribute to better decision-making and enhance accountability to results. A multisectoral approach will be required to address other social and infrastructure determinants such as education, gender equality, water and sanitation, transport and communication and food security. Strong political commitment, respect for human and reproductive health rights and promotion of peace and security remain critical for achieving improved RMNCAH outcomes.

WHAT TO INVEST IN?

The consultative process identified numerous obstacles and potential strategies, which were then prioritised by MOH Division of Family Health with input from relevant stakeholders, and included analysis on where to invest. As a result, three main strategies are at the core of this RMNCAH investment framework:

1. Address disparities and increase equitable coverage through prioritized investments in underserved counties, and accelerate action for underserved and marginalized populations.
2. Address prioritized demand side barriers to increase utilization, coverage and affordability of RMNCAH services.
3. Address prioritized supply side bottlenecks in the health system to improve access to high impact interventions delivered efficiently and effectively while ensuring financial protection for the poor.

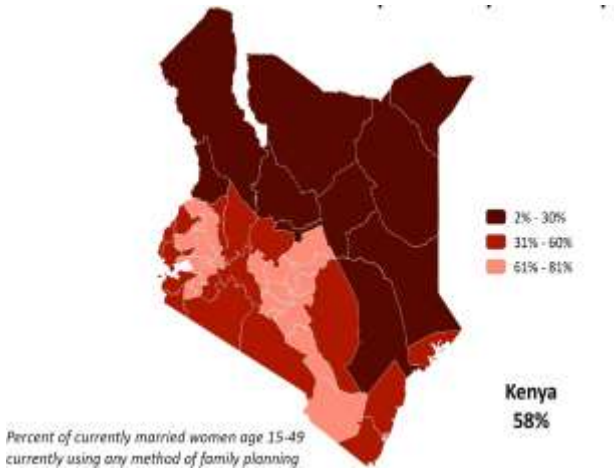
Each of these strategies is elaborated in this section, highlighting immediate actions to be taken at national and/or county level.

Address Disparities and Increase Equitable Coverage

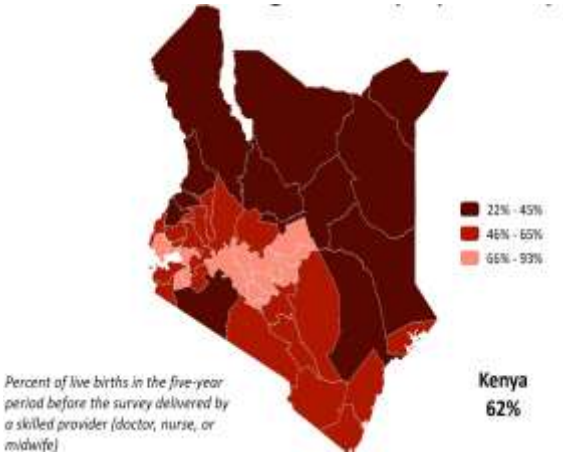
Despite recent improvements at the national level, many challenges remain. Sustained investment in priority interventions is needed to address disparities among different income, geographic and educational groups. Figures 7a and 7b show disparities among counties in use of contraception and skilled birth attendance (SBA). Counties with low contraceptive use also tend not to have skilled birth attendants during delivery.

Figure 7a & 7b: Disparities by Counties in Contraception Use and Skilled Birth Attendance

Contraception Use by County



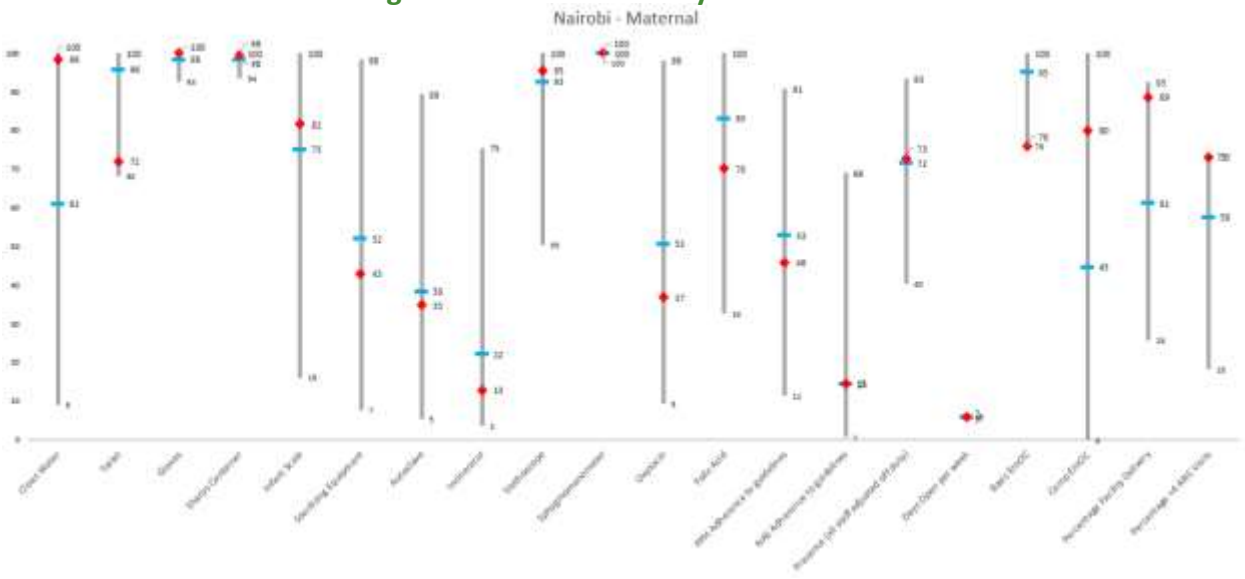
Skilled Birth Attendance by County



Source: KDHS 2014

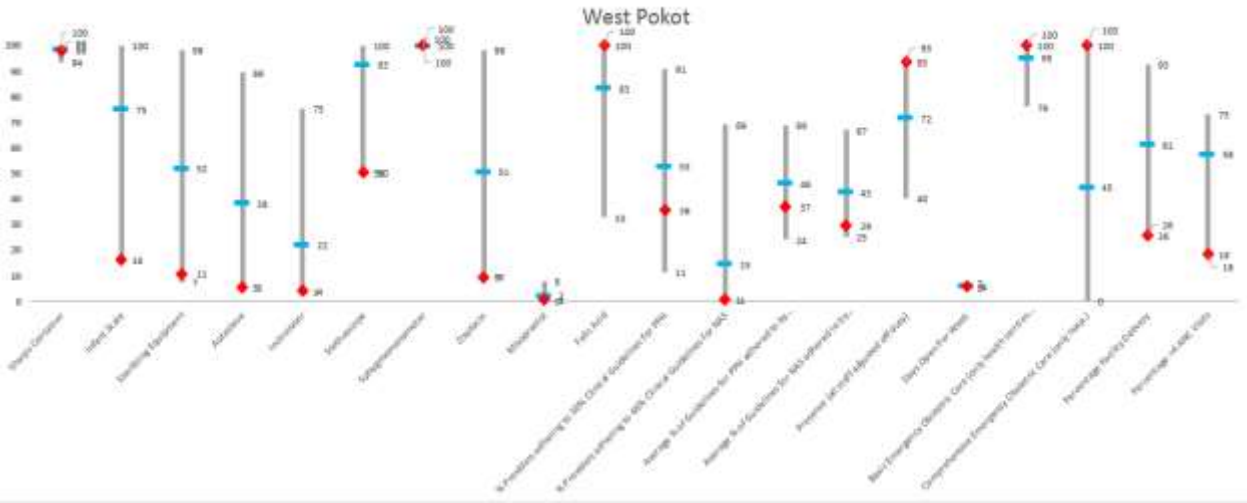
Figures 8a and 8b illustrate county performance analysis in relation to national averages (the red and blue dots respectively) and identify specific areas in Nairobi and West Pokot that require additional prioritized investment for improvement. Based on data availability, other priority counties will need to undertake similar analyses to identify priority investment areas. From these figures, we learn that 73 percent of pregnant women in Nairobi have over four ANC visits while in West Pokot, only 18 percent had more than four visits. Similarly, facility delivery is 93 percent in Nairobi and only 26 percent in West Pokot. Hence, the investment plans for the different counties will prioritize different actions and strategies while building on information in this national investment framework.

Figure 8a: Nairobi County Performance



Source: KENYA SDI 2013 (World Bank 2013)

Figure 8b: West Pokot County Performance



Source: KENYA SDI 2013 (World Bank 2013)

Meet the Needs of Urban Slums and Informal Settlements

Kenya is urbanizing rapidly with 30 percent of the population residing in cities. By 2033, the country will likely reach a spatial tipping point when half of the population will live in cities (World Bank 2011). Cities can become growth centers if the government invests more in education and health of urban slum dwellers and creates infrastructure. On average, about 60 percent of the poorest women in the cities reviewed including Nairobi receive the recommended minimum number of prenatal care visits (compared to 90 percent of the wealthiest women), and about 70 percent give birth with a skilled health professional (compared to 95 percent of the wealthiest women). The majority of women giving birth in slums are served by privately owned, substandard, often unlicensed clinics and maternity homes. An audit of 25 facilities concluded "the quality of emergency obstetric care services in Nairobi's slums is unacceptably poor, with inadequate essential equipment, supplies, trained personnel, skills, and other support services" (Save the Children 2015).

Though progress has been made, the gap between the rich and poor has increased. In Kenya, child death rates for children born to the poorest urban households have declined to 31 percent since the 1993 KDHS, but the decrease is less than half compared to that of the children born in the richest urban households (64 percent) which highlights striking inequities. "The infant mortality for the poor currently stands at 75 per 1,000 live births compared to the richest segment at 19 per 1,000". Women in the slums deliver in facilities, which do not meet minimum standards, and pay more for poor quality services (APHRC 2009).

For this investment case, urban slums will be specifically targeted to address equity and reduce OOP payments for the urban poor. This will include innovative approaches to deliver quality health services through public private partnerships, improve the existing infrastructure for sanitation and environment, and enhance security.

Prioritization of Counties Based on Maternal and Child Health Outcomes and Equity

To address equity and increase coverage, the RMNCAH investment framework, using analysis that triangulates coverage indicators and burden, prioritizes investments in 15 counties with high burden of poor maternal and child health outcomes, low coverage rates, and large underserved populations. In addition, five additional marginalized counties with underserved populations were selected for accelerated action and investment to improve national impact within the next five years (Table 2). Detailed analysis and likely impact on RMNCAH key indicators are described in Annex 2.

Table 2: Counties Prioritized for Investment

Kakamega	West-Pokot	Marsabit
Nairobi	Samburu	Isiolo
Bungoma	Migori	Kitui
Turkana	Trans-Nzoia	Wajir
Nakuru	Garissa	Tana River
Mandera	Kilifi	Lamu
Narok	Homa Bay	

This investment framework will help Counties to develop their own RMNCAH costed implementation plans, benefiting from this national investment framework, which has identified and prioritized the most effective best buys for RMNCAH. The county implementation plans will be developed through a participatory approach and based on their analysis of key service delivery challenges, performance gaps and prioritized obstacles and solutions tailored to their local needs and cultural contexts. They will be an integral part of county integrated development plans and their strategic and investment plans.

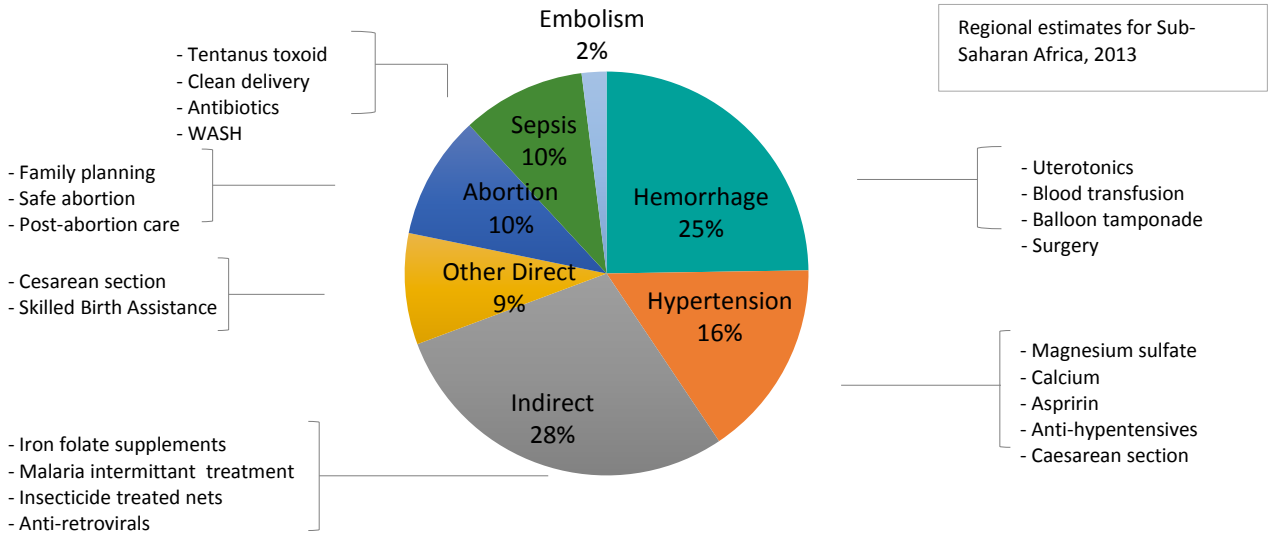
Reduce Prioritized Demand Side and Coverage Barriers to Increase Access, Utilization, and Coverage and Scale-up of High Impact RMNCAH Interventions and Services

Evidence-based and cost-effective high impact interventions to improve RMNCAH outcomes are well known and have been described by the Lancet Series and WHO/UNICEF Child Survival Strategy. They are in alignment with the Kenya Essential Package for Health (KEPH) which defines health services and interventions to be provided for each of the priority policy objectives, by levels of care and population cohorts to achieve UHC (Lawn et al 2014, Liu et al 2014). However, numerous bottlenecks, both supply and demand side, continue to exist and prevent women, children and adolescents from accessing or using these services. The following section elaborates on the high impact interventions and subsequently identifies strategies and immediate actions to address the prioritized bottlenecks.

High Impact Interventions

The main causes of maternal mortality in Kenya are haemorrage, hypertensive disorders, sepsis, obstructed labor, abortion complications and other indirect causes (HIV/AIDS). Figure 9a shows high impact interventions of proven efficacy to address maternal mortality in Kenya.

Figure 9a: High Impact Interventions by Cause of Maternal Death in Kenya, based on Regional Estimates

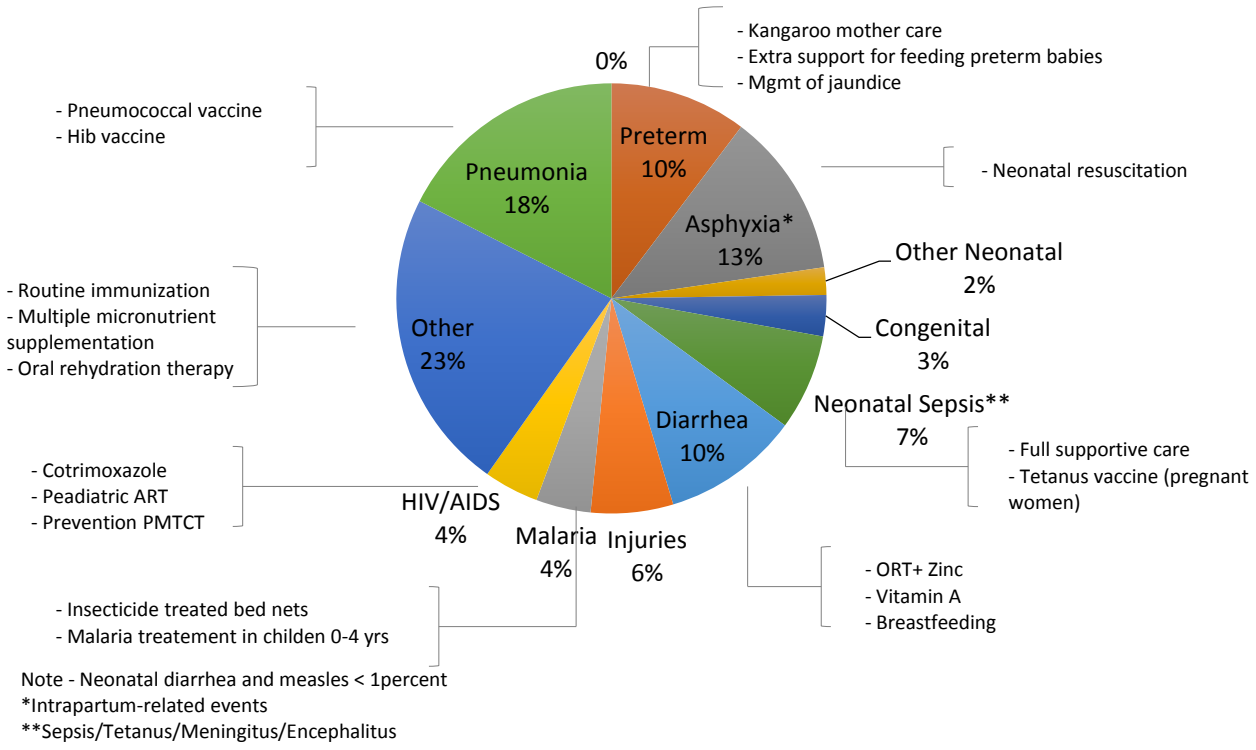


Sources: WHO 2014; Stenberg et al., 2014; PMNCH, 2011; Say et al., 2014; Benova et al., 2014; WHO 2012b; Requejo et al., 2012

The main causes of child mortality are acute respiratory infection (ARI), prematurity, asphyxia and dehydration caused by severe diarrhoea. Figure 9b shows the high impact interventions of proven efficacy to address the causes of child deaths in Kenya. The high impact interventions include: immunization against measles and other vaccine preventable diseases including childhood pneumonia; oral rehydration salts and zinc for diarrhea treatment; amoxicillin for childhood pneumonia; treated bed nets and artemisinin-based combination (ACT) for malaria; oral rehydration salts, antibiotics for treatment of dysentery, pneumonia treatment for children, breastfeeding counseling and support, complementary feeding counseling and support, management of severe malnutrition in children, Vitamin A supplementation in infants and children. Evidence shows that in Sub Saharan Africa, fortification and supplementation with Vitamin A or zinc and case management of pneumonia, oral rehydration therapy and measles immunization are most cost effective costing about $100 per disability adjusted life years (DALY) averted (Edejer et.al. 2005).

For saving lives of newborns and prevention of still births, high impact interventions include: neonatal resuscitation, kangaroo mother care, clean delivery practices and immediate essential newborn care, antenatal corticosteroids for preterm labor, antibiotics for preterm premature rupture of membranes, and treatment of neonatal infections/newborn sepsis.

Figure 9b: Causes and High Impact Interventions to Address the Causes of Death among Under-Five Children, 2012



Sources: WHO/CHERG 2014; Stenberg et al., 2013; PMNCH 2011

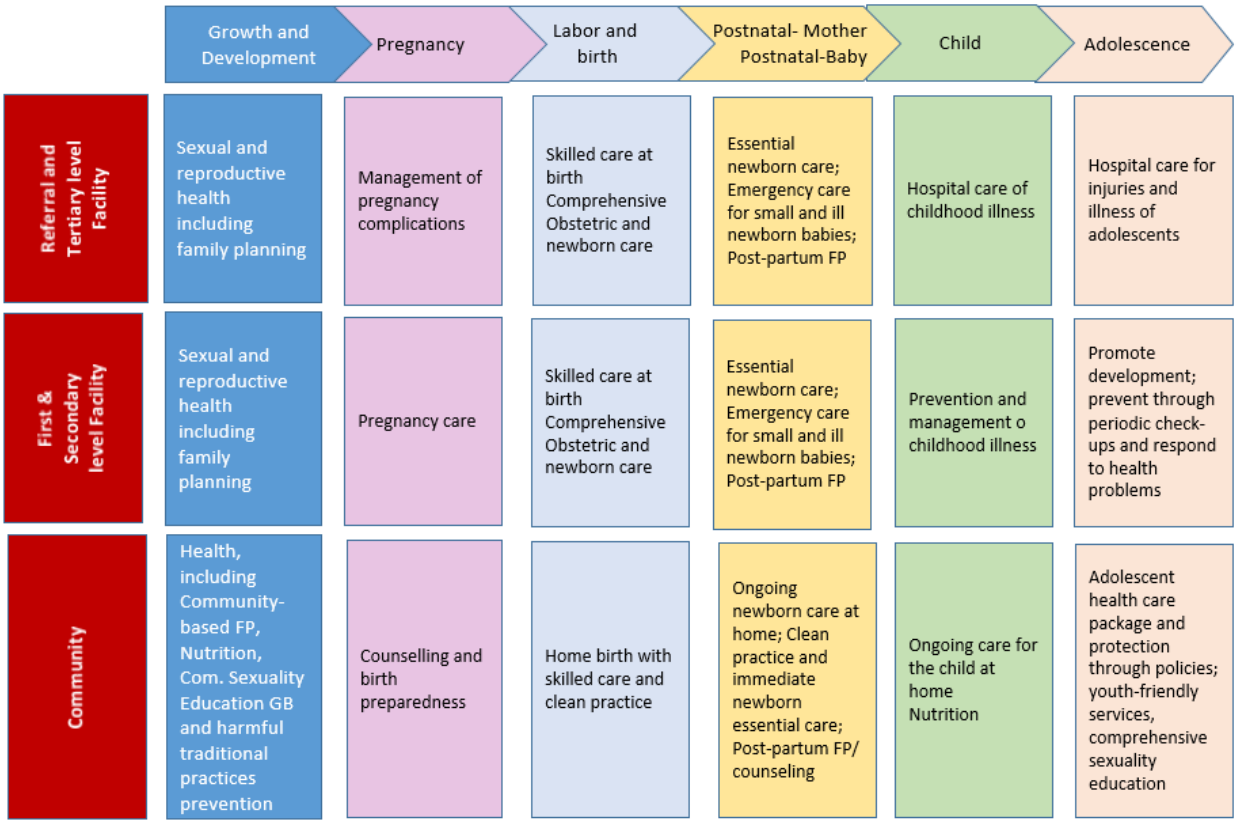
For adolescents, key interventions focus on addressing risks from harmful practices (e.g. early child marriage, early child bearing, forced marriage, female genital multilation, gender-based violence) and protective factors addressing these risks. In addition, adolescents have higher risks of pregnancy and delivery complications. Although there are still gaps in understanding adolescents needs and how best to address them, there is growing evidence of what works and what does not. The challenge has been that what does not work continues to be implemented and what works is not always implemented effectively or long enough to show impact. Systematic reviews and meta-analyses suggest that: comprehensive school based education, out of facility approaches, increasing access to acceptable services (e.g. youth friendly services if they meet all the implementation requirements), and long term mass media programs can be important and effective avenues to reach diverse groups of youth if implemented effectively (Lule et al., 2006 and Denno et al., 2012, Chandra-Mouli et al, 2015); peer education programs are successful in reaching large numbers of youth and increasing knowledge but may not change behaviour (Maticka-Tyndale et al 2010); conditional/non conditional cash transfers can change

behaviour (Baird et al 2014, Handa, 2014, Haushofer et al., 2013); while youth centres are not cost effective for uptake of ASRH services (Zuurmond et al., 2012).

To make an impact, evidence-based and proven interventions must be implemented in a coordinated and complementary way to ensure effective continuum of care, addressing the needs of the mother, newborn, child and adolescent throughout the life cycle. This involves strengthening the linkages between the household, community, primary health facilities and district hospitals and ensuring that quality services are acceptable, accessible, affordable and available at the right place and right time as illustrated in Figure 10.

To optimize resources, prioritized interventions are to be implemented in an integrated way ensuring continuum of care. Annex 3 shows in detail the package of services and interventions to be provided at the community (including through outreach), health facility and/or hospital level respectively. Bundling of these services and providing them in an integrated way is most cost-effective and ensures reductions in missed opportunities for providing these interventions with proven efficacy for RMNCAH (Annex 4).

Figure 10: High Impact Interventions along the Continuum of Care



Source: Global Strategy for Women's Children's Adolescents' Health Draft *modified* (2015)

Strategies and Immediate Actions to Increase Access, Utilization, Coverage and Affordability of RMNCAH Services

Women, children and adolescents/youth must have access to affordable, quality and respectful RMNCAH services. Both supply and demand side obstacles need to be targeted to address inequitable distribution of health facilities. To improve coverage, utilization and quality of these high impact interventions, this section first elaborates immediate actions to address cross-cutting issues such as, increase demand, increase access, improve quality and enhance integration between services. In addition, immediate and long-term solutions to address prioritized barriers to utilization in each RMNCAH program are proposed for this investment framework.

Increase demand for services

Sociocultural factors, inadequate knowledge about benefits of investing and using RMNCAH services and low status of women in the household and community limits the demand for RMNCAH services. Poor quality of care and fear of disrespect and abuse by staff influence women's decisions to seek health care.

Key strategies to address these barriers include: strategic behavior change communication with key stakeholders to increase knowledge and improve health seeking behaviors of individuals, families and communities; and use of demand side financing.

Key immediate actions:

- Engage communities through religious, political and community leaders/gatekeepers to address sociocultural barriers.
- Promote generation of evidence on gender barriers and develop and evaluate innovations and strategies to address them.
- Involve men to enhance use of services by women, adolescents and children.
- Encourage greater participation of women in the decision making at the health clinic/service levels.
- Define and operationalize the role of community health workers/volunteers (CHW/Vs) in community engagement and social mobilization, including addressing financial requirements for training and motivation.
- Offer incentives to CHW/Vs and traditional birth attendants (TBAs) to accompany mothers/children to facilities.
- Involve CSOs and community-based organizations (CBOs) to enhance community engagement and promote utilization of health services.
- Implement sustained mass and social media campaign for behavior change using indigenous languages and interactive sessions.
- Introduce demand side incentives such as (conditional or unconditional) cash transfers and mama kits.

Improve access by optimizing functional existing health services, including use of outreach and private sector service provision

Some populations travel significant distances to reach health facilities and outreach services remain inadequate and erratic especially for mobile pastoralist and nomadic populations. Access barriers can be addressed by optimizing the functionality of existing health facilities and strategically using outreach services to complement services from fixed facilities to reach mobile nomadic and pastoralist populations.

Key immediate actions:

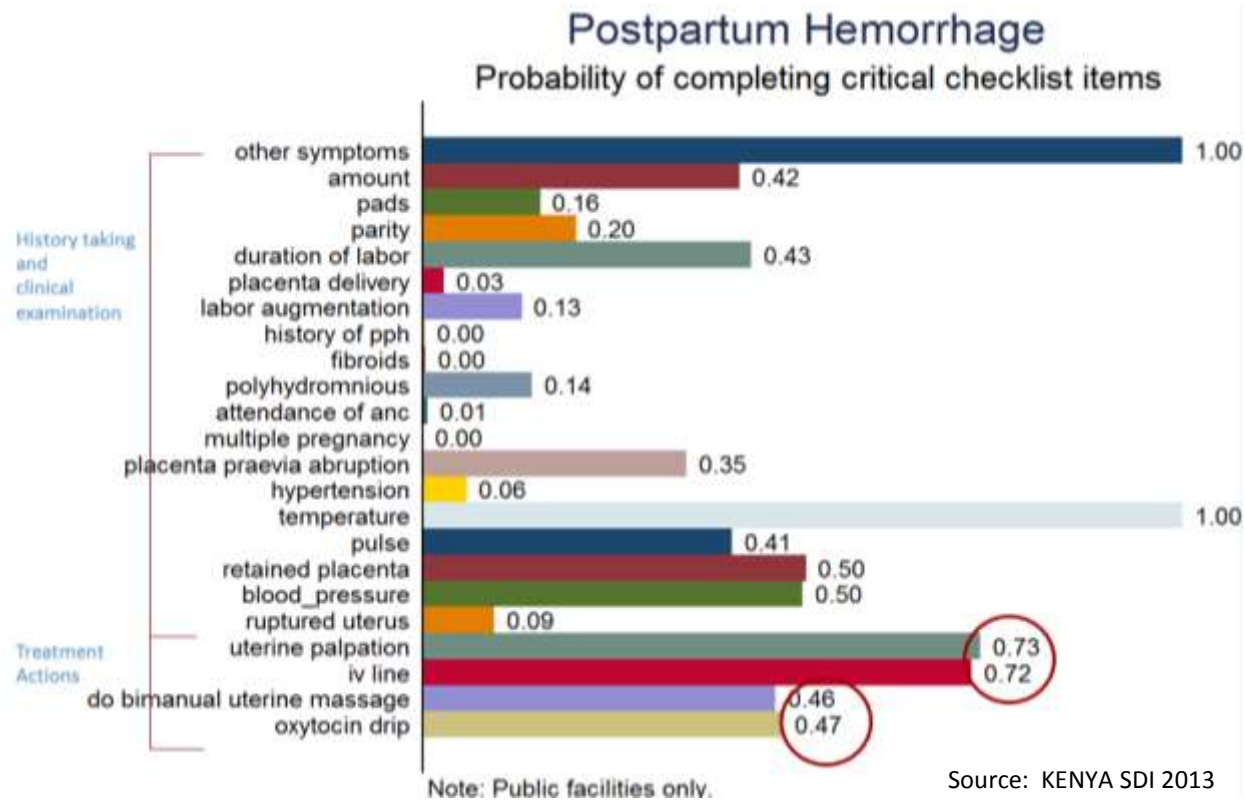
- Map existing health providers—public, FBOs, private—in each sub county and review against service delivery needs.
- Rationalize existing public health facilities up to Level 4 based on global norms for basic and emergency obstetric, newborn and child care.
- Operationalize the existing public facilities and incrementally address key gaps in staffing, infrastructure, equipment, drugs and commodities and utilities (water, sanitation and electricity) giving priority to basic emergency obstetric and newborn care (BEmONC) and comprehensive emergency obstetric and newborn care (CEmONC) services.
- Partner with/contract FBOs or private providers where such options are available.
- Develop and implement micro-plans for delivering integrated outreach services/mobile clinics targeting hard to reach and underserved groups such as nomadic populations.
- Offer demand side incentives (e.g. transport vouchers or mobile money transfers to underserved populations and for under used services).
- Establish maternity waiting shelters for hard to reach populations, especially nomads.

Enhance quality of services

High quality services enhance public trust and willingness to pay thereby enhancing sustainability.

Providers must accurately diagnose, adhere to clinical guidelines and have the skills and competencies to manage maternal and newborn complications and treat the sick child according to clinical guidelines. However, on average, less than half (41percent) of the checklist items for postpartum haemorrhage (PPH) were completed by public providers. Only 44 percent had taken the correct actions for treatment of postpartum haemorrhage (Figure 11).

Figure 11: Probability of Completing PPH Checklist



Provider skills and competencies to manage obstetric complications are limited. For example, three-quarters of providers mentioned uterine palpation and introduction of an intravenous line to manage obstetric haemorrhage, while less than half mentioned starting an oxytocin drip.

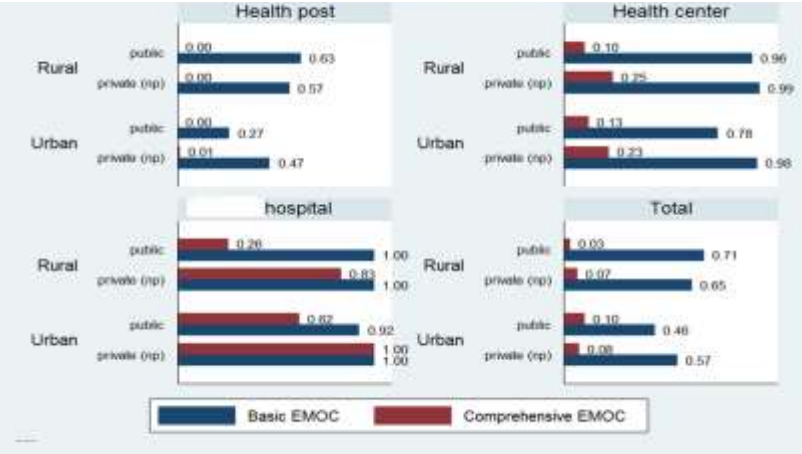
Key immediate actions:

- Implement innovative and locally appropriate quality assurance programs and use of appropriate tools such as Kenya Quality Model for Health (KQMH), Standard Based Management and Recognition (SBMR), HIV Quality Care program (HIVQUAL). Continuous Quality Improvement (CQI), and Client Oriented Provider Efficient Services (COPE) for providers and clients in facilities.
- Define and refine the legal framework and codes of conduct to enforce compliance with incentives linked to improved quality.
- Provide appropriate and targeted performance/results based incentives to motivate health providers.
- Train health care providers in customer care and respecting patient's rights and views.
- Promote community involvement in quality assurance.
- Regularly provide supportive supervision and on the job mentorship to enhance provider competencies in RMNCAH.

Maternal and newborn health services (MNH): Address barriers to utilization of MNH services, especially emergency care

There is poor access, availability and underutilization of MNH services due to a combination of demand side challenges (e.g. low value to maternal care, fear of disrespect and abuse, privacy, behavior of health staff and preference given to TBAs, especially in rural and pastoralist communities), and supply side gaps (e.g. health provider skills, shortage of midwives, commodities equipment and critical infrastructure such as functional labor rooms and laboratories). Although availability of BEmONC is relatively good at hospitals and health centers, there is a high degree of variation in CEmONC provision ranging from 62 percent at urban public hospitals and a very low 26 percent at rural public hospitals (Figure 12). A weak referral system remains a key obstacle to women accessing emergency care when complications arise.

Figure 12: Comparison of Availability of Obstetric Services between Rural and Urban Health Facilities



Source: KENYA SDI 2013

Only one-quarter of health facilities offering BEmONC had all five essential inputs required: (1) stethoscope, (2) sphygmomanometer, (3) sterilizing equipment, (4) oxytocin, and (5) clinical skills to manage maternal and neonatal complications (PPH and neonatal asphyxia) by providing quality basic maternity services. Although the government has addressed affordabilityty barriers, operational challenges remain in effective implementation of enabling policies such as Free Maternity Care. There is a need to ensure that all hospitals have BEmONC and CEmONC with a functional referral system.

Key immediate actions:

- Introduce policies and protocols for control of neonatal infections such as use of chlorhexidine for cleaning the umbilical cord.
- Provide competency-based training in midwifery for nurses and clinical officers.
- Provide competency-based training for nurses, midwives and clinical officers in newborn resuscitation and management of sick children.
- Provide mentorship for medical officers working in rural and pastoralist areas in providing CEmONC services through locum appointment of specialists coordinated by professional associations.
- Incrementally address supply side barriers starting with level 3 facilities offering BEmONC such as refurbishment of delivery rooms, and supply of essential equipment such as

neonatal ambu bags, suction machines, solar lights and creation of sick child nurseries in county referral hospitals.

- Offer performance linked grants to county governments for the operationalization of facilities providing quality 24/7 BEmONC.
- Scale up results based financing to improve quality and provider responsiveness to clients.
- Use digital health platforms applications for demand creation and to send reminders for clinic attendance and deliveries by skilled birth attendants.
- Develop regional networking for blood banking and specialized laboratory services.
- Promote private sector partnerships for improving access to referral care including ambulance services.
- Accelerate and ensure quality implementation of free maternity care.
- Develop innovative mechanisms and private public partnerships to allow urban slum dwellers access to free maternity services and health insurance to reduce OOP payments.

Family Planning: Increase availability, accessibility, acceptability and quality of voluntary FP/contraceptive services

FP is an essential and integral part of improving RMNCAH outcomes. It reduces high risk pregnancies, facilitates birth spacing, and prevents unintended pregnancies and related unsafe abortions especially among adolescents. Despite overall increases in CPR, there is limited access to voluntary FP services especially among adolescents and particularly in counties with high maternal, newborn and child mortality. Access to quality modern contraceptive methods, including long acting and permanent methods (LAPM), is limited because of supply side gaps. Strategies for FP will ensure access to a secure choice of quality modern contraceptive methods with the necessary information, education and support structures in place that can inform this choice. Use of FP/contraceptive services will remain voluntary—with no coercion.

Key immediate actions:

- Address supply side barriers for contraceptives method mix, including LAPM, efficient distribution systems, and competency-based training and updates using WHO medical eligibility for contraceptive use for nurses, clinical officers and doctors in LAPM, FP/contraception counseling and follow-up.
- Scale up youth friendly health services[3] and use non-governmental organizations (NGOs), CBOs and social media to more effectively reach youth.
- Ensure contraceptive commodity security and adequate financing for contraceptives

[3]Youth friendly health services have four broad characteristics: (i) Providers are trained and supported to be non-judgmental and friendly to adolescent clients; (ii) Health facilities are welcoming and appealing; (iii) Communication and outreach activities inform young people about services and encourage them to make use of services; and (iv) Community members are aware of the importance of providing health services to adolescents.

- Involve a wide range of stakeholders such as private sector, schools, universities, and uniformed forces to increase availability and quality of voluntary FP/contraceptive services.
- Train pharmacy staff to provide FP methods.
- Increase/expand community-based distribution of FP commodities and services through initiatives which will include task sharing.
- Expand the output based aid (OBA) voucher program to include a wider range of FP services focusing on underserved groups and youth.
- Increase the coverage of postpartum FP planning services in facilities.
- Encourage long acting and reversible methods among underserved groups such as adolescents/youth.
- Increase the availability of facilities providing integrated voluntary FP into other services including HIV & AIDS and the non-health sector and promote dual method use for HIV prevention.

Child Health: Increase access to preventive services and quality emergency care

Half of all child deaths are due to newborn causes, pneumonia and diarrhea. HIV is also an important contributor in some counties with a high prevalence of HIV. Persistent malnutrition and micronutrient deficiencies prevent Kenya from making rapid progress in reducing neonatal, infant, and child mortality. To make progress on diarrhea, appropriate investments are also required in access to clean water and sanitation including promotion of hand washing.

Key obstacles for child health are poor access to health facilities offering quality emergency services for sick children, including neonates. Further, preventive and promotive services such as immunization and deworming are not receiving adequate attention.

Key immediate actions:

- Scale-up community supported Integrated Management of Childhood Illnesses (cIMCI) such as pneumonia, malaria, and diarrhea.
- Implement competency-based training and skills retention for nurses, midwives and clinical officers in the management of facility based IMCI.
- Promote cost-effective interventions such as kangaroo mother care while incrementally addressing the supply side barriers such as creation of neonate nurseries in Level 4 hospitals.
- Include emergency care of sick children under the OBA/Free Maternity care package.
- Ensure sustainable supply and delivery of vaccines and shift responsibility for procurement and supply of vaccines and cold chain equipment to the national level and ensure that a dedicated budget line is provided.

Nutrition: Improve Nutrition, particularly for Early Childhood Development

According to the *Lancet* nutrition report (Black et al., 2013), undernutrition (e.g. fetal growth restriction, stunting, wasting) and deficiencies of vitamin A and zinc along with suboptimum breastfeeding accounted for 45 percent of all child deaths in 2011. Key obstacles to improving

high levels of undernutrition among children include suboptimal nutrition for pregnant/lactating women, poor early childhood feeding and caring practices, low coverage for micronutrients and knowledge gaps among CHW/Vs and health workers. Targeted health sector high impact nutrition interventions should be complemented with wider cross-sector approaches to improve household food security using locally available nutritious foods, enhance access to safe water and sanitation, and improve hygiene.

Growing evidence highlights the urgent need to build on child survival gains by focusing new efforts not only on saving children's lives but also on supporting the healthy development of their brains during the first few years of life. This is the time when brain development lays the foundation of a child's physical and mental health that will affect everything from longevity to the lifelong capacity to learn, ability to adapt to change and the capacity for resilience. Interventions at this time are especially important for those children growing up in the most disadvantaged and vulnerable communities, who already face multiple adversities and whose societies also suffer the consequences of those deprivations. For early child development (ECD) to be most effective, interventions must not only start early during brain development but must also be intersectoral, going beyond education to encompass health, nutrition and protection (Bhutta et al 2013, UNICEF State of the World's Children, 2001).

Key policies such as the Food and Nutrition Security Policy, the National Nutrition Action Plan and Breast Milk Substitutes Regulation and Control Act 2012 have created an enabling environment and focus should now be on effective implementation. Kenya is also developing a costed investment plan to scale-up cost effective interventions and increase coverage.

Key immediate actions:

- Scale-up sustained behavior change communication for promotion of breastfeeding and appropriate and timely complementary feeding.
- Promote integrated delivery of essential nutrition services with essential health services at facility and community level reducing missed opportunities to deliver micro-nutrients (iron and folic acid, vitamin A, multiple micronutrients and zinc) to pregnant/lactating women and children.
- Involve CHWs and ECD teachers in the promotion of hand washing, delivery of micronutrients and supplementary nutrition programs.
- Continue school deworming program for children (2-5 years) with 2 doses each year.
- Pilot cross-sector community driven approaches to improve household food security and dietary diversity.

Adolescent Health: Improve and Scale-up Adolescent Sexual and Reproductive Health, within and outside the health sector

Photo: © Melanie Mayhew, World Bank

Adolescents aged 10-19 years constitute 24 percent of Kenya's population. Adolescent needs are quite diverse depending on age, sex, marital status, residence, education attainment, etc., and are confronted by different risks and challenges—biological, emotional and social. Twenty-one percent of new adult HIV infections occur among young women aged 15 - 24. Although the Kenya Constitution highlights the importance of investing in this age group, adolescent sexual and reproductive health (ASRH) still remains a low priority and existing legal frameworks are not effectively implemented to address harmful cultural practices such as early and forced child marriage, female genital mutilation (FGM) and gender-based violence (GBV). With limited access to contraception, teen pregnancy remains high and has not changed since 2008 (KDHS 2014); only half of adolescents transition to secondary school with high dropout rates, particularly for girls. This group also has the highest incidence of new HIV infections. Further, HIV prevalence among girls is fourfold higher, at 3 percent, than for boys of the same age (KAIS 2012).

Existing adolescent programs are fragmented, with low coverage and many are not effectively implemented or adequately evaluated to build evidence on efficacy as well as cost effectiveness. Other issues such as substance/alcohol abuse, mental health, self-harm, injuries and violence are growing problems. Addressing and mitigating risks and vulnerabilities that face adolescents, particularly adolescent girls, requires an effective and integrated multisectoral response that addresses the needs of adolescents both within and outside schools and provides appropriate safety nets. Key obstacles include poor coordination between different sectors, the need to operationalize relevant policies, and lack of meaningful involvement of youth in ASRH programming. Investment in adolescent health is a key area for immediate investment given the political support.

Key immediate actions:

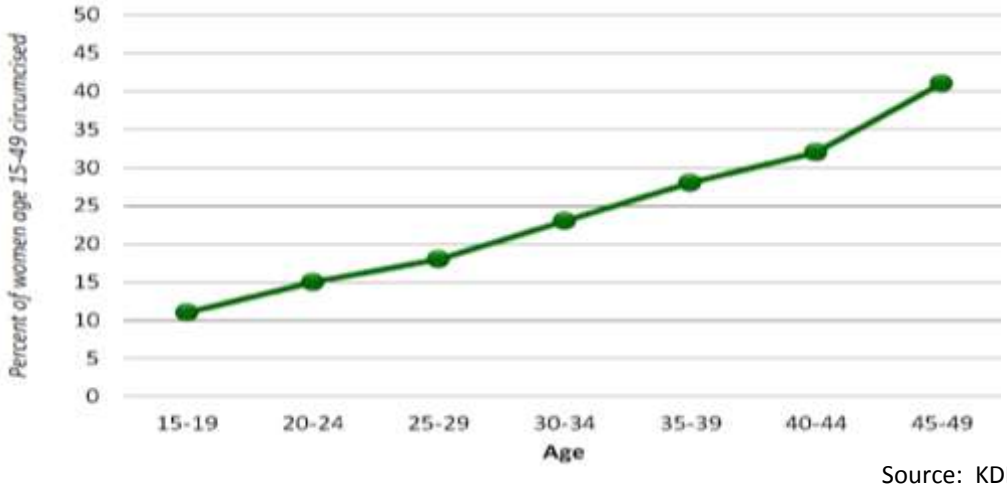
- Support county governments and involve local leaders, CBOs and NGOs in effective implementation of The Children's Act, 2001 and The Sexual Offences Act 2006.
- Support the Ministry of Education and Health to operationalize fully the School Health policy and strategy and revise the school curriculum to allow comprehensive and age-appropriate sexuality and reproductive health education; implement school health-based programs and identify teacher champions for school health who can sustain the program with minimum external support

- Promote multisector collaboration between Ministries of Health and Education, and Public Service, Youth and Gender Affairs Department of Youth Affairs. County governments to: (a) introduce/scale-up innovative approaches such as conditional/unconditional cash transfers to encourage girls to stay in school and avoid risky sexual behaviors and (b) implement return-to-school policy for girls who have had teenage pregnancies.
- Strengthen and expand integration of adolescent health interventions using HIV and SRH interventions and HPV vaccination as entry points and conduct joint HIV and ASRH program data reviews, coordination and planning for adolescents
- Build the capacity of health providers to provide adolescent-friendly SRH services through pre-service, on the job training, mentorship and continuous health education.
- Develop and implement innovative strategies to reach out of school and most vulnerable adolescents such as those living with HIV, disabilities, in prison, girls living in rural and remote areas, living in humanitarian contexts, young mothers and street adolescents.
- Disseminate the evidence-based interventions (EBIs) to the counties and have each county select those appropriate to its context and priorities.

Reproductive Health: Improve Reproductive Health and address Gender-based Violence

Gender-based violence (GBV) has a significant negative impact on health and social outcomes. While possibly a declining trend, many women in Kenya, particularly those in rural areas, still undergo FGM (Figure 13). FGM poses risks to the health and well-being of women and girls.

Figure 13: Female Genital Mutilation by Age



Source: KDHS 2014

Kenya has achieved notable progress in implementing reproductive health programs. However, there is limited availability of diagnostic and treatment services for reproductive tract infections and cancers despite efforts through various partners and the national HIV program to increase availability. Utilization of available services has also been low. Key obstacles include: lack of diagnostic services and low coverage for treatment, lack of appropriate skills among health care providers and limited availability and implementation of policy guidelines. Also, due to social and

cultural barriers, there is poor community and individual awareness of reproductive tract infections and STIs as well as low demand for screening, treatment and survival services.

Photo: © Melanie Mayhew, World Bank

Key immediate actions:

- Scale-up GBV services including services for violence against children (VAC), adolescents and promote multisectoral collaboration including access to legal services and sensitization of judiciary.
- Advance elimination of FGM through multisectoral collaboration and community engagement, as well as provide appropriate services to women with existing FGM.
- Include cervical and breast cancer screening and how to handle GBV care/management in the pre and in service training of nurses, midwives, clinical officers, and doctors.
- Establish regional diagnostic and treatment centers for reproductive cancers.
- Integrate screening for reproductive cancers into HIV, FP, STI and PNC services to increase screening coverage to at least 75 percent of the eligible population.
- Raise awareness about RH, VAC and GBV using multiple channels of communication including peer-to-peer learning, community FM radio and TV. Implement a sustained advocacy campaign on GBV prevention and service uptake among survivors (learning lessons from VCT). Support implementation to scale of the GBV integration guidelines in HIV programs and services, especially those targeting adolescents.
- Provide appropriate services for those who have undergone FGM, while elimination will be further advanced.

Strengthen integration of services

Integration of services within the RMNCAH continuum and with vertical disease programs should be effective in meeting a woman's/girl's multiple health needs at a single point of care, during a single visit and potentially by the same provider (Atun et al., 2010). More effective integration of RMNCAH and vertical programs is required to prevent, diagnose and treat indirect causes of maternal death such as AIDS, tuberculosis, STIs, malaria and reproductive health cancers. At present, fragmented funding, planning and reporting on vertical programs create inefficiencies and there are many missed opportunities to provide services across the continuum of RMNCAH services. Integration would optimize the available resources and facilitate leveraging vertical program resources especially from HIV/AIDS, malaria, TB and nutrition programs.

Kenya has been a pioneer in integration of services and is currently implementing the minimum package of RH/HIV and AIDS integration services on a limited scale which now needs to be scaled-up. Integration opportunities exist in promoting better linkages between HIV and RMNCAH services such as prevention of mother to child transmission (PMTCT) and antiretroviral therapy

(ART), and strengthening linkages between HIV and reproductive cancer screening (MOH 2009). Efforts to integrate HIV testing and provision of ART with ANC and PNC for women living with HIV have shown positive results; however, there is little evidence on integrating malaria and TB.

In spite of persisting health systems challenges, evidence indicates that service integration is generally positive. Task shifting, integrated guidelines and mobile technologies have shown promising results (Mdege et al., 2013). Interventions that address gender norms, reduce stigma, mobilize communities and increase social support have shown positive influence on policy, demand and delivery of integrated PMTCT and maternal health services (Kendall et al., 2014). Further, integration of RMNCAH interventions along the RMNCAH continuum of care will address missed opportunities.

Key immediate actions:

- Integrate in-service training and guidelines, and unify data collecting tools to eliminate duplication and increase effectiveness and efficiency.
- Fast track implementation of integrated policies, strategies and update guidelines and update standards for RMNCAH services for integrated service delivery at all levels of care.
- Improve joint planning between programs, including joint supervision visits.
- Improve coordination between vertical programs and among donors.
- Conduct regular resource and donor mapping to address coverage gaps and reduce fragmentation and duplication.
- Conduct implementation research on the most effective models to integrate HIV, TB, Malaria, and STIs, FP services while maintaining quality, effectiveness and coverage.
- Ensure effective communication between levels of governments on how to execute/implement policies.

Strengthen the Health System to Support Efficient and Effective Delivery of High Impact Interventions

Besides addressing equity and improving the delivery and scale-up of high impact interventions to increase coverage, strengthening the health system is a key lever to improving overall performance. A more optimal functioning health system will result in increased productivity, greater efficiency, accessibility, acceptability and effective coverage as well as improved quality of care. This section elaborates on key areas of the health system including human resources, medical products technologies and the supply chain, sustainable health financing and financial protection, health information including CRVS, and governance and leadership. Immediate activities and long term solutions are described for each area to address the prioritized health system bottlenecks that directly impact RMNCAH outcomes.

To have a functional health system and achieve efficient and sustainable quality services, three key elements of service delivery must be available in the same place at the same time: (i) basic inputs such as equipment and drugs; (ii) skilled providers, and (iii) productive and motivated

providers (Figure 14a). However, only 59 percent of the facilities surveyed in Kenya under the SDI study had all the four basic inputs required for maternity services delivery (Figure 14b).

Figure 14a: Critical Elements to Achieve Results

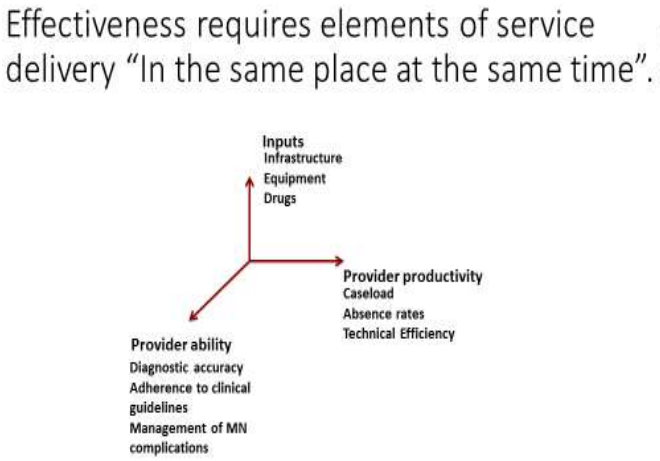
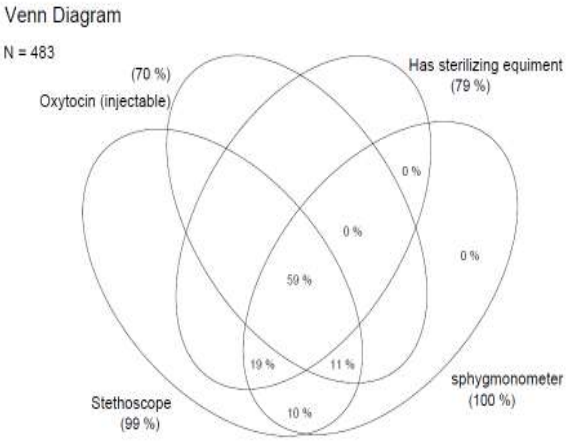


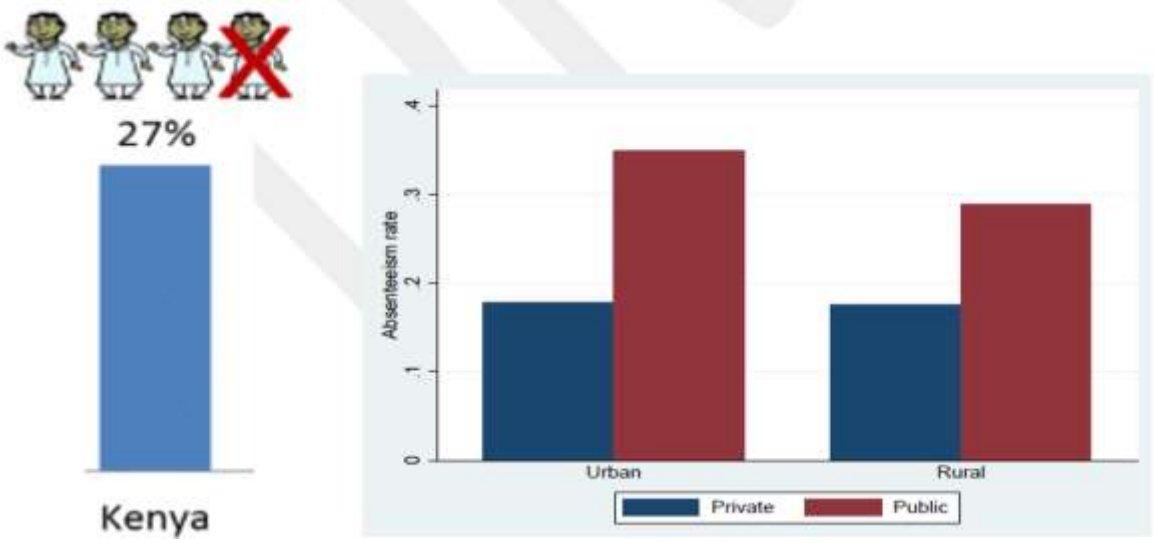
Figure 14b: Availability of Basic Inputs in a Hospital



Source: KENYA SDI 2013

The productivity of health staff in Kenya is suboptimal with low caseload and high absenteeism. For example, over 1 in 4 providers were absent during unannounced visits to health facilities. Absence rates are even higher in public facilities (Figure 15). Most of these absences are sanctioned, which points to poor management as being the greater challenge.

Figure 15: Absenteeism is High, Especially in Public Facilities



Source: KENYA SDI 2013

The analysis of absenteeism and efficiency suggests that there is room for realizing efficiency gains. When we combine the availability of inputs with availability of skilled providers, optimal return on investment is realized only in a quarter of facilities (26 percent).

Health Workforce

HRH play a significant role in scaling up RMNCAH services of this magnitude, especially in high burden counties and among hard to reach marginalized and underserved groups (e.g. nomads). Although the number of trained health professionals has increased, quality and absorption into the public sector remains a challenge. Kenya faces several challenges in HRH including shortage, uneven distribution between counties; and overall suboptimal management of the health workforce. It is vital to develop and implement health workforce strategies that are relevant to the devolved context.

Improve availability of competent and motivated providers, especially in hard to reach areas

There is weak health workforce planning and policy implementation, including poor distribution of staff, particularly in hardship and hard to reach areas. Although several strategies[4] have been developed to motivate, increase retention and reduce attrition of health staff in the Arid and Semi Arid lands (ASAL), these efforts have been inadequate. The public sector nurse to population ratio is 24/100,000 in the ASAL compared to 95/100,000 in Nairobi. In addition, poor communication networks, infrastructure and insecurity are affecting the recruitment and retention of staff in the high burden northern counties. Urgent action is needed to address this critical issue.

Key actions:

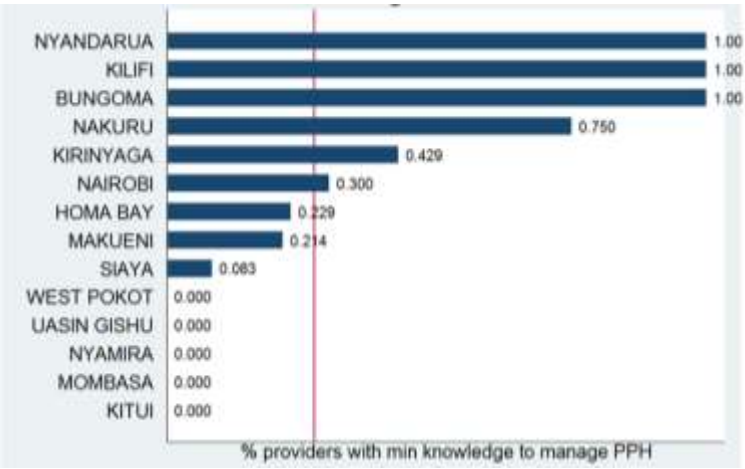
- Review existing salaries, housing, and allowances for health personnel working in hardship and hard to reach areas and propose incentives that are both sustainable and attractive to staff.
- Scale-up performance-based financing and locum work opportunities to retain and motivate staff.
- Provide scholarships for qualified individuals from hardship areas and offer career incentives/bonding to work in such areas.
- Rationalize and reallocate staff based on service delivery needs (workload, norms etc.).
- Allow task shifting by using the services of community health workers, nurses, clinical officers and general duty medical officers who, with adequate training and mentorship, will have a higher aptitude to perform more advanced clinical tasks.
- Contract out service delivery to NGOs willing to work in the hardship areas.

[4]Strategies include a hardship allowance of 30 percent increase on basic salary to all civil servants and local recruitment through the Economic Stimulus Package.

Improve technical skills and competency of providers

Increasing technical skills and competencies of providers will improve the quality of care. As noted earlier, there is significant room for improvement in this. As shown in Figure 16, there are variations in health provider competency among counties. For example, all health providers in Nyandarua, Kilifi and Bungoma counties have minimum knowledge of managing PPH while 10 percent or less of health providers have the same knowledge in Siaya, West Pokot, Uasin Gishu, Nyamira, Mombasa and Kitui counties. Other data show differences by provider types, facility level and geographic location.

Figure 16: Health Provider Competence in Management of PPH in Hospitals



Source: Kenya SDI 2013

Training of staff is critical to improve knowledge while sustained mentorship and supportive supervision is necessary to enhance skills and competencies. In view of high provider absenteeism, innovative mechanisms may need to be explored to enhance provider skills and competencies, including improving attitude to clients.

Key immediate actions:

- Introduce innovative training techniques, such as e-learning, telemedicine and on-the-job training.
- Introduce performance-linked incentives to reduce provider absenteeism and increase motivation.
- Use available tools for continuous quality improvement at facility level to effectively improve client responsiveness.
- Work with licensing bodies to strengthen the adherence to Continuing Professional Guidelines issued by the Medical Practitioners and Dentists Board (April 2014) and requirements for licensure.

Long term solution:

- Institutionalize mechanisms for promoting continuum of care and improving provider competency especially in maternal, newborn and adolescent care.

Medical products and technology

Medical products and other supplies are not always available at health facilities. Recent evidence showed that only 57 percent of health facilities in Kenya had the necessary essential supplies for delivery and management of complications during pregnancy (Figure 17) (KSPA, 2010). RMNCAH supply shortages are largely the consequence of funding gaps and a weak procurement and supply management system; both of which require urgent attention.

Figure 17: Suboptimal Levels of Essential Supplies for Delivery

Facilities with medicines to manage common complications during pregnancy

	All essential supplies for delivery	Additional medicines for	
		Common complications	Serious complications
Nairobi	79	81	61
Central	88	77	57
Coast	60	59	75
Eastern	44	61	79
North Eastern	21	52	83
Nyanza	54	25	55
Rift Valley	64	49	46
Western	45	38	74
National	57	51	63

a. Scissors or blades, cord clamp, suction apparatus, antibiotic eye ointment for newborn, skin disinfectant
b. Needle and syringes, intravenous solution with infusion set, injectable oxytocic, and suture material and needle holder all located in delivery room area; oral antibiotic (cotrimoxazole or amoxicillin) located in pharmacy or delivery room area
c. Injectable anticonvulsant)diazepam or magnesium sulphate) in delivery room area and an antibiotic (penicillin or ampicillin, or gentamicin) in delivery room are or pharmacy

Source: KSPA 2010

Ensure adequate domestic financing to sustain supply of quality RMNCAH products and technologies

Budget shortfalls exist for essential medical products and technologies for RMNCAH. For example, procurement and distribution of FP commodities is still a challenge with high dependency on donors. In the past, the Government of Kenya procured over a third of FP commodities while the remaining were supplied by donors. The government was responsible for distribution through Kenya Medical Supplies Authority (KEMSA). Devolution has shifted responsibility for procurement and distribution of FP commodities to the county governments which have not yet budgeted for this important input. The funding shortfalls affected timely distribution of commodities.

Similar challenges face procurement and distribution of vaccines and cold chain equipment essential for sustained immunization coverage. The national government provides resources

required for procurement of routine and new vaccines to the vaccine security pool established by UNICEF. At present, the budgets for these critical inputs have been included under the Equitable Share devolved to county governments. While national and county governments have agreed in principle that pooled procurement of vaccines and injection devices should be done, neither a budget line nor resources have been made available for the last three years. This resulted in stock-outs of routine and new vaccines. This needs to be addressed on a priority basis.

Key immediate actions:

- MOH and county governments must agree on pooled and transparent procurement of key health products and technologies (e.g. vaccines, contraceptives, TB, malaria and HIV supplies, cold chain equipment etc.,) to benefit from economies of scale and quality assurance systems. They must allocate required budgets.
- Follow up on financing for vaccines in coordination with GAVI.

Long term solutions:

- Introduce tax exemptions for essential life-saving medicines and medical technologies for women, adolescents and children.
- Promote local industry growth through incentives and enhance market access through harmonized medicine registration in the EAC.

Improve systems for demand forecasting, procurement, distribution and use of health commodities

A weak system of data collection for commodity stocks is worsening the situation at facility level, creating stock-outs. For example, reporting on consumption of contraceptives by health facilities dropped from 70 percent in 2012 to 20 percent by the end of 2013 when donor support for the logistics management unit ended. Skills required for forecasting, quantification and management of commodities to minimize stock-outs, overstock, and expiry are limited at county level. For that reason, it is crucial to build on ongoing reforms in procurement and supply chain management to ensure an improved system will be in place for demand forecasting, procurement, distribution and use of health commodities.

Key immediate actions:

- Build on KEMSA reforms to streamline procurement of medical products and technologies and create a clear role for counties in the KEMSA governance structure.
- Establish national framework contracts for RMNCAH essential equipment to ensure economies of scale and quality.
- Scale-up the computerized Integrated Logistics Management System and use m-health initiatives to improve forecasting.
- Offer in-service training for facility level staff in inventory management and rational use of medicines.
- Pilot inventory control managed by private vendor (controlled push) for emergency drugs.

- Include UN lifesaving commodities for women, newborns and children on the essential drug list.

Health Financing and Financial Protection

Health care financing is central to the success of the RMNCAH investment framework. As articulated in the Kenya Health Sector Strategic and Investment Plan 2014-2018, the country's health financing objectives are to assure adequate resources for delivery of the KEPH in an equitable and efficient manner (MOH 2014B). This may be attained through focusing on systems of resource generation, risk pooling and purchasing of care. The investment framework will support arrangements related to direct purchasing of care, insurance, direct provision of care, and contracting of care. It is the government's intention to: (i) generate additional resources by advocating for higher budgetary allocations by both the national and county governments; (ii) enhance mechanisms that ensure donor support are aligned to the sector goals and objectives; (iii) promote financial risk pooling mechanisms and schemes for financing delivery of KEPH; and (iv) encourage adoption of payment mechanisms that provide incentives for better productivity and efficiency in service delivery, including an implementation framework that minimizes wastage in public health facilities and cost-containment across the sector. The health sector will consolidate and maximize on the benefits of the already existing health care subsidy programmes including free primary care services, free maternity services and output-based aid programs and learning from the Health Insurance Subsidy Programme (HISP) for the poor.

Kenya spends about US$ 2.7 billion on health care. The share of health expenditure out of total government expenditure has remained low and is currently estimated at 6.1 percent. According to the recent National Health Accounts (NHA), the proportion of total health expenditure (THE) contributed by private sources has declined from 54 percent in 2001/2002 to 40 percent in 2012/13. OOP payments account for over 80 percent of private sources. Such payments are usually made at the point of service delivery and are known to be inequitable and inefficient. According to the NHA 2012-13, the share of public spending of THE has increased to 34 percent and the donor contribution declined to 26 percent highlighting the increasing importance of domestic financing.

Per capita health expenditure in Kenya has been increasing over the years (from US$ 44.6 per capita in 2001/2002 to US$ 66.6 per capita in 2012/2013) and is currently above the WHO recommendation of US$ 62 per capita. However, a major challenge is that the government resources are fragmented and inequitable. Moreover, a significant part of the donor funds, which account for 26 percent of THE, still remains off-budget targeting only a few diseases such as HIV/AIDS, TB and malaria. To address these challenges, the MOH is developing a health financing strategy, which will identify the core technical elements and the practical solutions to address health financing related challenges in Kenya.

Develop and implement a sustainable health financing strategy

There is inadequate financing for RMNCAH, which has been exacerbated by the impact of devolution. Developing and implementing a health financing strategy that transforms the

health sector by reducing inequities while promoting enhanced sustainable domestic financing and harmonized donor support for achieving UHC is therefore a critical priority. The challenge of budget allocation for health within counties needs to be addressed.

Key immediate actions:

- Develop a well-informed and inclusive health financing strategy for Kenya through a consultative process.
- Link donor financing to increases in domestic financing for RMNCAH both at national and county levels.

Long term solutions:

- Enhance sustainable domestic financing for RMNCAH both at national and county levels. This may include earmarking the money or ring-fencing.

Scale-up results-based financing

As the health sector focus is mainly on inputs, linkages between health financing and performance tend to be weak. Linking payments to performance, including the quality of services, will contribute to improved coverage while also safeguarding the rights' of the user.

Key immediate actions:

- Link financing to results and institutionalize a performance-based framework.
- Scale-up both supply (performance based financing) and demand side (vouchers, conditional cash transfers) innovations which are relevant to the Kenyan context.

Long term solution:

- Ensure supply side RBF incentives are incorporated in the relevant provider payment mechanisms, such as health insurance, for better sustainability.

Health Information and Civil Registration Vital Statistics

Poor quality data from routine health information systems coupled with low and incomplete reporting, including of births and deaths, makes planning and monitoring difficult. What is needed is timely and complete coverage of administrative data complemented by independent verification and targeted attention to CRVS (Annex 5).

Improve availability, quality and completeness of data

Administrative data, such as data from the District Health Information System (DHIS) are often late, incomplete and of low quality. As a result, this data is rarely used to inform planning, management and monitoring of coverage and quality of RMNCAH services. Regular data quality audits and independent verification of DHIS and other data sources can improve the reliability

and timeliness of the data as well as its use as providers will have an incentive to understand better how they can improve the quantity and quality of services provided.

Studies and surveys are needed to identify underserved populations and gaps in service delivery. Devolution provides an opportunity for data disaggregation in a way that inequities can be identified up to village-level. This opportunity needs to be harnessed.

Key immediate actions:

- Strengthen DHIS to provide real time data.
- Improve quality of DHIS through data quality audits and verification mechanisms and use disaggregated data (e.g. by gender, equity) for course correction on a quarterly basis.
- Introduce rapid household and facility surveys using mobile technology.
- Institutionalize maternal death surveillance and response (MDSR) system.
- Strengthen linkages between Integrated Disease Surveillance and Reporting (IDSR), MDSR and CRVS for harmonization and improved data quality on maternal, newborn and child deaths.
- Strengthen the community-based organizations program reporting system hosted by National AIDS Control Council for community-based organization reporting.
- Strengthen the recently launched HIV and RMNCAH dashboard (the Kenya HIV Situation Room) through which the President of Kenya and other senior policy makers will be able to track progress and identify gaps in HIV programming.
- Strengthen the unified integrated reporting system at the National AIDS Control Council.

Targeted attention to improve civil registration and vital statistics

At present, civil registration functions poorly resulting in low quality vital statistics. Investing in CRVS as part of the RMNCAH investment framework would enable accounting for and registration of births and deaths. This will lead to better understanding of the causes of mortality and provide another data set for triangulation to examine trends over time. If all CRVS data elements are functional and DHIS2 is complete, these two data sets will allow triangulation and, over time, may reduce the need for demographic and health surveys.

The Civil Registration Department (CRD) plans to scale-up IT linked registration sites from the current 107 to 285. This will make the service accessible throughout the country. CRVS activities will occur in phases over three years to reach the 20 prioritized counties, with 10 counties being covered in the first year and five in each subsequent year.

Key immediate actions:

- Expand access to computerized vital registration services from 107 to 285.
- Introduce innovations to improve birth registration in counties with low coverage (e.g. incentives to community level staff); mobile CRVS outreach to be combined with health outreach programs (e.g., medical outreach).

- Add the International Classification of Diseases (ICD) 10 abridged module for registration of causes of death to DHIS 2 and train health staff in the use of abridged ICD 10 module and ICD-Maternal Mortality.

Long term solution:

- Link birth registration to integrated national identity cards (ID).

Governance and Leadership

Key barriers in governance and leadership include disjointed efforts, poor coordination and lack of synergies among different actors. Implementation remains a challenge because of evolving capacities at the county level—weak management and lack of supervision and quality assurance in health facilities. Other challenges include concerns about integrity and risks of corruption.

Enhance coordination among key RMNCAH stakeholders at national and county levels

The lack of a coordinated effort between all actors—state, non-state, and development partners—results in inefficient utilization of available resources at both the national and county level. Further, the focus is mostly on the public sector and on facility-based service delivery; however, the total market for health care should be considered and guided by the location where clients access their care. The total market includes the public sector, private sector, FBOs and development partner supported NGO initiatives. Strengthened multisectoral collaboration will be key for sustainable scale-up as sectors such as education, agriculture, roads and transport influence RMNCAH health outcomes.

Key immediate actions:

- Map key partners (private, FBOs and donors) by key inputs and geographic areas of activities to identify possible gaps and duplication.
- Reactivate the Health Sector Coordination Committee (HSCC) with its Steering Group.
- Create an integrated RMNCAH technical working group.
- Hold quarterly meetings of the interagency coordinating committee on commodity security.
- Hold regular County Health Coordinating Committee meetings.

Long term solutions:

- Enhance partner coordination at the county level.
- Strengthen multi-sectoral coordination with appropriate coordinating structures and incentives.
- Formalize donor coordination either through an updated Code of Conduct or International Health Partnership compact.

Build county and national capacity to implement evidence-based policy making

Capacity challenges at national and county levels include planning, budgeting and implementation. Weak management, lack of supervision and quality assurance at both health facilities and all levels of the health system pose serious challenges to implementation. Appropriate technical and operational support need to be provided to strengthen implementation and devolution structures. To optimize the devolution dividend, national and county leaders and managers will require competencies in advocacy, partnership building and resource mobilization.

Key immediate actions:

- Continue ongoing collaborations to build county capacity for planning, budgeting and implementation through the Kenya School of Government and other institutions.
- Ensure that all new policies have well written operational manuals, protocols and reporting requirements.
- Entrust the MOH and county health teams with jointly reviewing RMNCAH score cards during the annual health congress.
- Develop quality tools and checklists to ensure action-oriented supportive supervision.
- Provide mentorship support to county and sub county health teams to support facility-centered continuous quality improvement.

Long term solutions:

- Institutionalize a process of consultation between the Department of Policy Planning and Healthcare Financing, MOH, and the technical working groups, county health teams and researchers from KEMRI once every two years to receive feedback on new evidence, innovation and implementation of key RMNCAH policies to make required changes.
- Strengthen systems for continuous quality improvement and independent health facility accreditation.
- Build manager competencies in advocacy, partnership building and resource mobilization.

Enhance transparency, citizens' participation and social accountability

Enhanced transparency is essential to the integrity of the health sector. Citizens' access to information and participation in relevant decision-making bodies is therefore critical. CSOs, like those working under the Health NGO Network (HENNET)[5], play an important role in social accountability.

[5]The Health NGO Network, HENNET, is an umbrella membership organization which coordinates civil society organization activities. HENNET membership includes NGO, technical partners, (CBOs) based in Nairobi with limited membership from rural areas.

Key immediate actions:

- Ensure that all health facilities disclose key information (e.g. names of key technical staff posted to the facility, budgets and availability of tracer commodities) to the community.
- Ensure that all health facilities have elected facility management committees in place as per the norms established.
- Establish a national complaints registry for the health sector through the MOH and monitor the responsiveness.
- Reactivate the social accountability technical working group and client feedback mechanisms such as citizen's report cards, community score cards or client satisfaction surveys.

Long term solutions:

- Institutionalize the use of social accountability for RMNCAH achievement using tools such as score cards.

OPERATIONALIZING THE RMNCAH INVESTMENT FRAMEWORK

The RMNCAH investment framework will provide a platform for MOH and the county governments to work in partnership with a wide array of stakeholders including communities, FBOs, CSOs, professional associations and the private sector (for profit and not-for-profit), development partners and the international community. These partnerships are critical to build capacity, support innovations, foster multisectoral collaboration across disciplines and invest in research and performance monitoring and accountability (PMA) to measure results and track progress. Relevant actors, depending on their role and responsibility, will support actions described in this national investment framework. Hence, the national level of the MOH will focus on implementing different actions than those at county level, while some will be shared responsibility. Similarly, the private sector and development partners will contribute through funding or other support to ensure that the actions will be implemented.

National Level

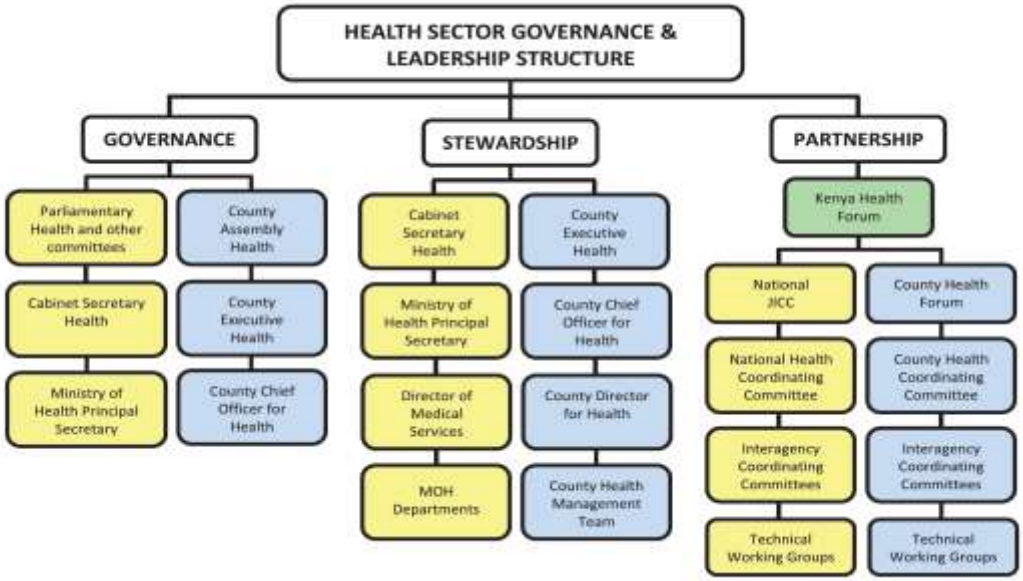
At the national level, the MOH will be responsible for developing and overseeing national policies and legislation, establishing norms and standards, providing technical assistance to counties, raising resources—both domestic and external—and promoting coordination and harmonization among development partners. Figure 18 shows the Kenya health sector governance and leadership structure. The MOH will also develop and disseminate knowledge products such as guidelines, protocols, templates and facilitate knowledge sharing and research. Other activities that the MOH will be responsible for include: i) multisectoral coordination of RMNCAH development and technical partners to reduce duplication and improve efficiency; ii) pooled procurement of agreed upon lifesaving commodities and strengthening the supply chain systems; iii) development of an incentive framework by MOH and Civil Service Commission for retention

of health staff, especially in hard to reach areas; iv) introduction/scaling up of training programs such as midwifery and certified nurses; v) in-service training for health staff with a clear mentorship program; vi) facilitation of private sector participation in delivering RMNCAH interventions by addressing legal impediments, accreditation, registration and regulation; vii) advocacy for increased allocation of national and county health budgets to reduce donor budget substitution;; and viii) strengthening of reporting and collating population level data by improving DHIS and CRVS working closely CRD and external verification.

The HSCC, which is the coordination mechanism between the government and its development partner (including donors, civil society and private sector), will be reactivated and will ensure that progress on RMNCAH is regularly discussed. The HSCC will provide guidance and mid-course corrections for the implementation of the RMNCAH investment framework.

A national health forum will also be important as a platform to discuss national level achievements and gaps and agree upon course correction.

Figure 18: Health Sector Leadership Structure



JICC –Joint interagency coordinating committee
Source: MOH

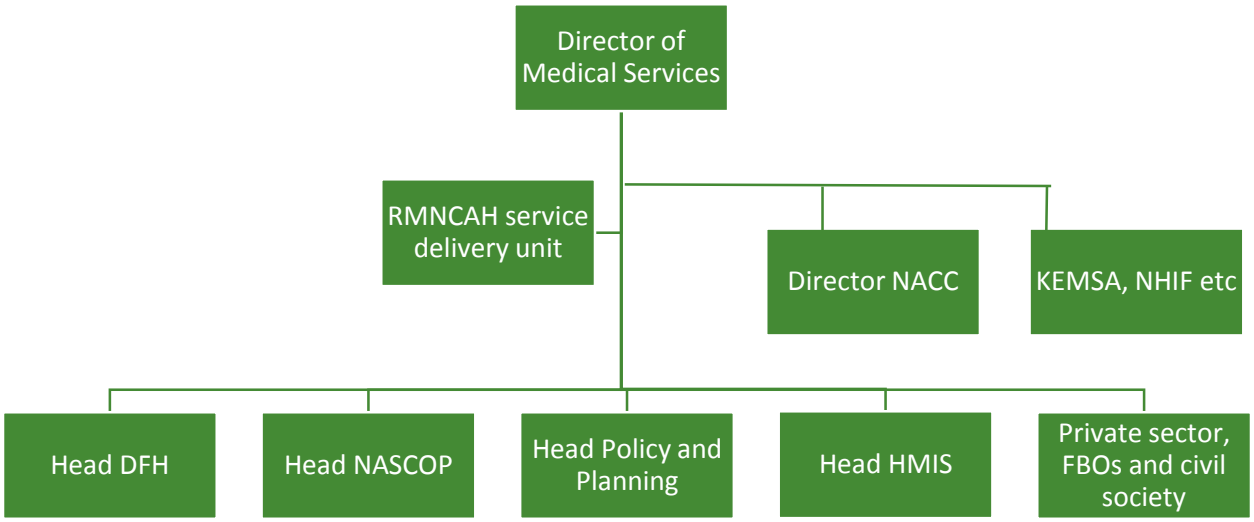
An integrated RMNCAH technical working group reporting to the Director of the Division of Family Health will provide technical inputs as required and support county implementation plans. The Division of Family Health includes the following units: health promotion, community health services, child and adolescent health, immunization services, nutrition and reproductive and maternal health services.

Delivery unit to support implementation of the RMNCAH investment framework

To realize the expected results of the RMNCAH investment framework, a fully staffed integrated delivery unit will be established at the national level. This unit, in collaboration with the relevant departments and units, will oversee all the national level activities., support the counties in

monitoring progress to achieve targets, and will report via existing structures (Figure 18 and Figure 19). Positions will include a RMNCAH program coordinator (who liaises with technical departments, the counties and other sectors including private sector and development partners) and staff responsible for monitoring and evaluation (M&E), communications and resource mobilization. Relevant terms of reference, including skills and competencies, will be developed for the different positions.

Figure 19: Organogram of MOH Oversight Committee for RMNCAH



Source: MOH

DFH – Division of Family Health, FBO – Faith Based Organizations, HMIS – Health Management Information System, KEMSA – Kenya Medical Supplies Authority, NACC – National AIDS Control Council, NASCOP – National AIDS and STI control Programme, NHIF- National Hospital Insurance Fund

A technical assistance facility will be established at the national level that can be used on a draw down basis by individual counties to support their specific technical needs, and build/strengthen county management capacity to plan and effectively implement RMNCAH programs. Resources will come from the amount generated for the RMNCAH investment case. This facility will also be used by the MOH to rapidly access consultants and other services as it will be linked to current TA and support from agencies such as the H4+ partners.

The RMNCAH delivery unit will report to the Cabinet Secretary (CS) and Principal Secretary (PS), MOH through an oversight team chaired by Director of Medical Services. Other members of the oversight team will include heads of various units such as DFH, NACC, NASCOP, Department of Policy, Planning and Health Financing, and the HMIS Unit.

County Level

The counties will facilitate and foster collaboration with development partners, motivate participation of the private sector, civil society, religious and community leaders in the development and implementation of RMNCAH implementation plans. In particular, counties will be responsible for: i) mobilizing resources to complement national resources; ii) coordinating the development partners at county level; iii) selecting priorities relevant to the county context; iv) developing and implementing interventions in line with the national RMNCAH investment framework; v) facilitating supportive supervision; and vi) annual reporting of service statistics. These plans will be an integral part of County Annual Integrated Development Plans and aligned with the County Strategic Health Plans.

At the county level, existing structures such as the HIV/AIDS health sector steering committees and Health Advisory Committees will be integrated and strengthened to include RMNCAH. Counties will be expected to have annual health forums where achievements are reviewed in detail and any course correction agreed upon.

Private Sector

Kenya has a vibrant private sector that plays a major role in providing and financing health care in Kenya. The private sector is defined to include all non-state actors, including commercial for-profit providers and not-for-profit providers such as NGOs and FBOs. According to the recent Service Availability and Readiness Assessment Mapping (SARAM) report, 49 percent of all health facilities in Kenya are private (33 percent for-profit and 16 percent not-for-profit). The organization of private providers mirrors that of public facilities, with private clinics falling in Level one with community health units; dispensaries, health centers, maternity and nursing homes falling in Level two and three and smaller public hospitals (sub county hospitals), mid-sized hospitals belonging to Level four alongside county referral hospitals, and large (teaching) private hospitals falling in Levels five and six alongside the national referral hospitals.

The private sector will have a significant role as an implementing partner as it already provides over 40 percent of services, mainly curative, in Kenya. Several FBOs and NGOs play a key role in providing services in hard to reach areas and populations. However, there are key bottlenecks preventing the private sector from playing an effective role. These include: i) an unsupportive regulatory environment with multiple licensing requirements (especially the requirement to pay for each license) which increases cost of doing business for the private sector; ii) problems in accessing credit from financial institutions, particularly by smaller establishments ; iii) limited access to alternative sources of funding from the public sector, for instance, free maternity services; iv) limited access to pooling mechanisms; v) challenges in adhering to minimum patient safety standards; and vi) shortage of qualified human resources.

Given that 82 percent of the population own cell phones (Pew Research, 2014) and mobile reception is available in 75 percent of the country (Praekelt Foundation, 2012), Kenya has the potential to scale-up m-health and e-health initiatives.

Recognizing the huge potential of the private sector to improve the quality of health care in Kenya, the following strategies and activities have been identified to assist operationalizing the RMNCAH investment framework:

- Build a strong partnership and trust between public and private sectors through regular structured meetings with MOH and county governments, and include private sector representation in key taskforces and working groups.
- Implement legal and policy reforms supportive of private sector, for example, joint health inspections toolkit which is under development, the draft Public Private Partnerships (PPP) Act, the PPP Strategy for Health (under preparation), and enact the General Health Bill.
- Make credit facilities possible for private providers, particularly smaller facilities and encourage financial institutions to structure appropriate lending facility that can provide funds to local banks for onward lending to the private health providers at lower interest rates.
- Support health professionals' associations to improve professional self-regulation of members.
- Start implementing the Joint Health Inspection tools across private and public facilities to ensure provision of services that uniformly meet minimum patient safety requirements.
- Institutionalize a unified regulatory enforcement mechanism, with adequate staffing, equipment, and resources to implement joint inspections of both public and private health facilities.
- Contract specialized care instead of direct employment by the government
- Leverage and scale-up available communication technologies (e.g. tele-medicine, e-health, m-health) to improve service delivery and information sharing in hard to reach areas where human resources are scarce.
- Increase the private sector manufacturing potential of medical technologies and products through enabling tax policies and infrastructure development.
- Operationalize mechanisms to allow county governments to contract/partner and buy services from private and faith-based facilities and civil society.

Development Partners

Development partners will align with and contribute to supporting the priorities set out in the national investment framework and the RMNCAH implementation plans at county level. This support can be financial, operational (such as technical assistance), as well as the M&E of the investment framework.

Multisectoral Cooperation

Sectors such as education, roads and transport, agriculture, legal, and justice influence RMNCAH outcomes. The NCPD under the Ministry of Devolution, CRD, under the Ministry of Interior, and Kenya National Bureau of Statistics (KDHS) under the Ministry of Planning will be engaged. Strengthened multisectoral collaboration with appropriate coordinating structures and incentives at national and county level will be key to sustainable scale-up. The coordination structure will be at CS level, with CS Health chairing the coordination to get the highest ownership.'

PERFORMANCE MEASUREMENT AND ACCOUNTABILITY

The RMNCAH investment framework is supported by a results framework to measure and monitor progress on results, track efficiency and effectiveness, and identify deficiencies and improvement measures for course corrections. A draft results framework has been developed with baselines, five-year targets and sources of data (Annex 6). This will depend on collecting accurate data complemented by CRVS. Investments will be made in strengthening the DHIS for real time data and investing in facility surveys and Performance Measurement and Accountability (PMA) surveys that collect data on an annual basis to measure progress. The KDHS 2014 provides a baseline and another one scheduled for 2019 will measure impact level indicators. Technologies such as cell phones will be used to improve the speed and reduce costs of data collection.

Photo: © World Bank

Investments will be made to strengthen the DHIS and CRVS. Improving population level data collection will inform planning, help to assess achievement of population level changes, improve governance and accountability, and ensure the rights of Kenya's citizens. To further ensure accountability, Citizens' engagement will be enhanced. The social accountability technical working group will be reactivated and innovative approaches will be rolled out to receive citizens' feedback. Accountability will also be enhanced by establishing an independent review group/body to assess RMNCAH achievements on an annual basis by triangulating service statistics and survey data. This will deliver a holistic picture of RMNCAH achievements by each county and at the national level.

An M&E assessment will be conducted to list different data sources and suggest improvements to have credible and sustainable arrangements for verification.

In addition, relevant impact evaluations and regular surveys will be conducted to look at the effectiveness and impact of selected interventions and measure progress on service delivery improvements. An innovation fund will be established to support stakeholders, including non-state actors, in developing innovative approaches to improving service delivery, addressing demand side factors and enhancing a culture of rigorous implementation research and evaluation.

INNOVATION AND RESEARCH

Continuous learning will underpin the RMNCAH investment framework. Knowledge gaps exist in several areas necessitating further enquiry and research to inform the implementation of the RMNCAH investment framework. New technologies, tools and innovative approaches will need to be identified and tested.

The following research questions have been identified by MOH:

- *What are the factors that contribute to poor health seeking behaviors for RMNCAH services?*
- *What are the most cost effective models that can promote male involvement?*
- *What are the factors contributing to non-adherence to standard operating procedures and guidelines by health care providers in both private and public sectors?*
- *What is the impact of comprehensive RMNCAH training on the competency and skills of providers?*
- *Does task sharing work; if not, what are key barriers?*
- *What is the impact of current RMNCAH behavior change communication interventions?*
- *How effective are the different service delivery models, social media and mobile technologies in delivering adolescent sexual and reproductive health?*
- *What is the impact of maternal shelters?*
- *What are the mechanisms to get real time feedback from adolescents on health services (satisfaction with services)?*
- *How effective is the ongoing innovations such as cash-plus program and what are the implementation challenges?*
- *What models work best to reach out of school adolescents?*

RISKS AND MITIGATION

Through extensive consultations with stakeholders, the following risks were identified:

- Challenges during the initial period of devolution as there is wide variation in the needs and capacities of county health departments.
- Limited fiscal space may limit additional domestic spending to accelerate achieving RMNCAH outcomes during next five years.
- Poor donor coordination and fragmented support.
- Weaknesses in public financial management.
- Governance challenges resulting in fraud and corruption risks.
- Security concerns in some of the priority counties in the North East may limit service delivery.
- Weak citizen participation.

- Insufficient HR supply at all levels including recruitment to schools, graduation, retention, etc.

ESTIMATED RESOURCE REQUIREMENTS

Sustained availability of adequate financial resources is essential for the successful implementation of the RMNCAH investment framework. This cost analysis provides estimates of the resource requirements for the implementation of the RMNCAH investment framework by all stakeholders. The estimates indicate resource needs for the period 2015-2020 that will guide mobilization of resources from different levels of government, its development partners and other stakeholders.

Costing Methodology

The costing analysis has applied the OneHealth costing tool that uses an activity-based approach to cost RMNCAH services and interventions. Three data inputs are used: i) population in need of the different RMNCAH services; ii) coverage targets; and iii) unit costs. The unit costs are computed using the ingredients approach. The estimated cost per person or per activity was computed by the following formula:

Cost per activity = population x coverage target x unit cost.

- ***Population*** *is the number of persons who require the service*
- ***The coverage target*** *is the share of the population the program aims to reach*
- ***Unit cost*** *is the estimated amount of resources required to deliver a service to one person*

Analysis of past trends and global experiences was used to estimate annual increases in coverage to arrive at the end line targets for 2019-20 using KDHS 2014 as a baseline. The analysis provides cost estimates for the RMNCAH program scale-up covering all 47 counties in Kenya as well as costs of targeted interventions in 20 high burden counties prioritized for urgent investments. For the latter group, more ambitious but feasible targets were used.

General costing assumptions

The following general assumptions were used in the costing analysis. The population served by facility for emergency and basic obstetric care was given as:

- Level 4 (hospital providing CEmONC) – 500,000 population (all counties);
- Level 3 (health center providing BEmONC) – 50,000 population (20 priority counties);

- Level 3 (health center providing BEmONC) – 100,000 population(27 non priority counties);
- Level 2 (dispensary) – 10,000 population (all counties);
- Level 1 (community) – 5,000 population (all counties).

The assumptions about population were based on the World Health Organization's guidelines for emergency and basic obstetric care[6]. In addition, national norms were used for levels one, two and three.

An annual inflation rate of five percent was used for commodities, drugs and medical supplies. Additionally, public sector unit costs were used for all inputs although the interventions will be delivered through both public and private facilities. The public sector unit costs have been used on the assumption that the price of this package of interventions would be set or regulated by the government.

Table 3 presents other unit cost assumptions used by the investment framework for delivering effective RMNCAH services including basic and comprehensive emergency care. This includes human resources adjusted for the actual situation on the ground; fixed operating costs per level of care adopted from the Kenya Dynamic Costing Model 2013 but adjusted to current period using 5 percent inflation rate per year; and the infrastructure cost per level arrived through consensus by the MOH Technical Team.

Table 3: Assumed Unit Costs per Level of Care (KSH)

	(Level 4) CEmONC	(Level 3) BEmONC	Level 2	Level 1	Remark
Infrastructure upgrade	5,000,000	1,000,000	0	0	Once every 2.5 years
Human resources	18,024,768	4,876,832	880,315	120,000	Recurrent
Fixed operating	5,582,265	302,919	84,453	0	Recurrent

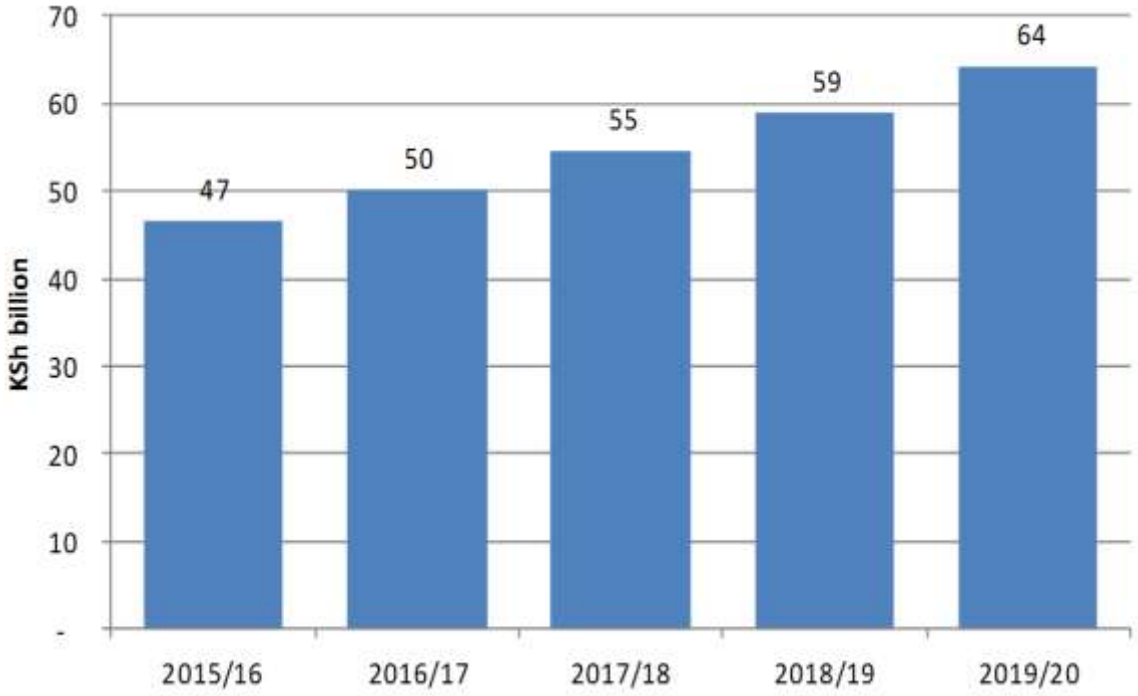
Apart from costing assumptions, resource availability was done based on three assumptions: first, the national and county contributions will increase over time; second, the contribution of development partners will remain constant; and third, the contribution from households will be constant initially but will start declining within the investment framework period.

[6] Monitoring Emergency Obstetric Care – A Handbook; WHO, UNFPA, UNICEF, AMDD; ISBN 978 92 4 154773 4

Summary Estimates of Funding Requirements

The total funding requirements for the investment framework in 47 counties in the five-year period 2015-2020 are presented below (Figure 20). All the costs are given in current prices. The total resources required will increase steadily over time as the services get scaled-up with increase in coverage and population size as well as due to improvements in equity and quality. Annual resources that are required for the implementation of the full RMNCAH investment framework will increase from KSH 47 billion (US$ 491 million[7]) in 2015/16 to KSH 64 billion (US$ 676 million) in 2019/20. Per capita cost of the investment frame work is estimated to be KSH 1,033 (US$ 10.87) in 2015/16, KSH 1,084 (US$ 11.41) in 2016/17, KSH 1,155 (US$ 12.16) in 2017/18, KSH 1,221 (US$ 12.85) in 2018/19, and KSH 1,306 (US$ 13.75) in 2019/20.

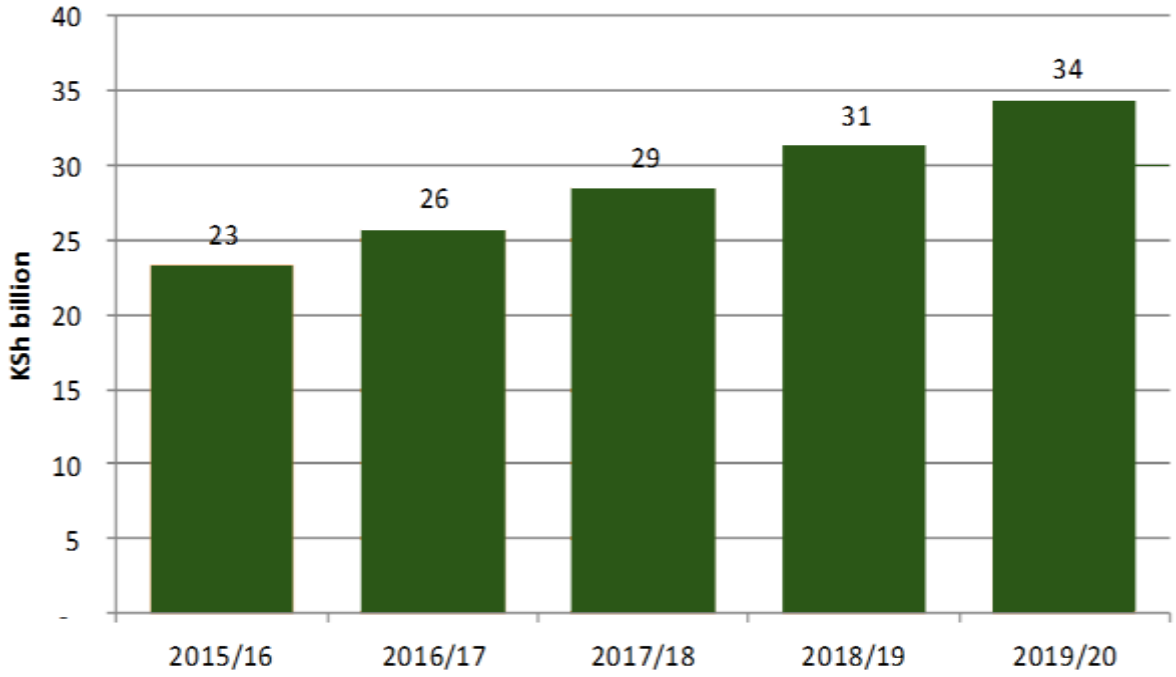
Figure 20: Total Resource Requirements 2015/16-2019/20



The total funding requirements for the 20 priority counties in each of the five years are shown in Figure 21. Total resources required in the priority counties will increase steadily from about KSH 23 billion (US$ 246 million) in 2015/16 to KSH 34 billion (US$ 362 million) in 2019/20.

[7]Exchange rate of KSH 95 = US$ 1.

Figure 21: Total Resource Requirements in the 20 Priority Counties



The distribution of the resource requirements for different sub components of RMNCAH is shown in Table 4 for the whole country and in Table 5 for the 20 priority counties.

Table 4: Resource Requirements (KSH million) for Nation-wide Scale-up

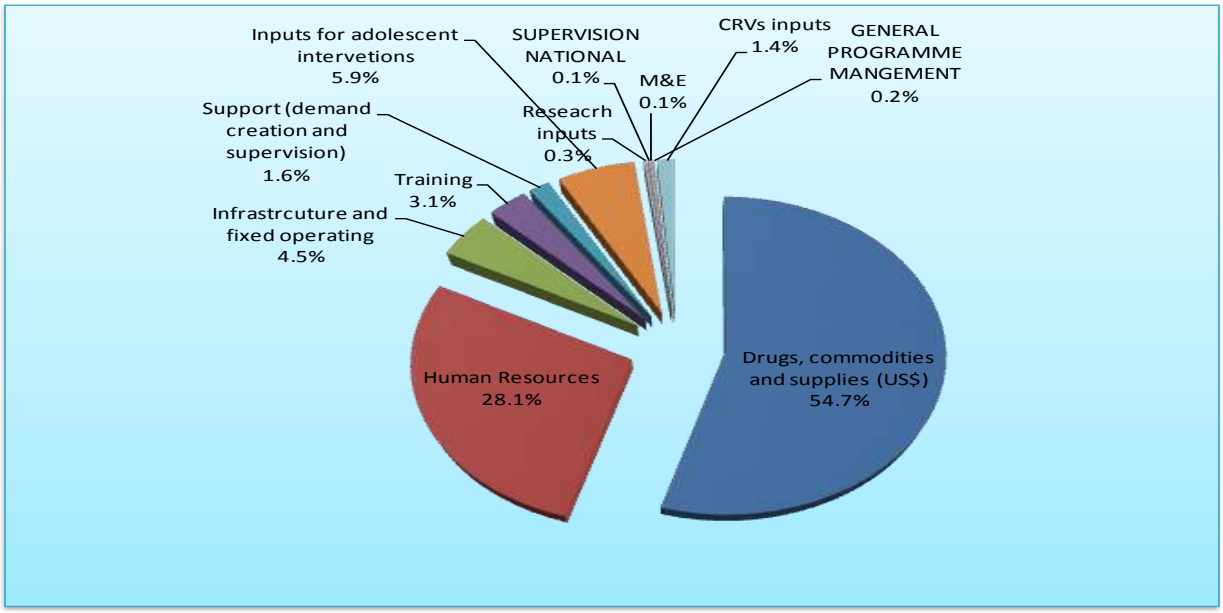
	2015/16	2016/17	2017/18	2018/19	2019/20	TOTAL	Overall Percent
ADOLESCENT AND YOUTH	1,834	2,351	2,897	3,475	4,084	14,640	5%
CHILD HEALTH	4,872	5,413	6,036	6,741	7,431	30,493	11%
FAMILY PLANNING	3,063	3,251	3,478	3,726	3,853	17,371	6%
IMMUNIZATION	5,396	5,791	6,244	6,747	7,216	31,394	11%
MATERNAL AND NEW BORN	23,150	24,927	26,995	28,993	31,486	135,552	49%
NUTRITION	6,497	7,288	8,171	9,105	9,979	41,041	15%
CRVS	1,679	1,007	672	-	-	3,358	1%
INNOVATION AND RESEARCH	126	132	139	146	153	696	0.3%
TOTAL	**46,617**	**50,161**	**54,633**	**58,933**	**64,203**	**274,546**	**100%**

Table 5: Resource Requirements (KSH million) for 20 Priority Counties

	2015/16	2016/17	2017/18	2018/19	2019/20	TOTAL	Overall Percent
ADOLESCENT AND YOUTH	844	1,094	1,359	1,642	1,941	6,880	5%
CHILD HEALTH	2,626	2,918	3,257	3,648	4,013	16,463	11%
FAMILY PLANNING	1,348	1,458	1,594	1,745	1,785	7,930	6%
IMMUNIZATION	2,547	2,753	2,987	3,257	3,494	15,038	10%
MATERNAL AND NEW BORN	12,183	13,263	14,515	15,617	17,236	72,813	51%
NUTRITION	3,940	4,423	4,953	5,537	6,058	24,910	17%
TOTAL	**23,489**	**25,908**	**28,665**	**31,445**	**34,526**	**144,034**	**100%**

The resources required by different inputs are shown in Figure 22 for the whole country. While drugs, commodities and medical supplies (55 percent) followed by human resources (28 percent) contribute to a large share of the inputs, the emphasis of the RMNCAH investment framework will be on efficient use of these investments focusing on best buys and addressing inequities. Effective delivery of quality maternal and newborn health services, that account for the highest share of resources required, will enable Kenya to progress towards SDGs.

Figure 22: Distribution of Inputs Costs



Resources Available

Table 6 presents estimated funding for RMNCAH from the national government, county governments, development partners and households. The available funding for RMNCAH is estimated to increase from KSH 41 billion (US$ 434 million) in 2015/16 to about KSH 45 billion (US$ 476 million) in 2019/20. The assumptions used are that the national and county government funding for RMNCAH will grow at 5 percent while partner support will remain constant at the current level. It is assumed that at county level, RMNCAH takes about 20 percent of the total resources for health services. The households' contribution is KSH 10 billion annually, which is the amount the households spent on reproductive health according to Kenya National Health Accounts 2012/13.

Table 6: Estimated Resources by Source

		2015/16	2016/17	2017/18	2018/19	2019/20	Total
National Government	KSH billion	4.8	5.1	5.5	5.8	6.2	27
	US$ million	51	54	58	61	65	289
Development partners	KSH billion	14	14	14	14	14	14
	US$ million	150	150	150	150	150	748
Counties	KSH billion	12	13	13	14	15	67
	US$ million	128	135	142	149	156	710
Households	KSH billion	10	10	10	10	10	50
	US$ million	105	105	105	105	105	526
Total	KSH billion	41	42	43	44	45	216
	US$ million	434	444	454	465	476	2,273

Estimated Funding Gap

The initial estimate of funding gap each year is presented in Figure 23 and Figure 24 respectively in Kenyan Shillings and US Dollars. The total funding gap is estimated at about KSH 59 billion (US$ 617 million) during the period of 5 years from 2015/16 to 2019/20. However, if the households' contribution declines gradually, as per government policy, the gap will even greater. For instance, a steady decline in the OOP expenditure for reproductive health services from KSH 10 billion 2015/16 to KSH 5 billion in 2019/20 would result in a funding gap of KSH 71 billion (US$ 748) for the five years.

Figure 23: Funding Gap (KSH)

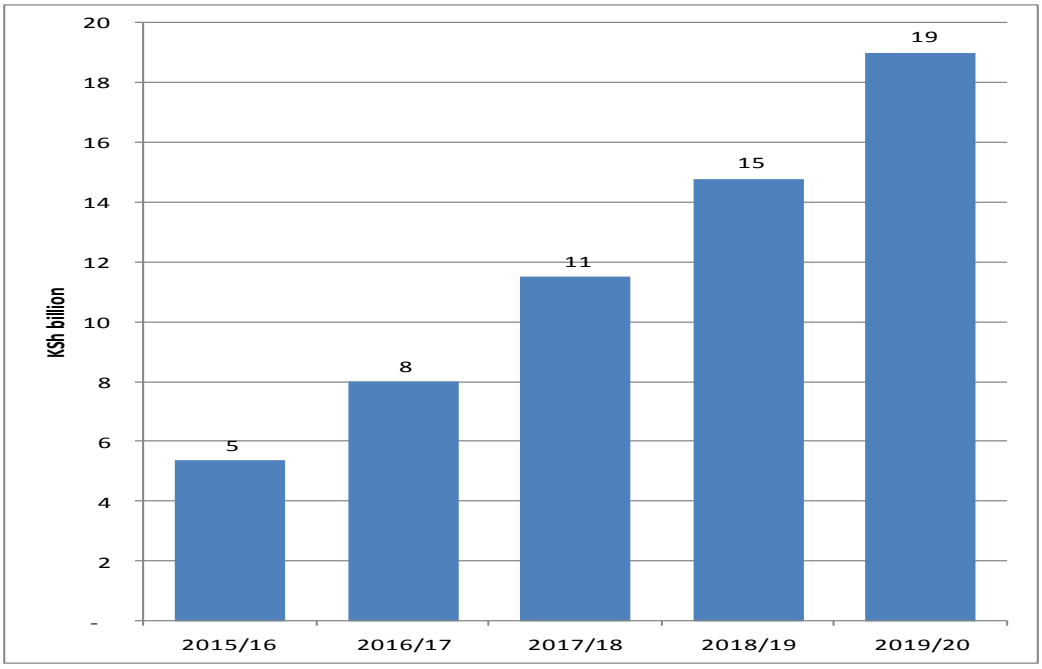
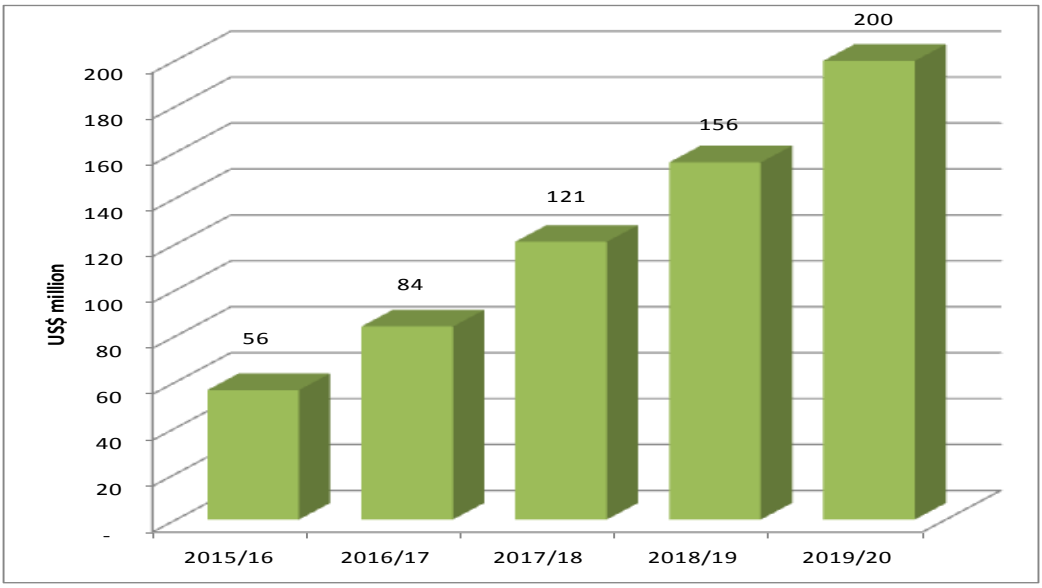


Figure 24: Funding Gap (US$)



Efficiency gains

It is assumed that with improvement in the mix of service delivery inputs, and improved availability of human resources through reduced absenteeism among others, efficiency would increase. Evidence has shown the efficiency can be increased by 20 percent for both technical and allocative efficiency (WHO report, Chisolm and Evans, 2010). UNAIDS has indicated an efficiency gain of up to 30 percent. In this investment framework, a 21.5 percent total gain in efficiency in the 5 years is assumed. Thus annual 1.5 percent increase in efficiency was assumed. The results of efficiency analysis are shown in Table 7.

Table 7: Efficiency Gains Results

	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Efficiency gains (percent)	1.5%	3.0%	4.5%	5.5%	7.0%	21.5%
Cost with efficiency gains (KSH)	46.2	48.7	50.8	51.3	51.4	248.2
Efficiency gains(KSH billion)	0.5	1.5	3.8	7.7	12.8	26.3
Efficiency gains(US$ million)	4.9	15.8	40.3	80.6	135.2	276.8
Gap with efficiency gains (KSH)	4.9	6.5	7.7	7.1	6.1	32.3
Gap with efficiency gains (US$)	51.5	68.2	80.7	74.9	64.6	339.9

Table 7 shows that improvement in efficiency could save KSH 26.3 billion (US$ 276.8 million) in the five-year period. The financial gap would decline from about KSH 59 billion (US$ 617 million) with no efficiency gains to about KSH 32 billion (US$ 339 million) with efficiency gains. This reduction is significant given limited fiscal space.

IMPACT OF INVESTMENT

The impact of the investment case on health was estimated using the LiST impact module in the OneHealth Tool (OHT). The outcomes considered were under-five deaths and maternal deaths averted. Two scenarios were considered. In scenario one, coverage targets, for the period 2014/15, were maintained throughout the years up to 2019/20. In the second scenario, the scale-up targets in the RMNCAH framework, for the country, were used in impact analysis. Table 8 and Table 9 show trends in mortality rates under the two scenarios.

Table 8: Mortality Rates Summary with 2014/15 Targets Used In All the Years

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Maternal Mortality Ratio (maternal deaths per 100,000 live births)	362.00	359.00	358.00	333.26	331.00	328.83
Neonatal mortality rate (deaths per 1,000 live births)	22.01	21.98	21.95	20.85	20.77	20.68
Under five mortality rate (deaths per 1,000 live births)	52.02	50.89	50.72	49.53	49.16	49.11

Table 9: Mortality Rates Summary with Scale-up Targets

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Maternal Mortality Ratio (maternal deaths per 100,000 live births)	362.00	346.82	333.94	321.38	309.14	297.26
Neonatal mortality rate (deaths per 1,000 live births)	22.01	21.16	20.32	19.50	18.70	17.92
Under five mortality rate (deaths per 1,000 live births)	52.02	49.16	47.26	45.34	43.33	41.77

Table 8 shows mortality rates when the RMNCAH interventions targets are held constant at the 2014/15 base year targets. In the modelling, the baseline targets were used in each of the years of the investment case. The results show that even when coverage targets for RMNCAH interventions were held constant, mortality rates would continue to decline during the period of the investment. However, reductions in mortality rates are modest. Table 9 shows that, scaling up coverage targets, as in the investment case, would produce more reductions in mortality rates than in the case where targets are held constant throughout. For instance, under-five mortality rate would decline from 52 to 42 in the scale-up case while it would only reduce from 52 to 49 with constant targets. The number of child and maternal deaths in each of the two scenarios are presented in Table 10 and Table 11.

Table 10: Deaths with Constant Coverage Targets (2014/15 Targets)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Total (0-60 months)	77,761	77,362	79,259	79,156	80,439	82,327
<1 month	33,339	34,111	34,871	33,912	34,582	35,285
1-59 months	44,422	43,250	44,389	45,244	45,856	47,042
Stillbirths	29,384	30,055	30,729	30,002	30,603	31,231
Maternal deaths	5,453	5,569	5,685	5,418	5,510	5,608

Table 11: Deaths with Scale-up Coverage Targets

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Total (0-60 months)	77,761	71,426	66,227	60,344	54,223	48,590
<1 month	33,339	30,502	27,692	24,966	22,322	19,764
1-59 months	44,422	40,924	38,535	35,378	31,901	28,826
Stillbirths	29,384	27,390	25,356	23,314	21,268	19,219
Maternal deaths	5,453	4,998	4,549	4,112	3,688	3,276

Table 10 shows deaths will increase over time if the coverage targets are held constant when the population would be increasing. As shown by the results in Table 11, scale-up of RMNCAH coverage targets would result in reduction in deaths across different categories. Deaths of children under-five years would reduce from 77,761 in 2015/15 to 48,590 in 2019/20. Additionally, maternal deaths would decline from 5,453 in 2014/15 to 3,276 in 2019/20. A similar trend is also apparent for stillbirths.

The results in Table 10 were used as proxy counterfactual for the investment case. The impact of the investment case in terms of deaths averted was obtained by subtracting the values in Table 11 from the corresponding values in Table 10; the results are shown in Table 12.

Table 12: Additional Deaths Prevented with Scale-up Coverage Targets Relative to Constant Coverage Targets

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Child deaths averted	0	5,936	13,032	18,812	26,216	33,737
Stillbirths averted	0	2,121	4,376	6,414	8,672	10,985
Maternal deaths averted	0	1,117	1,641	2,010	2,481	2,949

The results in Table 12 show that scaling up coverage through the RMNCAH investment framework would confer benefits in terms of child and maternal lives saved. These estimates of additional deaths averted (lives saved), as shown in Table 12, were used to carry out cost benefit analysis of the investment framework. In the cost benefit analysis, several assumptions were used. These were life expectancy of 60 years, productive age starting at 20 years of age, total productivity life of 40 years, discount rate of 3 percent for lives saved, discount rate of 5 percent for investment cost, and Kenya's GDP per capita of 2014 at US$ 1,338. The results of the analysis are presented in Table 13.

Table 13: Cost-Benefit Analysis

	2015/16	2016/17	2017/18	2018/19	2019/20	Total
Under-five lives saved from RMNCAH investment	5,936	13,032	18,812	26,216	33,737	97,733
Stillbirths saved from RMNCAH investment	2,121	4,376	6,414	8,672	10,985	32,568
Present value of productive life-years per child under-five	13.75	13.35	12.96	12.59	12.22	
Total present value of productive life years for under-five and averted stillbirths	110,802	232,428	327,002	439,077	546,447	1,655,755
Economic benefit from under-five lives saved and stillbirths averted (KSH billion)	14.08	29.54	41.56	55.81	69.45	210.45
Economic benefit from under-five lives saved and stillbirths averted (US$ million)	148.24	310.96	437.50	587.44	731.09	2,215.24
Mothers' lives saved from RMNCAH investment	1,117	1,641	2,010	2,481	2,949	10,198
Present value of productive life-years per mother	21.77	21.14	20.55	19.98	19.45	

Total present value of productive life-years of mothers	24,312	34,695	41,303	49,579	57,344	207,234
Economic benefit from maternal lives saved (KSH billion)	3.09	4.41	5.25	6.30	7.29	26.34
Economic benefit from maternal lives saved (US$ million)	32.53	46.42	55.26	66.33	76.72	277.26
Present value of additional cost of scaling up RMNCAH (KSH billion)	8.80	10.61	13.01	14.98	17.47	64.88
Present value of additional cost of scaling up RMNCAH (US$ million)	92.66	111.73	136.93	157.71	183.92	682.95

Table 13 shows that total economic benefit from the scale-up of interventions will be KSH 210 billion (US$ 2,215 million) from under-five lives saved and stillbirths averted. Additionally, averting maternal deaths would contribute KSH 26 billion (US$ 277.26 million). The total present value of additional cost of RMNCAH relative to constant coverage scenario was estimated at KSH 64.88 billion (US$ 682 million). The resulting benefit cost ratio is ((210.45 + 26.34)/64.88) is 3.65. This means that for every shilling invested, a return of three shillings and 65 cents is obtained. The financial rate of return is 365 percent. A study done recently in Kenya (Mwabu *et al*., 2015) also produced similar results. The study estimated financial rate of return on overall health expenditure at 343 percent although it used an econometric approach.

REFERENCES

1. African Population and Health Research Centre (APHRC). The Maternal Health Challenge in Poor Urban Communities in Kenya. APHRC 2009. http://www.realising-rights.org/docs/newsletter/maternalpercent20healthpercent20challengepercent20PB-final.pdf
2. Anyanwu J, Erhijakpor AEO. Health Expenditures and Health Outcomes in Africa. Africa Development Bank, Economic Research Paper Series no 91, 2007. http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/26820442-EN-ERWP-91.PDF
3. Atun R, Lazarus JV, Van Damme W, Coker R. Interactions between critical health system functions and HiV/AIDS, tuberculosis and malaria programmes. Health Policy Plan. 2010 Nov 25 Suppl 1:i1-3. doi: 10.1093/heapol/czq062
4. Baird J, Chirwa E, de Hoop J, Ozle B. Girl Power: Cash Transfers and Adolescent Welfare: Evidence from a Cluster-Randomized Experiment in Malawi, 2014. http://www.nber.org/chapters/c13380.pdf
5. Basinga P, Gertler PJ, Binagwaho A, Soucat AL, Sturdy J, Vermeersch CM. Effect on maternal and child health services in Rwanda of payment to primary health-care providers for performance: an impact evaluation. Lancet. 2011 Apr 23; 377(9775):1421-1428. doi: 10.1016/S0140-6736(11)60177-3.
6. Benova L, Cumming O, Gordon BA, Magoma M, Campbell OM. Where there is no toilet: water and sanitation environments of domestic and facility births in Tanzania. PLoS One. 2014 Sep 5;9(9):e106738. doi: 10.1371/journal.pone.0106738. eCollection 2014.
7. Bhutta ZA, Das JK, Bahl R, Lawn JE, Salam RA, Paul VK, Sankar MJ, Blencowe H, Rizvi A, Chou VB, Walker N; Lancet Newborn Interventions Review Group; Lancet Every Newborn Study Group. Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? Lancet. 2014 Jul 26;384(9940):347-70. doi: 10.1016/S0140-6736(14)60792-3. Epub 2014 May 19. Review. Erratum in: Lancet. 2014 Jul 26;384(9940):308. Sankar, Jeeva M [corrected to Sankar, M Jeeva].
8. Bhutta ZA, Das JK, Rizvi A, Gaffey MF, Walker N, Horton S, Webb P, Lartey A, Black RE; Lancet Nutrition Interventions Review Group; Maternal and Child Nutrition Study Group. Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? Lancet. 2013 Aug 3;382(9890):452-77. doi: 10.1016/S0140-6736(13)60996-4. Epub 2013 Jun 6. Review. Erratum in: Lancet. 2013 Aug 3; 382(9890):396.
9. Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R, Uauy R; Maternal and Child Nutrition Study Group. Maternal and child undernutrition and Overweight in low-income and middle-income countries. Lancet. 2013 Aug 3; 382(9890):427-51. doi: 10.1016/S0140-6736(13)60937-X. Epub 2013 Jun 6. Review. Erratum in: Lancet. 2013. 2013 Aug 3; 382(9890):396.
10. Bokhari FA, Gai Y, Gottret P. Government health expenditures and health outcomes. Health Econ. 2007 Mar; 16(3):257-73.
11. Chandra-Mouli V, Lane C, Wong S; What does not work in Adolescent Sexual and Reproductive Health: A review of evidence on interventions commonly accepted as best

practices. Global Health: Science and Practice, 2015 August 2015.doi:10.9745/GHSP D-15-00126.
12. Chisolm, Dan and Evans, David B. (2010). *Improving Health System Efficiency as a Means of Moving towards Universal coverage*. World Health Report (2010).
13. Denno DM, Chandra-Mouli V, Osman M. Reaching youth with out-of-facility HIV and reproductive health services: a systematic review. J Adolesc Health. 2012 Aug; 51(2):106-21. doi: 10.1016/j.jadohealth.2012.01.004. Epub 2012 Mar 19. Review.
14. Dickson KE, Simen-Kapeu A, Kinney MV, Huicho L, Vesel L, Lackritz E, de Graft Johnson J, von Xylander S, Rafique N, Sylla M, Mwansambo C, Daelmans B, Lawn JE; Lancet Every Newborn Study Group. Every Newborn: health-systems bottlenecks and strategies to accelerate scale-up in countries. Lancet. 2014 Aug 2;384(9941):438-54. doi: 10.1016/S0140-6736(14)60582-1. Epub 2014 May 19.
15. Edejer TT, Aikins M, Black R, Wolfson L, Hutubessy R, Evans DB. Cost effectiveness analysis of strategies for child health in developing countries. BMJ. 2005 Nov 19;331(7526):1177. Epub 2005 Nov 10.
16. Family Care International and the African Women's Development and Communication Network (FEMNET). Mobilizing advocates from civil society. Reproductive, Maternal, Newborn, and Child Health in a Devolved State: The Kenya Context. FEMNET 2014. www.familycareintl.org/UserFiles/File/MACS_Kenya_brief2014.pdf
17. Filmer D, Hammer J, Pritchett L. Weak Links in a Chain: A diagnosis of Health Policy in developing countries, World Bank Research Observer 15(2) August 2000, 199-224. http://www1.worldbank.org/publicsector/LearningProgram/PEAM/Hammer1.pdf
18. Frost JJ, Sonfield A, Zolna MR, Finer LB. Return on investment: a fuller assessment of the benefits and cost savings of the US publicly funded FP program. Milbank Q. 2014 Dec;92(4):696-749. doi: 10.1111/1468-0009.12080. Epub 2014 Oct 15.
19. Gertler P, Giovagnoli P, Martinez S. Rewarding provider performance to enable a healthy start to live: Evidence from Argentina's Plan Nacer. The World Bank, Policy Research Working Paper 6884. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/05/21/000158349_20140521140101/Rendered/PDF/WPS6884.pdf
20. Global Strategy for Women's Children's and Adolescents' Health 2016-2010. Every Woman Every Child. United Nations
21. Gupta S, Verhoeven M, Tiogson E. Does Higher Government Spending Buy Better Results in Education and Health care? IMF, Working Paper, 1999. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=880548##
22. Gupta S, Verhoeven M, Tiogson E. Public Spending on Health Care and the Poor. IMF, Working Paper, 2001. http://www.imf.org/external/pubs/ft'wp/2001/wp01127.pdf
23. Handa S, Halpern CT, Pettifor A, Thirumurthy H. The government of Kenya's cash transfer program reduces the risk of sexual debut among young people age 15-25. PLoS One. 2014 Jan 15;9(1):e85473. doi: 10.1371/journal.pone.0085473. eCollection 2014.
24. Haushofer J, Shapiro J. Impacts of Unconditional Cash Transfers-Evidence from a Randomized Controlled Trial in Kenya. UCT 2013. http://www.princeton.edu/~joha/publications/Haushofer_Shapiro_UCT_2013.pdf
25. KAIS. Kenya AIDS Indicator Survey. 2012.

26. Kim TK, Lane SR. Government Health Expenditure and Public Health Outcomes: A Comparative Study among 17 Countries and Implications for US Health Care Reform. American International Journal of Contemporary Research Vol. 3 No. 9; September 2013. http://www.aijcrnet.com/journals/Vol_3_No_9_September_2013/2.pdf
27. KDHS and ICF-Macro. Kenya Demographic and Health Survey 2014. Calverton, Maryland: Kenya National Bureau of Statistics and ICF Macro, 2014. KDHS 2014. http://dhsprogram.com/pubs/pdf/PR55/PR55.pdf
28. KDHS and ICF-Macro. Kenya Demographic and Health Survey 2008/9. Calverton, Maryland: Kenya National Bureau of Statistics and ICF Macro, 2010. KDHS 2010. http://dhsprogram.com/pubs/pdf/fr229/fr229.pdf
29. KPMG services. Devolution of health services in Kenya, lessons from other countries. KPMG 2014. https://www.kpmg.com/Africa/en/IssuesAndInsights/Articles-Publications/Documents/Devolutionpercent20ofpercent20HCpercent20Servicespercent20inpercent20Kenya.pdf
30. LaCroix JM, Snyder LB, Huedo-Medina TB, Johnson BT. Effectiveness of mass media interventions for HIV prevention, 1986-2013: a meta-analysis. J Acquir Immune Defic Syndr. 2014 Aug 15;66 Suppl 3:S329-40. doi: 10.1097/QAI.0000000000000230.
31. Lawn JE, Blencowe H, Oza S, You D, Lee AC, Waiswa P, Lalli M, Bhutta Z, Barros AJ, Christian P, Mathers C, Cousens SN; Lancet Every Newborn Study Group. Every Newborn: progress, priorities, and potential beyond survival. Lancet. 2014 Jul 12;384(9938):189-205. doi: 10.1016/S0140-6736(14)60496-7. Epub 2014 May 19. Review. Erratum in: Lancet. 2014 Jul 12;384(9938):132.
32. Liu L, Oza S, Hogan D, Perin J, Rudan I, Lawn JE, Cousens S, Mathers C, Black RE. Global, regional, and national causes of child mortality in 2000-12, with projections to inform post-2015 priorities: an updated systematic analysis. Lancet. 2014 Sept 30.
33. Lule E, Rosen JE, Singh S, et al. Adolescent Health Programs. In: Jamison DT, Brem[an] JG, Measham AR, Knowles JC, Behrman JR. Disease Control Priorities in Developing Countries. 2nd edition. Washington (DC): World Bank; 2006. Chapter 59. Available from: http://www.ncbi.nlm.nih.gov/books/NBK11778/
34. Kendall T, Danel I. Research and Evaluation Agenda for HIV and Maternal Health in sub-Saharan Africa: Women and Health Initiative Working Paper No. 1. Women and Health Initiative, Harvard School of Public Health: Boston, MA, 2014. http://www.mhtf.org
35. Maticka-Tyndale E, Barnett JP. Peer-led Interventions to reduce HIV risk of youth: a review. Eval Program Plann. 2010 May;33(2):98-112. doi: 10.1016/j.evalprogplan.2009.07.001. Epub 2009 Aug 3. Review.
36. Mdege ND, Chindove S, Ali S. The effectiveness and cost implications of task-shifting in the delivery of antiretroviral therapy to HIV-infected patients: a systematic review. Health Policy Plan. 2013 May;28(3):223-36. doi: 10.1093/heapol/czs058. Epub 2012 Jun 26. Review
37. Ministry of Health, Kenya. Kenya Health Policy Forum. Improving Health Outcomes and services for Kenyans: Financing for Universal Health Coverage. MOH 2014A. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/10/28/000469252_20141028113932/Rendered/PDF/918630WP0P14870nd0Financing0for0UHC.pdf
38. Ministry of Health, Kenya. Kenya Health Sector Strategic and Investment Plan 2014 – 2018. MOH 2014B.

http://www.health.go.ke/images/downloads/120112%20MW%20KHSSP%20BOOK%202102 2015.pdf
39. Ministry of Health, Kenya. Kenya Service Availability and Readiness Assessment Mapping (SARAM) Report 2013, Nairobi. MOH 2014C. http://www.health.go.ke/images/downloads/Kenya-Service-Availability-and-Readiness-Assessment-Mapping-SARAM.pdf
40. Ministry of Health, Kenya. Reproductive and Maternal Health services unit annual report 2012-2013 and 2013-2014. MOH 2013.
41. Ministry of Public Health & Sanitation and Ministry of Medical Services (MOH). Kenya Health Policy 2012-2030. MOH 2012. Nairobi.http://countryoffice.unfpa.org/kenya/drive/FinalKenyaHealthPolicyBook.pdf
42. Ministry of Public Health and Sanitation and Ministry of Medical Services (2010) National Roadmap for Accelerating the Attainment of MDGs related to Maternal and Newborn Health in Kenya, Nairobi. MOH 2010. https://www.k4health.org/sites/default/files/Roadmap%20to%20Maternal%20and%20Newborn%20Health%20Booklet.pdf
43. Ministry of Public Health and Sanitation and Ministry of Medical Services. National Reproductive Health Strategy 2009-2015, Nairobi. MOH 2009. https://www.k4health.org/sites/default/files/National%20RH%20Strategy_0.pdf
44. Mwabu G, Mwai D, Kioko, U., Korir J, Muthaka D, Akumu A, Kaboro S. *The Returns to Health Investments in Kenya*. Washington, DC: Futures Group, Health Policy Project, 2015.
45. National Coordinating Agency for Population and Development (NCAPD) [Kenya], Ministry of Medical Services (MOMS) [Kenya], Ministry of Public Health and Sanitation (MOPHS) [Kenya], Kenya National Bureau of Statistics (KDHS) [Kenya], ICF Macro. 2011. Kenya Service Provision Assessment Survey 2010. Nairobi, Kenya: National Coordinating Agency for Population and Development, Ministry of Medical Services, Ministry of Public Health and Sanitation, Kenya National Bureau of Statistics, and ICF Macro. https://dhsprogram.com/pubs/pdf/SPA17/SPA17.pdf
46. National Coordinating Agency for Population and Development (NCAPD), Ministry of Medical Services (MOMS), Ministry of Public Health and Sanitation (MOPHS), Kenya National Bureau of Statistics (KDHS) and ICF Macro. Kenya Service Provision Assessment Survey 2010. Nairobi, Kenya: NCAPD, MOMS, MOPHS, KDHS and ICF Macro, 2011. https://dhsprogram.com/pubs/pdf/SPA17/SPA17.pdf
47. National Council for Population and Development (NCPD) and Population Reference Bureau (PRB). How Demographic Change Can Spur Development in Kenya. NCPD Policy Brief No.44 July 2014. Available from http://ncpd-ke.org/ncpdweb/policy-briefs.
48. National Council for Population and Development (NCPD) and Population Reference Bureau (PRB). Improving Sexual Reproductive Health Information and Services for Youths – It's Worth It!. NCPD Policy Brief No.29 December 2012. Available from http://ncpd-ke.org/ncpdweb/policy-briefs
49. Pew Research. Emerging Nations Embrace Internet, Mobile Technology [Internet]. Global Attitudes Project. 2014 [cited 2014 Jun 18]. Available from: http://www.pewglobal.org/2014/02/13/emerging-nations-embrace-internet-mobile-technology

50. PMNCH. A Global Review of the Key Interventions Related to Reproductive, Maternal, Newborn and Child Health (RMNCH). Geneva: Partnership for Maternal, Newborn and Child Health. 2011. http://www.who.int/pmnch/topics/part_publications/PMNCH_Report_2011_-_29_09_2011_full.pdf
51. Praekelt Foundation. Mobile Stats for Africa 2012 [Internet]. 2012 [cited 2014 Jun 18]. Available from: http://mobilekenya.wordpress.com/2012/07/11/mobile-stats-for-africa-2012-praekelt-foundation/
52. Requejo J, Bryce J, Victora C. Building a Future for Women and Children: The 2012 Report. Washington D.C.: World Health Organization, UNICEF, 2012 http://www.countdown2015mnch.org/documents/2012Report/2012-complete-no-profiles.pdf
53. Save The Children. The urban Disadvantaged. State of the world's mothers 2015. Save The Children, 2015. http://www.savethechildren.org/atf/cf/percent7B9def2ebe-10ae-432c-9bd0-df91d2eba74apercent7D/SOWM_EXECUTIVEpercent20SUMMARY.PDF
54. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller AB, Daniels J, Gülmezoglu AM, Temmerman M, Alkema L. Global causes of maternal death: a WHO systematic analysis. Lancet Glob Health. 2014 Jun;2(6):e323-33. doi: 10.1016/S2214-109X(14)70227-X. Epub 2014 May 5.
55. Stenberg K, Axelson H, Sheehan P, Anderson I, Gülmezoglu AM, Temmerman M, Mason E, Friedman HS, Bhutta ZA, Lawn JE, Sweeny K, Tulloch J, Hansen P, Chopra M, Gupta A, Vogel JP, Ostergren M, Rasmussen B, Levin C, Boyle C, Kuruvilla S, Koblinsky M, Walker N,'de Francis'o A, Novcic N, Presern C, Jamison D, Bustreo F; Study Group for the Global Investment Framework for Women's and Children's Health. Advancing social and economic development by investing in women's and children's health: a new Global Investment Framework. Lancet. 2014 Apr 12;383(9925):1333-54. doi: 10.1016/S0140-6736(13)62231-X. Epub 2013 Nov 19.
56. The World Bank. Africa can End Poverty. Why do Kenyans want to live in cities? The World Bank 2011. Available at http://blogs.worldbank.org/africacan/why-do-kenyans-want-to-live-in-cities
57. The World Bank. Service Delivery Indicators. The World Bank, 2013. http://data.worldbank.org/data-catalog/service-delivery-indicators
58. The World Bank. Using Results-Based Financing to Achieve Maternal and Child Health: Progress Report 2013. The World Bank, 2013. Available from http://rbfhealth.org/progressreport2013
59. UNICEF. State of the World Children. UNICEF 2001. http://www.unicef.org/sowc01/
60. World Health Organization (WHO). Essential Interventions, Commodities and Guidelines for Reproductive, Maternal, Newborn and Child Health. The Partnership for Maternal Health, Newborn and Child Health and the Aga Khan University, 2012. http://www.who.int/pmnch/knowledge/publications/201112_essential_interventions/en/
61. World Health Organization (WHO). Trends in Maternal Mortality: 1990 to 2013 Estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division. WHO 2014. http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/

62. Zuurmond MA, Geary RS, Ross DA. The effectiveness of youth centers in increasing use of sexual and reproductive health services: a systematic review. Stud Fam Plann. 2012 Dec;43(4):239-54. doi: 10.1111/j.1728-4465.2012.00324.x. Review.

ANNEX 1. DEVELOPMENT OF THE RMNCAH INVESTMENT FRAMEWORK

The RMNCAH investment framework is the outcome of an eight-month long, MOH-led consultative process involving all 47 counties, MOH Departments, the Ministry of Interior and Coordination of National Government, the National Treasury, different government entities at the national level and various stakeholders including civil society, FBOs, private sector, professional associations and development partners.

Two MOH-appointed national consultants and two focal points from the Planning, Policy and Health Financing Unit and the Division of Family Health facilitated the consultative process and development of this RMNCAH investment framework.

The consultative process began during the *Delivering Universal Health Coverage and Promises for Mothers and Children of Kenya* High Level Policy Consultation held on January 21-23, 2015, in Naivasha, Kenya. The aforementioned stakeholders led by Dr. Muraguri, the Director of Medical Services (MOH), His Excellency Governor Jack Ranguma (Chair, County Executive Committee (CEC), Health, Kisumu County) and His Excellency Governor Ruto (former Chair Council Of Governors, and Governor Bomet County) participated in discussions on the development of Kenya's multi-year plan for RMNCAH to address the high maternal and neonatal mortality. The consultative process also highlighted the need for additional domestic resource mobilization leveraged by support from development partners and a strengthened CRVS system. Next steps included: (1) identify core technical teams representing county and national governments; (2) agree on sustained TA support; (3) constitute a consultative group involving a wider range of stakeholders; (4) hold first round technical consultations; (5) review existing and planned data including rapid assessments; (6) hold second round technical consultations and prepare zero draft of investment framework; (7) receive feedback from the consultative group; and (8) share first draft of Kenya RMNCAH Investment framework by April 30, 2015.

A second RMNCAH technical consultative workshop was held in Nairobi, Kenya, from February 23-27, 2015, and culminated on March 2, 2015, with a full-day technical consultation with stakeholders from civil society, H4+, development and private sector partners and academia. The MOH led the consultations with the various programs of the Division of Family Health and the Department of Policy, Planning and Health Financing, the Civil Registration Department, NCPD and development partners to discuss: (1) the strategy for Women, Child and Adolescent Health; (2) process for prioritization of transformative and innovative interventions; (3) the results to be achieved; (4) key bottlenecks and challenges including demand side factors, coverage, quality and equity that hinder progress; and (5) how to estimate the costs achieving the results. Agreed upon next steps included: (1) Schedule a meeting of the National Steering Committee chaired by the Director of Medical Services (DMS) within one week of the consultation; (2) Have the DMS appoint two MOH focal points (a technical officer and a health financing officer); (3) develop and contract two lead Kenyan consultants to support development of RMNCAH investment

framework; (4) identify short-term TA support requirements for RMNCAH investment framework; (5) engage county governments including CEC health forum and governors on development of the RMNCAH investment framework; and (6) plan follow up meeting in March 2015 following release of KDHS and technical modeling and analysis with more in-depth evaluation of prioritized interventions.

A third RMNCAH technical consultative workshop was held in Nairobi, Kenya, between April 21-30, 2015, enable national consultants to: (1) establish an evidence-based methodology to prioritize counties; (2) agree on the methodology used for costing the prioritized interventions; and (3) develop a draft outline for the costed RMNCAH investment framework. Technical discussions were facilitated by the two MOH focal points with all stakeholders, county health executives and county technical advisors. As next steps, they decided to: (1) carry out adequate consultations with the counties, civil society, development partners, the National Treasury; (2) continue the development of the RMNCAH Investment Framework; (3) establish final list of priority interventions and best buys; (4) task MOH with identifying a final list of priority counties based on evidence and robust analysis of data; (5) identify additional TA needs and seek support from partners; and (6) facilitate the development of a communication strategy using consistent messaging to effectively engage stakeholders.

A fourth RMNCAH technical consultation was held in Nairobi, Kenya, from June 9-25 to support the national consultants in the preparation of the RMNCAH Investment Framework for validation. Technical discussions were facilitated by the two MOH focal points with stakeholders and various MOH units. It was decided to: (1) continue development and revisions of the RMNCAH Investment Framework and (2) disseminate the draft RMNCAH Investment Framework internally to the MOH and then externally to the external reviewers and development partners, other stakeholders and counties.

A Validation Meeting was held on July 31, 2015, which was attended by all stakeholders, CECs and technical advisors from all 47 counties, NT, the Frontier County Development Council, MOH Departments and government entities. Below is a summary of the validation meeting.

TECHNICAL CONSULTATION AND VALIDATION MEETING, NAIROBI, KENYA JULY 31, 2015

The Government of Kenya is strongly committed to addressing prioritized bottlenecks that hinder progress in improving RMNCAH outcomes. The Government of Kenya is currently developing a multi-year RMNCAH investment framework that will guide the development of county RMNCAH implementation plans to address high maternal and child mortality under the devolved health system. This requires effective engagement of all key stakeholders, especially representatives of the county governments and civil society, including faith-based organizations and private sector (for profit and nonprofit).

The Ministry of Health (MOH) hosted a technical consultation and validation meeting on July 31, 2015, that was attended by National, County high level representatives, development partners

and key stakeholders including representatives of civil society and private sector. This meeting builds on a series of stakeholder discussions that started with high level policy consultation held at Naivasha during January 21-23, 2015, and follow-on technical missions and interactive sessions held since then.

The consultation was joined by H.E. Governor Ranguma (Committee Chair, Health and Biotechnology, COG), H. E. Abbas Gulled and H.E. Caleb Amaswachi, Deputy Governors from Isiolo and Vihiga, Hon. Dr. Mulwa (Committee Chair, Health Council, CECs) and included County Executives Committee (CEC) members for Health and their delegations, private sector, civil society and other development partners.

Dr. Nicholas Muraguri, Director of Medical Services, and Dr. Peter Kimuu, Head, Department of Policy Planning and Health Financing, Dr. Amoth, Head of the Division of Family Health have provided constant policy direction and guidance to the development of the investment framework. Dr. Barmasai Kigen, Head of Reproductive Health presented the summary findings of the investment framework and facilitated the technical discussions coordinated by Prof Peter Gichangi, Lead Consultant. Dr. Julius Korir presented the preliminary estimates of costs, financing gaps and potential impact. Dr. Omar (MOH) and Dr. Jeanne Patrick (MOH), the focal points for development of investment framework, ensured effective facilitation and organized the validation meeting.

The main objectives of the meeting were to: (i) hold consultations with all stakeholders, especially national and county leadership, to validate the RMNCAH multi-year investment framework; and (ii) define next steps.

Key Messages and Feedback from the meeting

H. E Governor Ranguma provided his perspectives on effective delivery of health care in Kenya:

- Everyone has a role in achieving the health goals and the MOH should ensure that we work as a team to achieve the desired health outcomes.
- The Council of Governors will work closely with the National Government and the Donors to achieve the desired health outcomes of Kenya.
- Devolution is a gift for Kenya and an opportunity to progress but there is need to accelerate the process.
- We should encourage the ongoing work and support the evolving program and specific projects.
- Better and closer monitoring is required to determine and track health outcomes.
- “Quality” and “access” are the two crucial problems faced by the health sector and the key solutions are in ensuring appropriate investments, workforce and medical technology.
- It is important to invest in primary health care which is more efficient as it helps early diagnosis and timely treatment.

- An important challenge is the poor attitudes of the health workers towards their clients. Respect and effective communication with clients should be part of provider basic training.
- Kenya is committed to achieving Universal Health Coverage (UHC) but we need to start the journey to UHC with small steps to improve RMNCAH outcomes. Providing comprehensive cover for 1,000 vulnerable groups initially in each county is a good beginning and some counties are already providing social protection.
- It is important to reduce pilferage in supply of commodities by engaging citizens and investing in technologies to improve the LMIS and electronic patient records.

Photo: © Dr. G N V Ramana

General comments:

- The document is well written and organized and captures key RMNCAH technical aspects.
- Adolescent Health that has been neglected in the past is well captured and the strong focus on adolescents is a very positive aspect of the RMNCAH investment framework.
- It is important to focus on low hanging fruit based on evidence, and give attention to interventions such as school-based services, long term mass media engagement and cash transfer programs. More discussion is required on why coverage of youth friendly services remains so low and on addressing sensitivities around comprehensive sexuality education.
- Although the RMNCAH investment framework prioritizes 20 counties, the other 27 counties also have underserved groups whose needs also should be addressed.
- Priority counties may not have capacity to develop county implementation plans and will require Technical Assistance.
- It is important to respond to specific needs of Arid and Semi-Arid Land (ASAL) counties, especially emergency services.

- The targets have been set at very modest levels, but Kenya could be more aggressive on accelerating progress.
- How could the incentives provided to motivate human resources be sustained?
- Several targeted actions will be required to realize the objectives of this investment framework and will require a review of existing RMNCAH strategies and guidelines including passing of supportive legislations.
- The RMNCAH investment framework is "business unusual" while the implementation structures remain "usual". This will require effective structures such as a National Maternal, Newborn and Child and Adolescent Health council to invigorate advocacy, resource mobilization and monitoring. At least 10 years will be required to change the mindset and achieve results.
- It is important to shift the conversation from technical level to the political level and involve key stakeholders such as the Council of Governors, Senate and Parliamentary committees on health.
- Demand side factors are important but the community strategy has not been implemented nationwide.
- It is critical to make everyone accountable and ensure that they deliver on their commitments. It would be desirable to have a dedicated section on leadership, governance and accountability and define a clear role of CSOs in ensuring accountability.
- It is important to be clear about intergovernmental roles and responsibilities.

Costing comments:

- Counties already have integrated development plans and budgets. What will be the relationship of the RMNCAH investment framework to the current county health integrated plan?
- What assumptions are used to estimate county expenditures on health?
- Whether costs of demand side barriers such as vouchers for series and transport to facilities have been included? It is also important to include costs of the community health strategy.
- Currently, the inadequate health budget is a concern. How does the framework propose to address inadequate budgetary allocation to health?
- Universal Health Coverage requires more clarity on how to operationalize and should not be just theory.
- Estimation of the financing gap should take into account household contributions.
- How will the financing gap be closed?
- How will wastage in the public sector estimated to range from 30 percent to 60 percent be reduced?
- Purchasing and institutional arrangements for implementation need to be elaborated in the RMNCAH investment framework.

Private Sector comments:

- The RMNCAH investment framework needs to be clearer on how to engage and optimize the potential of the private sector.
- Can some activities be outsourced to non-state actors?

ANNEX 2. SELECTION OF RMNCAH PRIORITY COUNTIES

This note summarizes some of the principles and assumptions that underpin the sample county lists that have been selected by MOH. The most current data with county disaggregation was used. As far as possible, the data used in the generation of the potential lists was taken from the most recent KDHS 2014 (KDHS 2014). One exception is information on HIV, which was obtained from the Kenya National AIDS and STI Control Programme.

The goal is to accelerate efforts to end preventable maternal, newborn, child and adolescent deaths and improve the health and quality of life of women, adolescents and children. In the calculations, all the multiple dimensions (RMNCAH) were accounted for. Table A1 shows the five dimensions and corresponding indicators that were considered together with the key considerations.

A multidimensional ranking with sensitivity analysis was used. Within each dimension, more than one indicator was considered and the sensitivity of the ranking to the choice of a particular indicator was assessed. For some indicators, no sensitivity analysis was done as the indicators had no rivals (e.g. mCPR in the RH dimension, ANC+ and SBA in the MNH dimension). Three child health indicators were considered but were ultimately not included because they combined need and access (see comments in Table A1). All variables were ranked to denote monotonically improving performance (e.g. pregnancy was ranked in descending order and all others were ranking in increasing order). In order to arrive at the final ranking, a simple average across the ranked indicators was calculated. The various scenarios with sensitivity analyses are shown in Table A2.

Using the above methodology, the first 10 counties were ranked based on the proportions of the key demographics satisfying the indicator in question, e.g. percentage of women aged 15-49 years using mCPR, or percentage of pregnant women aged 15-49 delivered by a skilled attendant, etc.

To avoid disadvantaging counties with large population sizes in deriving the top 15 high burden county rankings, the remaining five counties were added based on the absolute rankings of the indicators considered (outlined in Table A1 below). An alternative scenario ranks the top 10 counties based on absolute figures, and the remaining five based on percentage versions of the indicators in question (see Table A2).

What is the likely impact on key indicators if we reach these counties?

Tables A3-5 show examples of the likely impact of the two ranking scenarios on two maternal health indicators, SBA and ANC+, and one child health indicator, vaccination:

Table A3 shows that the top 10 counties ranked by percentage represent a population of 270,691 women who do not give birth using a skilled provider. Focusing the interventions on

these counties has the potential to increase the uptake of SBA from its current value of 61.8 percent to 71 percent nationally.

The top 10 counties ranked by absolute populations represent a population of 346,779 women who did not use a skilled provider, and focusing the interventions on these ten counties potentially increases the uptake of SBA to 74 percent. Choosing the top ten counties in terms of percentage rankings, and the remaining five in terms of absolute numbers, or choosing the top ten counties by absolute rankings and the remaining five in terms of percentages, both have the potential to increase uptake of SBA to 77 or 78 percent respectively.

Similarly, Table A4 shows that the top 10 counties ranked by percentage represent a population of 251,953 women who do not undergo more than 4 ANC visits during pregnancy. Focusing the interventions on these counties has the potential to increase the uptake of ANC 4+ from its current value of 57.6 percent nationally to 66 percent, assuming the interventions are successful among 80 percent of the target population. Again, the top 10 counties ranked by absolute populations represent a population of 367,879 women who do not undergo 4 or more ANC visits, and focusing the interventions on these 10 counties potentially increases the uptake of ANC4+ to 69 percent. Choosing the top 10 counties in terms of percentage rankings, and the remaining five in terms of absolute numbers, or choosing the top 10 counties by absolute rankings and the remaining five in terms of percentages, both have the potential to increase uptake of ANC 4+ to72-73 percent.

Last, Table A5 shows that the top 10 counties ranked by percentage represent a population of 143,214children who are not fully vaccinated. Focusing the interventions on these counties has the potential to increase the percentage of children fully vaccinated from its current value of 67.5 percent nationally to 75 percent, assuming the interventions are successful among 80 percent of the target population. Again, the top 10 counties ranked by absolute populations represent a population of 215,854children who are not fully vaccinated, and focusing the interventions on these 10 counties potentially increases the percentage of children fully vaccinated to 79 percent. Choosing the top 10 counties in terms of percentage rankings, and the remaining five in terms of absolute numbers, or choosing the top 10 counties by absolute rankings and the remaining five in terms of percentages, have the potential to increase full vaccination to 81 percent or 82 percent respectively.

Table A1. RMNCAH dimension and indicators considered

Dimension	Indicator	Comments
Reproductive health	Any modern contraceptive method (mCPR)	Indicator is well established and validated.
Maternal and Neonatal health	Delivery by a skilled provider (SBA)	Indicators are well established and validated.
	4+ antenatal care visits (ANC4)	
Child health	Full immunization	Indicators are well established and validated.

	Children with diarrhea seeking advice on treatment	These variables have not been included because it combines need and access.
	Children with symptoms of ARI seeking advice on treatment	
	Children with fever seeking advice on treatment	
Adolescent health	Percentage of teenage women aged 15-19 currently pregnant	Not included
HIV	HIV prevalence among females 15-49	Indicator is well established and validated.

Table A2. Scenarios with alternative county lists generated

	Column 1	Column 2	Column 3	Column 4
	Rank by percent (mCPR, SBA, ANC4, Vaccination, HIV Prev-Female)	Rank by # (mCPR, SBA, ANC4, Vaccination, HIV Prev-Female)	Rank-top 10 by percent + top 5 by #	Rank-top 10 by # + top 5 by percent
1	Turkana	Kakamega	Turkana	Kakamega
2	West Pokot	Nairobi	West Pokot	Nairobi
3	Mandera	Bungoma	Mandera	Bungoma
4	Narok	Turkana	Narok	Turkana
5	Wajir	Nakuru	Wajir	Nakuru
6	Samburu	Mandera	Samburu	Mandera
7	Migori	Narok	Migori	Narok
8	Trans-Nzoia	Kilifi	Trans-Nzoia	Kilifi
9	Garissa	Wajir	Garissa	Wajir
10	Marsabit	Homa Bay	Marsabit	Homa Bay
11	Uasin Gishu	Uasin Gishu	Kakamega	West Pokot
12	Kitui	Kitui	Nairobi	Samburu
13	Trans-Nzoia	Trans-Nzoia	Bungoma	Migori
14	West Pokot	West Pokot	Nakuru	Trans-Nzoia
15	Kisii	Kisii	Kilifi	Garissa

Table A3. Likely impact of alternative county lists on skilled birth attendance

Skilled Birth Attendants Current coverage 61.8percent	Unmet Population	Likely Impact
Top 10 by Rank (percent)(column 1 table A2)	270691	71
Top 10 by Rank (#)(column 2 table A2)	346779	74
Top 10 by Rank (percent) + Top 5 by Rank (#)(column 3 table A2)	447867	77
Top 10 by Rank (#) + Top 5 by Rank (percent)(column 4 table A2)	466135	78

Table A4. Likely impact of alternative county lists on 4+ ANC visits

ANC4 Current coverage 57.6percent	Unmet Population	Likely Impact
Top 10 by Rank (percent)(column 1 table A2)	251953	66
Top 10 by Rank (#)(column 2 table A2)	367879	69
Top 10 by Rank (percent) + Top 5 by Rank (#)(column 3 table A2)	464661	72
Top 10 by Rank (#) + Top 5 by Rank (percent)(column 4 table A2)	477844	73

Table A5. Likely impact of alternative county lists on vaccinations

Vaccination Current coverage 67.5percent	Unmet Population	Likely Impact
Top 10 by Rank (percent)(column 1 table A2)	143214	75
Top 10 by Rank (#)(column 2 table A2)	215854	79
Top 10 by Rank (percent) + Top 5 by Rank (#)(column 3 table A2)	265871	81
Top 10 by Rank (#) + Top 5 by Rank (percent)(column 4 table A2)	273923	82

Final List of Counties Selected by MOH

Kakamega	West Pokot	Kilifi	Kitui
Nairobi	Samburu	Wajir	Tana River
Bungoma	Migori	Homa Bay	Lamu
Turkana	Trans-Nzoia	Mandera	Isiolo
Nakuru	Garissa	Narok	Marsabit

ANNEX 3. INTERVENTIONS WITH PROVEN EFFICACY

Table A6: Interventions with proven efficacy and by delivery channels

Delivery Channels				
	Community	Outreach	First Level Facility	Hospitals
Package 1: Family Planning				
Modern FP methods (pill, condom, injectable, IUD, Implant, female sterilization, male sterilization, LAM, vaginal barrier method, vaginal tablets, and other contraceptives)	x	x	x	x
Package 2: Maternal and newborn health				
Safe abortion	…	…	x	x
Post-abortion case management	…	…	x	x
Ectopic pregnancy case management	…	…	…	x
Syphilis detection and treatment in pregnant women	…	…	x	x
Multiple micronutrient supplementation	…	x	…	…
Balanced energy supplementation	NA	NA	NA	NA
Management of pre-eclampsia (magnesium sulphate)	…	…	x	x
Detection and management of diabetes in pregnancy	NA	NA	NA	NA
Detection and management of fetal growth restriction	NA	NA	NA	NA
Skilled birth assistance during labor	…	…	x	x
Active management of the third stage of labor	…	…	x	x
Management of eclampsia with magnesium sulphate	…	…	x	x
Neonatal resuscitation	…	…	x	x
Kangaroo mother care	…	…	x	x
Clean practices and immediate essential newborn care	x	…	…	…
Antenatal corticosteroids for preterm labor	…	…	…	x
Antibiotics for preterm premature rupture of membranes	…	…	x	x
Induction of labor (beyond 41 weeks)	…	…	…	x
Neonatal infections or newborn sepsis – full supportive care	…	…	…	x
Preventive postnatal care	…	…	x	x
Periconceptional folic acid supplementation	x	x	x	…
Calcium supplementation for prevention and treatment of pre-eclampsia and eclampsia	…	…	x	…
Package 3: Malaria				
Insecticide-treatment materials	x	…	…	…
Pregnant women sleeping under an insecticide-treated bed net	x	…	…	…

Intermittent preventive treatment-for pregnant women	…	…	x	…
Malaria treatment in children 0-4 years	…	…	x	…
Treatment of malaria in pregnant women	…	…	x	…
Package 4: HIV				
Prevention of mother to child transmission	…	…	x	x
ART (first-line treatment) for pregnant women	…	…	x	x
Cotrimoxazole for children	x	…	x	x
Pediatric ART	…	…	x	x
Package 5: Immunization				
Tetanus toxoid vaccine (pregnant women)	…	x	x	x
Rotavirus Vaccine	…	…	x	…
Measles Vaccine	…	x	x	…
DPT vaccine	…	…	x	…
Haemophilus influenza type b vaccine (Hib) vaccine	…	…	x	…
Polio vaccine	…	x	x	…
BCG vaccine	…	…	x	…
Pneumococcal vaccine	…	…	x	…
Meningitis vaccine	NA	NA	NA	NA
Package 6: Child Health				
Oral rehydration therapy	x	…	x	…
Zinc for diarrhea treatment	x	…	x	…
Antibiotics for treatment of dysentery	…	…	x	x
Pneumonia treatment in children 0-4 years	x	…	x	…
Vitamin A for measles treatment in children 0-4 years	…	…	x	…
Breast feeding counselling and support	…	x	x	…
Rates of exclusive breastfeeding modelled 1-5 months	…	…	…	…
Complementary feeding counselling and support	x	…	x	…
Management of severe malnutrition in children 0-4 years	x	…	x	x
Vitamin A supplementation in infants and children 6-59 months	x	x	…	…
All interventions	…	…	…	…
Average coverage across 50 interventions				

ANNEX 4. OPTIMIZING SERVICE DELIVERY TO ACHIEVE RMNCAH RESULTS

Table A7: Service delivery

Health Service Delivery	Prioritized Bottlenecks	Strategy	Immediate actions
Access to health facilities	Inequitable distribution of health facilities; some populations have to travel significant distance to reach health facilities; outreach services are erratic.	Address supply side barriers by optimizing the functionality of existing health facilities and strategically using outreach services to complement the services from fixed facilities.	• Map existing health providers – public, FBOs, private in each sub county and review against service delivery needs. • Rationalize and operationalize existing public health facilities up to tier 4. • Incrementally address key gaps in staffing, infrastructure and utilities (water, sanitation and electricity) in existing public facilities giving priority to BEmONC and CEmONC services. • Partner with/contract FBOs or private providers where such options are available. • Develop and implement micro-plans for delivering integrated outreach services/mobile clinics targeting hard to reach and underserved groups such as nomadic populations. • Offer transport vouchers to underserved populations/under used services. • Establish maternity waiting homes for hard to reach populations.
Demand for RMNCAH services	Sociocultural factors, inadequate knowledge about benefits and status of women in the	Strategic communication with key stakeholders and demand side financing	• Engage communities through religious and political leaders to address sociocultural barriers.

Health Service Delivery	Prioritized Bottlenecks	Strategy	Immediate actions
	household and community limits the demand.		• Promote generation of evidence on gender barriers and develop and evaluate innovations and strategies to address them. • Involve men to enhance use of services by women and children (see NCPD paper) • Define and operationalize the role of community workers in community engagement and social mobilization, including requirements for training • Offer incentives to CHWs/TBAs to accompany mothers to facilities. • Involve CSOs and CBOs to enhance community engagement and promote utilization of health services. • Implement sustained mass and social media campaign for behavior change using indigenous languages and interactive sessions. • Introduce demand side incentives such as conditional cash transfers/mama kits.
Integration of health services	Fragmented funding, planning and reporting on vertical programs creates inefficiencies. Missed opportunities to provide services across the continuum of RMNCAH care.	Leveraging of resources for HIV and RMNCAH services Integrated training models and unified data collecting tools Fast-track implementation of existing Health Services	• Integrate training modules and guidelines and unified data collecting tools to eliminate duplication and increase effectiveness and efficiency. • Fast track implementation of policies, strategies and update guidelines • Improve joint planning between programs • Improve donor coordination and coordination between vertical programs • Conduct regular resource and donor mapping to address coverage gaps and reduce fragmentation and duplication.

Health Service Delivery	Prioritized Bottlenecks	Strategy	Immediate actions
		integrated policies/programs	• Update standards for RMNCAH services for integrated service delivery at all levels of care.
Family Planning Services	Limited access to FP services especially LAPM and services for the youth due to supply side gaps.	Improve availability of FP services specifically targeting LAPM and youth.	• Address supply side barriers for LAPM including competency- based training of nurses, clinical officers and doctors in LAPM, FP counseling and follow-up. • Scale-up youth friendly health services[8] and use NGOs, CBOs and social media to more effectively reach youth • Involve a wide range of stakeholders such as private sector, school health, universities, uniformed forces to increase availability of FP services • Train pharmacy staff to provide FP methods (to check on legal requirements and refine accordingly) • Increase community-based distribution of FP commodities • Expand the OBA voucher program to include wider range of FP services focusing on underserved groups and youth
Maternal and new born health services	Poor access and underutilization of maternal and new born health services due to supply (health	Incrementally address the supply and demand side barriers with focus on BEmONC and CEmONC.	• Start competency-based training in midwifery for nurses and clinical officers. • Approve policies and protocols for control of neonatal infections such as use of chlorhexidine for cleaning umbilical cord.

[8] Youth friendly health services have four broad characteristics: (i) Providers are trained and supported to be non-judgmental and friendly to adolescent clients; (ii) Health facilities are welcoming and appealing; (iii) Communication and outreach activities inform young people about services and encourage them to make use of services; (iv) Community members are aware of the importance of providing health services to adolescents.

Health Service Delivery	Prioritized Bottlenecks	Strategy	Immediate actions
	provider skills, shortage of midwives, commodities equipment and critical infrastructure such as labor rooms and laboratories), and demand side (low value to maternal care, privacy, behavior of health staff and preference to TBAs) challenges, especially in rural and pastoralist communities. Operational challenges in effective implementation of enabling policies such as Free Maternity Care.	National and county governments to agree on roadmap for more effective implementation of Free Maternity Care including mechanisms for verification and quality assurance.	• Start competency-based training for nurses, midwives and clinical officers in newborn resuscitation and management of sick children • Mentor medical officers working in rural and pastoralist areas and providing CEmONC services through locum appointment of specialists coordinated by professional associations. • Address incrementally supply side barriers starting with level 3 facilities offering BEmONC such as refurbishment of delivery rooms, and supply of essential equipment such as neonatal ambu bags, suction machines, solar lights and creation of sick child nurseries in county referral hospitals • Support county governments in operationalization of facilities providing quality 24/7 BEmONC and newborn by offering performance linked grants. • Scale-up results based financing to improve quality and provider responsiveness to clients • Develop regional networking for blood banking and specialized laboratory services. • Promote private sector partnerships for improving access to referral care including ambulance services. • Accelerate and ensure quality implementation of free maternity care
Child health services	Poor access to health facilities and skilled health workers offering quality		• Scale-up community supported Integrated Management of Childhood Illnesses (cIMCI) such as pneumonia, malaria, and diarrhea.

Health Service Delivery	Prioritized Bottlenecks	Strategy	Immediate actions
	emergency services for sick children, including neonates. Preventive and promotive services such as immunization, deworming not getting due attention. Sustainable financing for vaccines and other commodities		• Start competency-based training and skills retention for nurses, midwives and clinical officers in the management of facility based IMCI. • Address incrementally supply side barriers such as creation of newborn neonate's nurseries in Level 4 hospitals, including an enabling environment for providing kangaroo mother care. • Include emergency care of newborn and sick children under OBA/Free Maternity care package. • Shift responsibility for procurement and supply of vaccines and cold chain equipment to the national level and ensure that a dedicated budget line is provided.
Adolescent health services	Adolescent Sexual and Reproductive Health remains a low priority and existing legal frameworks not effectively implemented to address harmful cultural practices and child marriage. Poorly coordinated multisectoral response that ensures	Attention to engage and address needs of adolescents both within and outside schools	• Support county governments in effective implementation of Children's Act and Sexual Offences Act involving local leaders, CBOs or NGOs. • Provide Comprehensive Sexual Education and support Ministry of Education in revising the school curriculum to allow comprehensive and age-appropriate sexual and reproductive health education • Promote multi-sector collaboration between Ministries of Health and Education and Department of Youth Affairs under the Ministry of Devolution and county governments to: (a) introduce innovative approaches such as cash (conditional or

Health Service Delivery	Prioritized Bottlenecks	Strategy	Immediate actions
	meaningful involvement of the youth.		unconditional) transfers to retain girls in the schools and for avoiding risky sexual behaviors; and (b) implement return-to-school policy for girls who had teenage pregnancy • Build up adolescent responsive health services (make space available, opening hours, staff who can address adolescents, client flow, quality of services) • Establish a return to school program which will: ○ Address stigma ○ Address parents ○ Address socioeconomic aspects of the adolescents who are not accepted by their families.
Nutrition promotion	Continued high levels of stunting among children due to sub optimal nutrition for pregnant women and poor early childhood feeding practices. Low coverage for micro-nutrients and knowledge gaps among community level workers.	Complementing targeted health sector nutrition interventions with wider cross sector approaches to improve household food security, enhanced access to safe water and sanitation, and use of locally available nutritious foods.	• Develop sustained behavior change communication for breast feeding promotion followed by appropriate and timely complementary feeding • Reduce missed opportunities to deliver micronutrients (iron and folic acid, vitamin A, multiple micronutrients and Zinc) for pregnant women and children by promoting integrated delivery at facility and community levels. • Involve community health workers and ECD teachers in the promotion of hand washing, delivery of micronutrients and supplementary nutrition programs. • Continue school deworming program for children (2-5 years) with 2 doses each year.

Health Service Delivery	Prioritized Bottlenecks	Strategy	Immediate actions
			• Pilot cross-sector community driven approaches to improve household food security and dietary diversity
Reproductive health services and gender-based violence	Lack of diagnostic services and low coverage for treatment. Health workers lack appropriate skills and policy guidelines are not readily available. Poor community awareness of reproductive tract infections and low demand for survival services due to social and cultural barriers		• Promote abandonment of Female Genital Mutilation through multisectoral collaboration and community engagement, as well as provision of appropriate services to women with existing FGM. • Include cervical and breast cancer screening and handling gender-based violence in the pre and in service training of nurses, midwives clinical officers, and doctors. • Establish regional diagnostic and treatment centers for reproductive cancers. • Scale-up GBV services and promote multisectoral collaboration including access to legal services and sensitization of judiciary. • Raise awareness about RH and gender-based violence using multiple channels of communication including peer to peer learning, community FM radio and TV.

Table A8: Health System Prioritized Bottlenecks, Strategies, Activities and Longer Term Solutions

Health System	Prioritized Bottlenecks	Strategy	Immediate actions	Long term solutions
Governance and leadership	Disjointed efforts, poor coordination and lack of synergies among different actors, both state and non-state as well as development partners. This includes public sector, private sector, FBOs and development partner supported NGO initiatives. Implementation remains a challenge. Weak management, supervision and quality assurance in health facilities. Challenges of integrity and risks of corruption.	Enhance coordination among key RMNCAH stakeholders at national and county levels Build county and national capacity to implement evidence-based policy making Enhance transparency, citizen's participation and social accountability	• Map key partners (private, FBOs and donors) supporting RMNCAH by key inputs and geographic areas of activities. • Reactivate Health Sector Coordination Committee and Steering Group • Create Integrated RMNCAH technical working group; and • Hold quarterly meetings of ICC on commodity security • Ensure that all new policies have well written operational manuals, protocols and reporting requirements. • Entrust MOH and county health teams with jointly reviewing RMNCAH score cards during the annual health congress.	• Enhance partner coordination at the county level • Formalize donor coordination either through updated Code of Conduct or International Health Partnership compact • Institutionalize a process of consultation between the department of Policy Planning and Health Financing, MOH, with the technical working groups, county health teams and researchers from KEMRI once every 2 years to receive feedback on new evidence and implementation experiences of key

Health System	Prioritized Bottlenecks	Strategy	Immediate actions	Long term solutions
			• Update standards for RMNCAH services for integrated service delivery at all levels of care. • Develop quality improvement tools and check-lists to make supportive supervision action oriented and minimum quality mandatory for Results Based Financing and NHIF reimbursements. • Continue ongoing collaborations to build county capacity for planning and implementation through Kenya School of Government and other institutions. • Strengthen competencies of leaders and managers in Advocacy, Partnership building and Resource mobilization. • Provide mentorship support to county and	RMNCAH policies to make required changes. • Develop systems for continuous quality improvement and independent health facility accreditation. • Institutionalize the use of social accountability and client feedback mechanisms such as citizen's report cards, community score cards or client satisfaction surveys.

Health System	Prioritized Bottlenecks	Strategy	Immediate actions	Long term solutions
			sub county health teams to support facility centered continues quality improvement. • Ensure that all health facilities to disclose information (names of key technical staff posted to the facility, budgets and availability of tracer commodities) • Ensure that all health facilities to have elected facility management committees in place as per the norms established. • Establish a national complaints registry under MOH for the health sector and monitor the responsiveness.	

Health System	Prioritized Bottlenecks	Strategy	Immediate actions	Long term solutions
Health Financing	Inadequate financing for RMNCAH and impact of devolution on overall health financing. Too much focus on inputs and weak linkage of health financing to quality of services and performance.	Develop and implement a health financing strategy that transforms the health sector by reducing inequities while promoting enhanced sustainable domestic financing and harmonized donor support for achieving UHC	• Develop a well informed and inclusive health financing strategy for Kenya through a consultative process. • Link donor financing to increase in domestic financing for RMNCAH both at national and county levels. • Link new financing to results and institutionalize performance granting framework. • Scale-up both supply (RBF) and demand side (vouchers, conditional cash transfers) innovations relevant for the Kenyan context.	• Enhance sustainable domestic financing for RMNCAH both at national and county levels.

Health System	Prioritized Bottlenecks	Strategy	Immediate actions	Long term solutions
Health workforce	Weak health workforce planning and policy implementation. Poor distribution of staff, particularly in hardship and hard to reach areas Inadequate technical skills and competency Poor attitude towards clients.	Develop and implement Health Workforce strategies relevant for the devolved context to improve availability of competent and motivated providers especially at hardship and hard to reach areas.	• Review existing salaries and allowances for health personnel working in hardship and hard to reach areas and propose increases that are attractive to staff and sustainable. • Scale-up performance based financing and locum work opportunities to retain and motivate the staff • Reduce and reallocate staff based on service delivery needs (workload, norms etc.) • Implement task shifting by using services of community health workers, nurses, clinical officers and general duty medical officers with higher aptitude to perform more advanced clinical tasks with adequate training and mentorship.	• Institutionalize mechanisms for promoting continuum of care and provider competency especially in newborn and adolescent care

Health System	Prioritized Bottlenecks	Strategy	Immediate actions	Long term solutions
			• Provide scholarships for qualified individuals from hardship areas and offer career incentives/bonding for working in such areas. • Effective use of available tools for Continuous Quality Improvement at facility level to improve client responsiveness.	
Medical Products and technology	Budget shortfalls for essential medical products and technologies for RMNCAH Systems for demand forecasting, procurement, distribution and use of health commodities is inadequate resulting in stock-outs.	Ensure adequate domestic financing is made available to ensure sustained supply of RMNCAH products and technologies and build on ongoing reforms in procurement and supply chain management.	• Ensure that MOH and county governments to agree on key health products and technologies (vaccines, contraceptives, TB, Malaria and HIV supplies, cold chain equipment etc.,) to be procured at the national level benefitting from economies of scale and quality assurance systems, and allocate required budgets. • Build on KEMSA reforms to streamline procurement of medical	• Introduce tax exemptions for essential life-saving medicines and medical technologies for women and children. • Promote local industry growth through incentives and enhanced market access through harmonized medicine registration in the EAC

Health System	Prioritized Bottlenecks	Strategy	Immediate actions	Long term solutions
			products and technologies with a clear role of counties in KEMSA governance structure. • Establish national framework contracts for RMNCAH essential equipment to ensure economies of scale and quality. • Implement computerized Integrated Logistics Management System and use m-health initiatives to improve forecasting. • Offer in-service training for facility level staff in inventory management and rational use. • Pilot inventory control managed by private vendor (controlled push) for emergency drugs	

Health System	Prioritized Bottlenecks	Strategy	Immediate actions	Long term solutions
Health Information and CRVS	Inadequate and incomplete data to inform planning, managing and monitoring coverage and the quality of RMNCAH services. Poorly functioning civil registration and low quality of vital statistics Poor deployment of the IT system from national level to the sub-County level (scale-up from 107 to 285)	Improved timeliness, completeness and coverage of administrative data complemented by independent verification and targeted attention to improve civil registration and vital statistics	• Improve quality of HMIS through RBF verification mechanisms and use disaggregated data (e.g. by gender, equity) for course correction on a quarterly basis. Institutionalize maternal death surveillance system • Introduce rapid annual household and facility surveys using mobile technology • Expand access to computerized vital registration services from 107 to 285 • Introduce innovations to improve birth registration in counties with low coverage (incentives to community level staff) • Add ICD 10 abridged module for registration of causes of death to DHIS II. • Train health staff in use of abridged ICD 10 module. • MCH strategy • Mobile teams	• Link birth registration to integrated national ID

Health System	Prioritized Bottlenecks	Strategy	Immediate actions	Long term solutions
			• Integration with DHIS	

ANNEX 5. STRATEGIC ISSUES, OBJECTIVES AND STRATEGIES FOR CRVS

Table A9. Strategies, objectives and strategies for CRVS

Strategic issue	Strategic objective	Strategies
1. Low registration coverage for births and deaths	1. To raise the registration of births and deaths to 100 percent by 2017.	• Strengthen and roll out the Maternal and Child Health (MCH) strategy and increase the use of immunization clinics. • Investigate barriers to civil registration. • Establish and strengthen the M&E system. • Harmonize the legal frameworks. • Provide for registration of home births and deaths in Nairobi. • Promote registration through mobile outreach. • Benchmark best practices in civil registration.
2. Low-quality vital statistics	2. To improve the quality of birth and death registration data.	• Build the capacity of registration agents to capture all prescribed data in birth and death registers. • Institute mechanisms to review data quality at various levels. • Build the capacity to certify and code the cause of death. • Improve the reporting of causes of death that occur in the community. • Realign recording and reporting tools with international standards. • Explore modalities for regular mortality surveillance.
	3. To strengthen submission mechanisms for vital registration records.	• Scale-up registration services in all sub-counties. • Enhance the capacity of civil registrars to monitor data collection and submission. • Institutionalize M&E activities at the county and sub county levels.
4. Low demand and utilization of vital statistics	4. To build capacity in data processing, analysis, and	• Promote stakeholder participation in the sharing and use of vital statistics. • Create producer-user demand for vital statistics.

	utilization of vital statistics.	• Strengthen capacity in data analysis, verification, validation, and harmonization of vital statistics. • Support research and documentation of vital statistics activities. • Support development and implementation of an advocacy and communication strategy.
5. Provision for late registration of births and deaths	5. To ensure complete registration of all people by 2017.	• Conduct sensitization campaigns and create awareness of the re-registration exercise. • Put the re-registration exercise into operation.
6. Inefficiency in service delivery	6. To improve service delivery.	• Digitize manual records and automate processes. • Enhance institutional and human resources capacity. • Strengthen the performance management system. • Implement the service delivery charter.
7. Weak stakeholder participation	7. To increase the level of stakeholder engagement in civil registration.	• Encourage networking with partnerships and stakeholders. • Engage with county governments.

What is Required to Actualize CRVS

CRVS contributes to public administration, governance and a well-functioning health system. It provides individuals with legal identity and civil status and generates a source of registered vital events. Reliable information on births and deaths will enable measurement of progress, population estimates necessary for effective policy making and national planning. Despite past efforts to improve CRVS in Kenya, the coverage rates realized have remained low. Additional investments are required to implement the Civil Registration Strategic Plan 2013-2017, in the hope of achieving the vision and mission of being the reliable source of vital statistics and ensure the timely production of quality maternal and infant mortality data, necessary for health planning.

Key issues and challenges

(i) Low registration coverage for births and deaths attributed to various factors:
- Low public awareness
- Cultural and religious beliefs
- Low commitment of registration agents
- Inadequate monitoring of registration agents
- Low budgetary allocation
- Coverage difficulties caused by poor terrains and vast sub-locations

- Low registration in nomadic areas among people with no fixed domicile and in slum areas
- Inadequate and incomplete decentralization of registration services
- Inadequate registration materials
- Low demand for civil registration products
- Non enforcement of the law on registration
- Existence of late registration

(ii) Inefficiency in service delivery. The manual processes are inefficient, and staff adherence to the Service Charter is lax. As a result, there is low achievement of performance targets and work plan milestones.

(iii) Nonexistence of service delivery points in some administrative units. Services are currently available in only 107 out of 285total sub counties. Long distances are covered by customers and registration agents to the current service points.

(iv) Delay in generation and submission of vital statistics.

(v) Low demand and utilization of vital statistics. Clear mechanisms are missing on how the KDHSKDHS should analyze and disseminate vital statistics data. Staff members lack capacity in data processing and analysis.

Table A10: Proposed activities for investment in CRVS to improve maternal and child vital statistics

No	STRATEGY	ACTIVITY	INDICATORS	RESULTS
1	Strengthen and roll-out MCH strategy in the remaining sub-counties	Hold orientation and sensitization trainings on the MCH strategy	-Number of MCH staff trained on birth registration - Number of births registered	MCH strategy adopted and operationalized
2	Strengthen the M&E system	Train Registrars on M&E	-Proportion of staff trained on M&E	A functional M&E system in operation
		Conduct regular monitoring visits to registration agents	-Proportion of Registrars conducting quarterly monitoring missions	M&E activities institutionalized and operationalized at county and sub-county level
		Enhance capacity of Civil Registrars in data collection and submission	-Proportion of Registrars collecting data	
3	Build capacity of registration agents to capture all prescribed	Build the capacity to certify and code cause of death	-Proportion of counties with capacity to certify and code cause of death	Improved capacity of staff in certifying and

	data in the death registers			coding cause of death
		Pilot Verbal Autopsy at national level	-Verbal Autopsy piloted	Reporting of cause of death occurring within the community improved
4.	Scale-up registration services in all sub-counties	Open registries in 178 sub-counties	-Number of functional sub-county registries in operation	Scaled-up, expanded registration service points
		Equip 178 sub county registration offices	-Number of sub county registries equipped	
		Provide appropriate means of transport for the Sub county Registrar	-Number of operational motorbikes for sub county officers	Logistic mechanisms in place for Registrars to monitor, collect & submit data
		Provide appropriate means of transport for hard to reach areas	-Number of operational vehicles for county officers	
5.	Support the mop-up registration exercise	Undertake electronic and print media campaigns	-Proportion of counties undertaking electronic & print media campaigns	Sensitization campaigns on the re-registration exercise carried out
		Print and distribute IEC materials	-Number of fliers and banners printed and distributed	
		Hold sub-county sensitization workshops	-Number of sensitization workshops held	
6.	Strengthen engagements at the county/sub county	Hold quarterly meetings with county/sub county partners	-Number of meetings held	Partnerships and networking forums established and operationalized

CRVS Medium Term Results

1) Increase birth registration coverage from 62.9 percent in 2014, to 68 percent in 2015, to 75 percent in 2016, to 80 percent in 2017, to 85 percent in 2018, to 90 percent in 2019, and achieve 100 percent in 2020.

ANNEX 6. RESULTS FRAMEWORK AND MONITORING

Table A10. Results Framework

	Indicator	2015 Baseline	Target 2020	GOK target 2030	Means of verification	Data Source
REDUCED MORTALITY ANND MORBIDITY OF WOMEN, CHILDREN AND ADOLESCENTS						
1	Total Fertility Rate	3.9	3.3	***	Periodic surveys	KDHS
2	Teenage Birth Rate	18	11	***	Surveys and vital statistics	KDHS and PMA2020
3	Maternal Mortality Ratio	362	297	113	Surveys	Kenya Demographic Health Survey (KDHS)
4	Neonatal mortality rate	22	17.9	13	Surveys and service statistics	KDHS, DHIS2
5	Infant mortality rate	39	32.8	20	Surveys and service statistics	KDHS, DHIS2
6	Under-five Mortality Rate	52	42.1	24	Surveys and service statistics	KDHS, DHIS2
7	Stunting Prevalence	26	19.3	16	Surveys	KDHS
8	Underweight	11	3.5	4	Surveys	KDHS
9	Female genital mutilation for 15-19 years	11	8.1	***	Surveys, County program reports	KDHS
10	Gender based violence among women	5	3	***	Surveys	KDHS
IMPROVED EQUITABLE COVERAGE AND UTILIZATION OF RMNCAH SERVICES						
11	Currently married women using modern contraceptive method (mCPR)	53	72		Surveys and service statistics	KDHS, DHIS2 and Census
12	Currently married women using any contraceptive method (CPR)	58	73.1		Surveys and service statistics	KDHS, DHIS2 and Census
13	Women aged 15 – 49 who had at least 4 prenatal visits attended by trained health personnel	58	69.1		Surveys and service statistics	KDHS, DHIS2 and Census
14	Deliveries by skilled provider	62	87.4		Surveys and service statistics	KDHS, DHIS2 and Census
15	Postnatal care in first two days after birth	53	61.9		Surveys and service statistics	KDHS, DHIS2 and Census
16	Infants under 6 months on exclusive breastfeeding	61	79.3		Surveys and service statistics	KDHS, DHIS2, and Census

17	Children receiving all basic vaccinations by 12 months of age (BCG, measles and three doses each of DPT-HepB, polio (excluding polio vaccine given at birth)	71.3	76.0		Surveys and service statistics	KDHS, DHIS2, and Census
18	Children under5 treated for diarrhoea	58	68.7		Surveys and service statistics	KDHS, DHIS2, and Census
IMPROVED INTERGRATED SERVICES AND DELIVERY						
19	Women tested during ANC for HIV who received results and post-test counselling	69.4*	75		Surveys and service statistics	KDHS, DHIS2, and Kenya AIDS indicator survey
20	Pregnant women age 15-49 who received intermittent preventive treatment (IPT) - National	30	34. 5		Surveys	KDHS
21	Pregnant women aged 15 - 49who slept under a factory treated net that does not require any further treatment LLIN	49.6	62.1		Surveys	KDHS
22	Children under age 1 who slept under a factory treated net that does not require any further treatment LLINs	53	58.7		Surveys	KDHS
IMPROVING CRVS						
23	Increase Birth coverage registration	68	94.3		Service statistics	CRVS reports
24	Increase Death registration	46	52.9		Service statistics	CRVS reports
IMPROVING HEALTH SYSTEMS						
25	Percentage of facilities that have lifesaving commodities observed in stock and valid	51**	58.7		Surveys	SARAM
26	Number of facilities with completeness/timeliness of HMIS data	77*	88.6		Surveys	DHIS2
IMPROVED SOCIAL AND OTHER DETERMINANTS/MULTISECTORAL INPUTS						
27	Households using an improved sanitation facility which is not shared	23	25		Surveys and service statistics	KDHS
SCALED UP DOMESTIC AND EXTERNAL FINANCING						
28	Government spending of health as a percentage of total government spending	6.8%	11.0%	15.0%	Survey	National Health Accounts (NHA) and Kenya Household Health Expenditure and Utilization

GOK Government of Kenya, *Based on DHIS2 2014 data, **Kenya Service Availability and Readiness Assessment Mapping (SARAM) 2013 and ***Targets from Kenya Health Policy 2014-2030