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REPORT OF THE TRAINING NEEDS ASSESSMENT OF KENYA'S HEALTH WORKFORCE

MINISTRY OF HEALTH, AUGUST 2015

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REPORT OF THE TRAINING NEEDS ASSESSMENT OF KENYA'S HEALTH WORKFORCE, MOH 2015

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Acknowledgement

The training needs assessment (TNA) exercise was the result of a collaborative effort between the Ministry of Health - Human Resources Development Unit (HRD), County Departments of Health (CDoH) and key stakeholders in health workforce development that includes; the Transitional Authority (TA), the USAID funded FUNZOKenya project, JICA-supported *'Organisational Capacity Development for the Management of Devolved Health Systems'* Project, and DANIDA.

The Ministry of Health expresses its appreciation to the Technical Steering Committee that was appointed by Director of Medical Services (DMS) to plan and implement the TNA on behalf of the Ministry. More specifically the technical committee was tasked with the responsibility of developing the concept note and protocol, developing data collection tools and leading data collection, analysis, reporting and disseminating the findings of the TNA.

The Technical Steering committee was chaired by MOH-HRD and comprised of the following Partners and key stakeholders-Transition Authority; FUNZOKenya, JICA, DANIDA, DFID-Liverpool School of Tropical Medicine (LSTM) and Kenya Medical Training College (KMTC).

Special thanks go to the County Departments of Health for providing with data enumerators who collected data from their respective counties and to all respondents for their time to participate in the assessment. This ranged from county MOH-leadership to facility in-charges.

The Ministry of Health looks forward to more collaboration to rationalise health workforce as best demonstrated in this assessment exercise.

Thank you.

Mr. David Njoroge,

Director-Human Resources Management and Development (HRM/HRD)

Foreword

The Constitution of Kenya 2010 has mandated the Public Service Commission with the management and development of the human resources for effective service delivery. The training policy puts in place systems in which the human resource skills and competencies can be enhanced. It therefore becomes pertinent that funds on training are focused on priority areas to ensure that employees in the public service have the necessary competences and capabilities. Human resource development should meet the constitutional requirement of gender equity, fairness, consideration of people with disability and strengthen the research and development capabilities of the public sector institutions.

According to the delegated functions, the Ministry of Health (MoH) is mandated to develop capacity of National and County Health Workforce and to provide highly qualified health workers to spearhead the transformation of the country health status through service delivery. It is therefore expected to have well equipped workforce with relevant skills and competencies in order to embrace the anticipated change.

The Ministry is committed to universal health coverage for a healthy population by equipping the health workers with the requisite skills to address the health challenges. In the months of May and June 2015, the MoH embarked on a comprehensive training needs assessment exercise to establish the skills gap among the Health Specialists, Clinical and Management staff. The findings of this study have highlighted skills gaps that need to be bridged and a dire need for short term skills enhancement courses in clinical and management areas. This study provides the MoH and County Departments of Health (CDoH) with an opportunity to make evidence based decisions when addressing skills needs of its workforce in relation to the available resources while at the same time, ensuring prudent use.

Dr. Nicholas Muraguri
Principal Secretary, Ministry of Health

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Acronyms and Abbreviations

AIDS	Acquired Immuno Deficiency Syndrome
AMSTL	Active Management of Third Stage labour
ARV	Antiretroviral
BSN	Bachelor of Science in Nursing
CARPS	Capacity Assessment and Rationalisation of the Public Service
CD4	Cluster of Differentiation 4
CDH	County Director of Health
CDoH	County Departments of Health
CEC	County Executive Committee
CHMTs	County Health Management Teams
CHW	Community Health Worker
CPD	Continuous Professional Development
CSSD	Central Sterile Services Department
DANIDA	Danish International Development Agency
DHS QAR	Directorate of Health Standards and Quality Assurance and Regulation
DMS	Director Medical Services
DRH	Department of Reproductive Health
ENT	Ear, Norse and Throat
FBO	Faith-Based Organisation
Goe	Global Observatory for eHealth
GoK	Government of Kenya
Hb	Haemoglobin
HIS	Health Information System
HIV	Human Immuno-Deficiency Virus
HRD	Human Resource Development
HRH	Human Resource for Health
HRH-ICC	Human Resources for Health – Interagency Coordinating Committee
HRM	Human Resource Management
HSM	Health System Management
ICT	Information Communication Technology
ICTP	Integrated County Training Program
ICU	Intensive Care Unit
IT	Information Technology
IMAM	Integrated Management of Acute Malnutrition
IMCI	Integrated Management of Childhood Illness
JICA	Japan International Cooperation Agency
KEPH	Kenya Essential Package for Health
KHF	Kenya Healthcare Federation
KHSSP	Kenya Health Sector Strategic Plan
KMPDB	Kenya Medical Practitioners and Dentists Board
KNDI	Kenya Nutritionist and Dietician Institute
KRCHN	Kenya Registered Community Health Nurse

KSPA	Kenya Service Provision Assessment
L4	Level 4
L5	Level 5
LSTM	Liverpool School of Tropical Medicine
M&E	Monitoring and Evaluation
MoH	Ministry of Health
MTRH	Moi Teaching and Referral Hospital
NASCOP	Kenya National AIDS and STI Control Programme
NCK	Nursing Council of Kenya
NGO	Non Governmental Organization
NHRHD	National Human Resource for Health Development
NHSSP	National Health Sector Strategic Plan
OJT	On the Job Training
PMCT	Prevention of Mother to Child Transmission
PPP	Public Private Partnership
RH	Reproductive Health
SARAM	Service Availability and Readiness Assessment Mapping
SCHMTs	Sub-County Health Management Teams
SPSS	Statistical Package for the Social Sciences
TA	Transitional Authority
TB	Tuberculosis
TNA	Training Needs Assessment
TWG	Technical Working Group
USAID	United States Agency for International Development
USG	United States Government
VCT	Voluntary Counselling and Testing
WISN	Workload Indicator of Staffing Needs
WHO	World Health Organization

Operational Definitions

In Service Training – is a professional training or staff development activity, where professionals are trained and discuss work with others peer groups. It is a key component of continuing medical education for Physicians, Pharmacists, and other Medical Professionals. It can be a long- or short course.

A Specialist – is a Medical Practitioner who devotes attention to a particular disease or condition. A Specialist possesses basic training in health and additional specialisation in a given field in health.

County Health Management Team (CHMT) – are Technical Officers at the County Department of Health (CDoH) with expertise to guide, coordinate and implement health and social services in the county (County Government Act No. 17).

County Director of Health (CDH) – is the Technical Advisor on all matters relating to health and supervises all health services within the county (Kenya Health Bill 2014).

Healthcare provider – is an individual who provides preventive, curative, promotional or rehabilitative healthcare services to people. They are employed by the MoH or Private or Faith based organisations facilities.

Norms and Standards – these are the minimum guidelines and appropriate mix of healthcare workers required to serve at the different levels of the health service units at the community, primary care facilities and hospitals.

Kenya Essential Package for Health (KEPH) [1,2]- KEPH is the basic and expandable package of health that will guarantee cost effectiveness in the provision of priority healthcare interventions and services. It is expected this package will respond to the high disease burden in the country.

Post Basic Training – Entry level training required from an employee to join public service.

Post Graduate Training – This is an employee training beyond undergraduate training that includes Masters and Doctor of Philosophy (PhD) courses.

Medical Superintendent – is an Officer who plans, directs or coordinates medical and health related services in the hospital. They are charged with overall daily management and provision of healthcare.

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[1] Human resources for health norms and standards guidelines for the health sector (MOH, 2014)

[2] Human resources strategy 2014-2018

Executive Summary

Background

This report contains the results of an in-depth TNA conducted among Kenyan healthcare workers by the MoH. This follows a recommendation for trainings that addressed top national priorities from the 2012 needs assessment, before the devolved system of government was implemented. Additionally recommended was the consideration of regional uniqueness in addressing training needs to achieve universal health coverage in Kenya.

The justification for a TNA was also formulated as the fifth recommendation of the September 2014 Round Table Conference on Capacity Building by the MoH. This recommendation sought to identify the skill types of staff for efficient implementation of healthcare services through the Managed Equipment Services Project in 94 County Referral Hospitals. These services include: surgery, radiology, Central Sterile Services Department (CSSD), medical laboratory, ICU and renal dialysis etc. This paved way for the need for County specific TNA. The formulation of County Governments created the need for identification of required competencies to deliver management and service delivery functions by CDoH.

Against this background, the TNA was to: broadly identify the skills gaps in human resources for health including numbers of health worker available to deliver healthcare; identify in-service competencies for service providers to deliver KEPH; establish leadership and management competencies for health sector leaders to implement health in devolved units.

Objectives of the TNA

i. To identify skills gap in Health Specialist e, Clinical and Management staff at post-graduate and post-basic levels needed for effective service delivery at all levels of the health system and provide recommendations on skills gap.
ii. To find out in-service training needs and the number of healthcare workers that require training at the County level to effectively deliver KEPH.
iii. To establish the current and desired skills in leadership and management for CHMT and CDoH.
iv. To assess the extent to which female healthcare workers and those with disabilities have attended in-service trainings.
v. Assess capacity of CDH, CHMT and SCHMT in leadership and management for service delivery.

Methodology

The TNA was conducted under the leadership Director of Human Resources Development at the MoH in conjunction with a Steering Committee established and appointed by the Director of Medical Services (DMS).

The TNA collected primary data and desktop review was conducted for secondary data. Seven structured questionnaires were developed and self-administered to collect relevant information according to TNA objectives. These questionnaires targeted the following: CDH on a health systems management; CDH also completed CHMT questionnaire as the heads; CHMT/Training Committees; Regulatory Authorities; MoH Technical Departments and Medical Superintendents in Levels 4 and 5 County Referral Hospitals. The assessment excluded the National Referral Hospitals. The TNA was conducted in 46 of the 47 counties. One county delayed in sending data at the time of analysis, reporting and pre-dissemination of the assessment findings.

The draft TNA report was shared with the stakeholders in a meeting held on 19-20th November, 2015 in Nairobi, Kenya and feedback inputted in final report. The stakeholders comprised of MOH-HRD, MOH Technical Departments, Counties, Training Institutions and Development Partners.

Key findings of the assessment

The TNA findings are presented in three areas:

1. Gaps in areas of specialization at County level
2. Priority in-service training needs to effectively deliver KEPH
3. Priority training needs for CDoH in leadership, management and governance

1. Gaps in areas of specialization at county level

The TNA findings show that 22.7% (n=31,412) healthcare workers were employed in the Counties at the public health facilities and FBO/private-for-profit health facilities against the ideal number of 138,266 as per the Kenya human resources for health norms and standards guidelines for the health sector (MoH, 2014).

a. Medical Officer and Specialists

i. General Practitioners/Medical Officers (MOs)

The TNA findings show that 26.7% (n=1,719) General Practitioners/Medical Officers are employed by the Counties against the ideal number of 6,428 as per the Kenya human resources for health norms and standards guidelines for the health sector.

ii. **Anesthetists**

The TNA findings show that 18% (n= 106) Anaesthetists are employed by the Counties against the ideal number of 590 as per the Kenya human resources for health norms and standards guidelines for the health sector. Additionally, 20 Counties from the TNA have no Anaesthetists.

iii. **Surgeons**

The TNA findings show that 13% (n=200) Surgeons are employed by the Counties against the ideal number of 1,455 as per the Kenya human resources for health norms and standards guidelines for the health sector. Additionally, no Cardiologists are employed in the Counties. The Surgeons are employed by specialization as follows: 108 Obstetricians/Gynaecologists; 30 ENT Surgeons and 29 Orthopaedic Surgeons against the ideal number of 560, 285 and 285 respectively. There are no Surgeons in 10 Counties.

iv. **General Internists**

The TNA findings show that 287% (n=1,639) General Internists/Physicians are employed by the Counties against the ideal number of 570 as per the Kenya human resources for health norms and standards guidelines for the health sector.

v. **Specialists in Internal Medicine**

The TNA findings show that 3% (n=11) Internal Medicine Specialists are employed by the Counties against the ideal number of 375 as per the Kenya human resources for health norms and standards guidelines for the health sector. Many of the Internal Medicine Specialists employed are Neonatologists (5), Urologists (4) and Gastro-Enterologists (4).There is 1 Endocrinologist against the ideal number of 95 Endocrinologists as per the Kenya human resources for health norms and standards guidelines for the health sector. There is 1 Chest Specialist. There are no Oncologists and Nephrologists employed despite the Kenya human resources for health norms and standards guidelines for the health sector of 40 and 285 respectively.

vi. **Clinical Officer and Clinical Officer Specialists**

The TNA findings show that 13% (n=1,878) Clinical Officers and related Specialists are employed by the Counties against the ideal number of 14,270 as per the Kenya human resources for health norms and standards guidelines for the health sector. Additionally, 934 Clinical Officer Specialists are Bachelors degree holders, 227 Lung and Skin Clinical Officers and 215 Anaesthetics Clinical Officers against the ideal number of 4,585, 1,885 and 1,740 respectively.

vii. **Nurses and Nurse Specialists**

The TNA findings show that 16% (n=19,735) Nurses and related Specialists are employed by the Counties against the ideal number of 123,800 as per the Kenya

human resources for health norms and standards guidelines for the health sector. General Nurses employed as Kenya Registered Community Health Nurse (KRCHN), Kenya Enrolled Community Health Nurse (KECHN) and Bachelor of Science in Nursing (BSN) account for 68.4% (n=13,504) of the Nurses employed. Interestingly, there are enough BSN Nurses employed as per the Kenya human resources for health norms and standards guidelines for the health sector. The Nurse Specialist gap was highest among the following with current numbers show Forensic Nurses (1), Dental Nurses (13), Accident and Emergency Nurses (13), and Oncology Nurses (36) in the Counties. There is no Cardiology Nurse employed against the Kenya human resources for health norms and standards guidelines for the health sector of 20 Cardiology Nurses.

Perceptions on numbers of Healthcare workers needed for service delivery

The TNA established a double gap between numbers of healthcare workers perceived by County Directors of Health required for effective service delivery as 73,532 compared to 138,266 as per the Kenya human resources for health norms and standards guidelines for the health sector.

2. **The priority in-service training to deliver the KEPH**

The TNA findings reveal that healthcare workers need to be updated through in-service training to acquire specific competences to deliver the KEPH. These in-service trainings were picked as following in order of priority as elicited from respondents: emergency obstetric and neonatal care (15.1%); HIV testing and counseling (14%); ARV prophylaxis for children born to HIV-positive mothers (14.0%); management of abnormal pregnancies (12.3%); HIV testing and counselling using new algorithm (11%); Integrated Management of Childhood Illness (IMCI) (6.7%); health education on appropriate maternal, infant and young child feeding (6.1%); basic life support (5.8%); cervical cancer screening for all women of reproductive age (4.8%); facility disaster response planning (3.8%) and event based surveillance (3.7%). The TNA also established that 2012-2014, 1,840 healthcare workers were trained on key areas to deliver KEPH and an additional 8,199 healthcare workers require this training.

3. **Priority in service training needs in leadership, management and governance**

The TNA revealed priority in-service training in leadership and management for CDoH and CHMT members as the following: leadership and management (24%); senior management training on health (17%); supervisory skills management (8%); strategic planning leadership (7%); human resource management (7%); computer/ICT literacy (7%); financial management (7%); planning and budgeting (7%); and monitoring and evaluation (4%). Additionally, the CDoH were 50% satisfied with performance of the CHMTs and departments in intra-

departmental coordination and 43.6% satisfied with service delivery at hospital (levels 4-5) while health research satisfaction was 42.5%. Areas with lower satisfaction were: planning and budgeting; monitoring and evaluation (M&E); human resource development (HRD); and public private partnerships (PPPs).

4. **Equality of Access to in Service training**

   The TNA revealed that in-service training is accessible to females and disabled healthcare workers. Out of the 116 health workers with disabilities in the Counties, 89% (n=104) indicated to have attended in-service training.

Discussion

This TNA evaluated the numbers of the health workers required for effective service delivery. It evaluated the numbers currently employed in comparison to the numbers required as per the Kenya human resources for health norms and standards guidelines for the health sector.

The TNA analyzed the in-service training needs as per the KEPH package available at the different levels of health care. Additionally, the TNA established leadership, management and governance gaps in the management of devolved health systems in Kenya under the County Governments.

The TNA findings reflect gaps in numbers of healthcare workers and specialists. Kenya has 13 Doctors, Nurses and Midwives per 10,000 populations against [3]World Health Organization recommendation of 23 per 10,000 populations. Additionally, the Kenya human resources for health norms and standards guidelines for the health sector recommended minimum staffing levels for different health facilities. This TNA established that despite recommendations from the norms to have Specialists employed, there are Specialists not employed in the Counties e.g. Cardiologists.

The Kenya Health Sector Strategic and Investment Plan (KHSSP 2014-2018) has defined the KEPH and observes that investments in human resources for health and leadership as key to realizing this goal. In this regard, it is imperative to address the in-service priority areas to deliver KEPH and to build capacity of CHMT in leadership, management and governance as identified in the TNA report.

Additionally, the [4]health sector human resources strategy confirms that there are fewer numbers of General Practitioners, Clinical Officers and Nurses employed than the Kenya human resources

[3] WHO Global Atlas of the health workforce; http://www.who.int/hrh/fig_density.pdf?ua=1
[4] Health Sector, Human resources strategy 2014-2018(MOH,2014)

for health norms and standards guidelines for the health sector. The Third Global Forum on Human Resources for Health held in Recife, Brazil in 2013 resolved that: Investment in HRH remains low; fundamental discrepancies exist between health worker supply and demand; HRH planning is often weakened by uncoordinated interventions on single issues, focusing on an individual cadre or illness and not prevention; and the adoption and implementation of effective policies remains uneven (Resolution # 6, Recife Declaration on HRH, 2013). Investment in leadership, management, and governance practices across the human resources for health should bolster effective performance of the workforce and health system.

This calls for accelerated production of healthcare providers through trainings. The TNA identified further gaps in healthcare workers and specialists in terms of geographical location/county as established in a previous assessment.

Conclusions

This TNA established that the number of Healthcare workers in Kenya and Specialists is below the expected as per the Kenya human resources for health norms and standards guidelines for the health sector. This calls for accelerated efforts to match health service delivery with production, and deployment of qualified Healthcare workers. In-service trainings will be need-based to support newly formed County Governments in establishing robust health departments through capacity building in leadership and management.

Chapter 1

1.1 Background

The promulgation of the Constitution of Kenya on 27 August 2010 was a major milestone towards improving health standards. Chapter 6 of the constitution emphasises on the right to the highest attainable standard of health, as enshrined in the Bill of Rights in the Constitution. The Government of Kenya's (GOK) overall goal in health is to provide accessible, affordable and quality health care to all Kenyans. In order to achieve this target the MoH needs to have adequate well trained human resources to offer health services. The Kenya Health Sector Strategic and Investment Plan 2013-2017 is grounded in the principles of the 2010 constitution, specifically aiming to attain the right to health, and to decentralize health services management through a devolved system of Governance. The plan therefore emphasizes the importance of the provision of a well-managed, equitably distributed, and appropriately skilled health workforce. This has raised citizens' expectations on improved quality of health service delivery.

The need for this Training Needs Assessment was first muted as recommendation 5 of a Round Table Conference on Capacity Building held by the MoH, in September 2014: "*MOH/HRD to lead the process of conducting a Training Needs Assessment nation-wide and develop a training plan for implementation.*" This recommendation was the results of three major concerns:

- The immediate need for government through relevant line ministries to identify the type of staff required to ensure efficient implementation of the services provided through the Managed Equipment Services Project in 94 county referral hospitals, on the short, medium and long term. These services include: surgery, radiology, Central Sterile Services Department (CSSD), medical laboratory, Intensive Care Unit (ICU) and renal dialysis with major focus on cancer diagnosis and treatment.
- The requirement to harmonise the multiple in-service and short course training programmes undertaken by the MoH, county governments and development partners to ensure that such training programmes are needs-based.
- To identify the management challenges at the counties that require capacity building as a first step to implement the MOH/JICAs', *'Organisational Capacity Development for the Management of Devolved Health Systems in Kenya'*. This analysis incorporated an assessment of the skills and competencies as well as the gaps therein of the CHMT.

There has been a call by the MoH for the need to harmonise the implementation and monitoring of sector in service short Course training programmes, and also have a common strategy and roadmap to identify these programmes. This has been described in the *Concept Note on the Development, Implementation and Monitoring of an Integrated County Staff Training Programme*, the draft version of which was endorsed by the National Human Resources for

Health Development (NHRHD), Technical Working Group (TWG) on 28th January, 2015. The concept note outlines five major steps in the development of the integrated county staff training programme. These steps are: 1) Situational analysis; 2) Prioritization of issues for capacity building at national and county levels; 3) Integrated training programmes; 4) Coordination mechanism for implementation of training; 5) Monitoring and evaluation of training to ensure they lead to improved health service delivery. This TNA is therefore one of several activities that provide key information required for the successful implementation of steps 1, 2 and 3. A staffing norm has been defined for each level, to outline the minimum required health workers by cadre and staffing needed to assure provision of the KEPH. In the past, the health sector based staffing requirements on fixed patterns of staff for different levels of care. The previous norms and standards (2006) placed these requirements into one document, and also introduced population ratios for critical staff. These two approaches have been quite useful in assessing overall staffing requirements at the national or county levels, and have guided HRH investments and planning.

1.2 Purpose of the Training Needs Assessment

The purpose of the TNA was to identify the number of health workers and specialists in the counties compared to the recommended number in the norms and standards guidelines for the health sector in Kenya, establish required competences to deliver KEPH, establish priority areas for capacity building of CHMT on leadership, management and governance and finally, identify the functions CDoH in the management of devolved health systems in Kenya.

This report elaborates the rationale, objectives, institutional arrangements, general methodology and protocol used to conduct the TNA for the health workforce in 46 counties.

1.3 Objectives of the Assessment

1.3.1 General Objective

The objectives of this assessment was to identify gaps in the number of healthcare workers including the specialized areas in the counties, establish the in-service short course training needs for healthcare workers to deliver KEPH and provide recommendations for the training of CDoH staff, Sub-County Health Management Team (SCHMT) and county hospital clinical staff.

1.3.2 Specific Objectives

The specific objectives of this assessment were:

i. To identify the skills gap in specialist staff at post-graduate and post-basic levels needed for effective service delivery at all levels of the health system and provide recommendations on resolution of identified skills gap.

ii. To identify the in-service training needs and the number of health workers that need in-service training at the county level to deliver KEPH.

iii. To identify the current and desired skills in leadership and management for the CHMT and CDoH

iv. To assess the extent to which female healthcare workers and those with disabilities have attended in-service training.

v. To assess capacity of CDH, CHMT and SCHMT in leadership and management for service delivery.

1.4 Institutional framework

The MOH through the Director of Medical Services (DMS) constituted a TWG that comprised of the following stakeholders to steer the TNA processes: MOH-HRD as chair; support from The Directorate of Health Standards and Quality Assurance and Regulation (DHSQAR); USAID-FUNZOKenya Project; JICA-*'Organisational Capacity Development for the Management of Devolved Health Systems in Kenya'* Project; The Transitional Authority (TA); DANIDA; Liverpool School of Tropical Medicine (LSTM). The TWG was tasked with the responsibility of designing the TNA study, development of the protocol and study instruments, data collection and to provide guidance in data analysis, reporting and dissemination. The TWG through the MOH-HRD ensured County involvement through the Council of Governors and County Executive Committees (CECs) and involvement of the CDoH in data collection. The committee was mandated to co-opt members for specific assignments.

The Steering Committee was technically answerable to the NHHRHD TWG through its sub-committee in charge of the development of an Integrated County Staff Training Programme.

Chapter 2

2.1 Literature Review

Universal health coverage aims at ensuring that all people can access the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship (WHO, 2010)[5]. Three major goals of universal health coverage have been clearly outlined: (1) equity in access to health services – those who need the services should get them, not only those who can pay for them; (2) that the quality of health services are good enough to improve the health of those receiving services; (3) financial-risk protection – ensuring that the cost of using healthcare services does not put people at risk of financial hardship. An integral part of universal health coverage, however, remains the human resources for health (HRH) that deliver health care services, without whom its success cannot be guaranteed (Sousa et. al., 2013)[6]. HRH includes doctors, nurses, midwives, pharmacists and technicians among other personnel, as well as untrained and informal-sector health workers, such as practitioners of traditional medicine, community health workers, and volunteers (WHO, 2006)[7]. This report defines healthcare workers to be all people engaged in actions whose primary intent is to enhance health. WHO's definition of the health system comprises *activities whose primary goal is to improve health*.

In addressing the global concerns, Kenya has remained committed to making significant improvements in its human resources for health situation. However, the country will not achieve the health milestones, including achieving Kenya's vision 2030, without improving the quality, quantity and distribution of the health workforce. Several factors inhibit Kenya's ability to provide adequate health care for its citizens. The most important is underfunding of the health sector. Thus, health care services in Kenya partly depend on donors. In 2002, more than 16% of the total expenditure on health care originated from donors. This high dependence has caused the government to redefine a health insurance initiative included in the Vision 2030 to create and implement a mandatory national health insurance scheme as a means of funding curative services (Ministry of State for Planning, National Development and Vision 2030, 2007)[8]. Other factors also inhibit Kenya's ability to provide adequate health care for its citizens, including

[5] WHO (2010). The world health report 2010 – Health systems financing – path to universal coverage. Geneva: World Health Organization

[6] Sousa A, Scheffler RM, Nyoni J, Boerma TA (2013). A comprehensive health labour market framework for universal health coverage. Bulletin of the World Health Organization 91:892– 894. doi: http://dx.doi.org/10.2471/BLT.13.118927

[7] WHO (2006). The world health report 2006 – Working together for health. Geneva: World Health Organization

[8] Ministry of State for Planning, National Development and Vision 2030. (2008) First MediumTerm Plan 2008–2012, Kenya

inefficient utilization of resources, the increasing burden of diseases and rapid population growth.

The Kenya Vision 2030 goal for the health sector focuses on providing equitable and affordable quality health services to all Kenyans since good health and nutrition boosts the human capacity to be productive, thus enhancing economic growth and reducing poverty. Towards this goal, the Government's First Medium-Term Plan 2008–2012 aims at restructuring Kenya's health care delivery system to decentralizing health care funding and the responsibility for delivering health services to county and sub-county hospitals. Further, it recognizes that health care delivery and ultimately health outcomes are being hampered by the inadequate and inequitable distribution of human resources for health. The Second National Health Sector Strategic Plan (NHSSP II) (2005–2010, extended to 2012).

Overall human resources for health goal are to ensure optimal levels of human resources and the development of their capacity in accordance with the health needs of the population. These HRH interventions should be aligned with the KEPH priorities to improve the provision of high-quality health care services.

In 2006, the MoH and stakeholders developed HRH norms and standards guidelines[9] for health service delivery through a consultative process to provide a rational framework to guide investment in health sector (Ministry of Health, 2006)[10]. The guideline has been used by the health sector as an adaptation of the Workload Indicator of Staffing Needs (WISN) approach. The HRH norms and standards guideline refer to the minimum and appropriate mix of human resources and infrastructure required to serve population at different levels of the health service delivery system. The HRH norms and standards is a guide to the efficient, effective and sustainable delivery of the KEPH defined as the common service delivery package under NHSSP II.

The Constitution of Kenya 2010 and the Kenya health policy 2011–2030 shift the focus to address the following:

- Improving the production of health workers (numbers and quality) by aligning curricula and training with needs and competencies, promoting multi-skilling and multitasking and enhancing the skills, knowledge and attitudes of the health workforce required to deliver health goals;
- Reviewing and applying evidence-informed health workforce norms and standards for the different tiers of services;
- Ensuring the appropriate and equitable distribution of health workers in facilities;

[9] Ministry of Health. (2005) Second National Health Sector Strategic Plan (NHSSP II) (2005– 2010, extended to 2012), Kenya

[10] Ministry of Health. (2006) Norms and Standards for Health Service Delivery, Kenya

- Improving attraction and retention packages and incentives for health workers;
- Strengthening human resources development and systems and practices; and
- Improving institutional and health worker productivity and performance.

2.2 Healthcare System

Human resources in the health sector represent both strategic capital and a critical resource for the performance of the health system. The country has made significant progress, including scaling up the recruitment of additional health workers, reviewing health worker salaries, benefits, strengthening human resource policies and practices. Despite the progress, there are still several health workforce challenges such as: inadequate and inequitable distribution of health workers; high staff turnover; weak development, planning and management of the health workforce; deficient information systems; high migration; and an inadequate performance management framework at all levels. Chen et al (2004) identified challenges to building an effective health workforce, such as low absolute numbers of trained workforce, difficulties in recruiting and managing health workers, impact of HIV on the health workforce, and poor performance. According to WHO (2006)[3] and WHO Global Atlas of the health Workforce, Kenya is one of the 49 countries in the world with acute manpower shortages in the health sector WHO recommends minimum threshold of 23 doctors, nurses and midwives per 10 000 population as necessary to deliver essential maternal and child health services, and Kenya has 13 which is lower than expected[11] .

A comprehensive approach, supported by strong national and local leadership, governance and information systems, is needed to ensure skilled, motivated and supported health workers in the right place at the right time. For example, national and county authorities may focus on rapidly increasing the outputs of education and training programmes, along with measures to improve recruitment, performance and retention of workers - especially in rural and underserved areas - and actions to address imbalances in the mix and use of skills within a primary health care framework.

According to the County Government Act No. 17, the healthcare is organised in a four-tiered system:

- Community health services: This level is comprised of all community-based demand creation activities, that is, the identification of cases that need to be managed at higher levels of care, as defined by the health sector.
- Primary care services: This level is comprised of all dispensaries, health centres and maternity homes for both public and private providers.

[11] WHO Global Atlas of the health workforce; http://www.who.int/hrh/fig_density.pdf?ua=1

- County referral services: These are hospitals operating in, and managed by a county and are comprised of the former level four and district hospitals in the county and include public and private facilities.
- National referral services: This level is comprised of facilities that provide highly specialised services and includes all tertiary referral facilities.

The health sector therefore comprises of several major players including the MOH, parastatals and the private sector. The health sector is labour-intensive and dependent on its workforce for application of knowledge and technical skills in the provision of health care services. Health services are provided through a network of over 4,700 health facilities countrywide, with the public sector system accounting for about 51 percent of these facilities. The government health service is supplemented by privately owned hospitals and clinics as well as FBO hospitals and clinics, which together provide between 30 and 40 percent of the hospital beds in Kenya.

The County Government Act No. 17 states that the counties are responsible for three levels of care: community health services, primary care services and county referral services while the national government is responsibility for national referral services. The Act spells the duties of the CDoH as being responsible for:

- County health facilities and pharmacies
- Ambulance services
- Promotion of primary health care
- Licensing and control of agencies that sell food to the public
- Disease surveillance and response
- Veterinary services (excluding regulation of veterinary professionals)
- Cemeteries, funeral homes, crematoria, refuse dumps, solid waste disposal
- Control of drugs of abuse and pornography
- Disaster management
- Public health and sanitation

The Act also states the functions of CHMT as being responsible for:

- Provision of expertise in health and social welfare to the County Government Institutions
- Coordination and management of the implementation of health and social welfare services in the county
- Ensuring that there is regular monitoring and evaluation of the county health and social welfare services
- Ensure the adequacy of resources (whether material, human or financial) for the provision of health and social welfare services in the county
- Coordinate and lead the county response to disease outbreaks

2.3 Skills gaps in health workforce

Many workforce policy papers that address the problem of skills gap can be separated into two categories: (1) those that utilize employer surveys to collect data about employer perceptions of skills gaps and (2) those that compute skills gaps from aggregate labour supply and demand data using level of education as a proxy for skill level. A few workforce research papers have attempted to quantify skills gaps by comparing benchmarked skill sets identified as in-demand by employers and comparing them with labour force skill assessment databases.

A gradual consensus formed in the competency analysis research which defines the process of competency modelling. Competency modelling generally includes the steps of: (1) competency mapping, (2) competency gap analysis, (3) competency development, and (4) competency monitoring.[12] The second step which is the competency gap analysis defined as the gap between the competencies that employees possess in comparison to the competencies required by an organization. While there is a noted distinction between the concepts of "competencies" and "skills", most literature uses the terms "competency gap" and "skills gap" interchangeably in researching the process of competency modelling. This report will not enter into the fray of determining the appropriateness of investigating either competencies or skills, but rather will use the methodology used in conducting a gap analysis in the context of the health workforce. The approach used is a dichotomous grouping of "specialised" and "non-specialised" cadres with "specialised" defined as those who have completed their post-graduate trainings.

A commonly adopted approach to benchmarking HRH sufficiency is the workforce-to-population ratio method. A health worker-to-population ratio estimates the current workforce density or supply, for example physicians per 1000 population or health professionals per 1000 population. This ratio can then be compared against an identified threshold density that is assumed to correspond with a health system's ability to deliver essential health services. An advantage to using a workforce-to-population ratio method for HRH benchmarking is that the approach is quick and simple to apply, may be used for comparative analyses across countries and over time, and is easy to understand among a wide range of audiences including those who might not be familiar with more advanced statistical modelling techniques.

2.4 Training needs assessment

The supply of health workforce includes the number of qualified health workers willing to work at a given wage rate in the health care sector (physicians, nurses and other care providers). Thus, training is a key determinant of this part of the labour market. The number of trained health workers depends on that of training institutions, the number of years of training, the education

[12] Draganidis, F. & Mentzas, G. (2006). Competency based management: A review of systems and approaches. Information Management & Computer Security, 14(1), 51– 64

level, the cost of training, the individual interest in working in that field and the expected probability of getting a job after training among others. Training needs are linked to the market for training health workers. A training need exists when there is a gap between what is required of a person to perform competently and what he or she actual knows. Training need is a shortage of skills or abilities, which could be reduced or eliminated by means of training and development. Training needs analysis is a series of activities conducted to identify problems or other issues in the workplace, and to determine whether training is an appropriate response. It helps in determining the gap between the model situation and the actual situation and abridging the same.

Little efforts have been made to assess the training needs. However, there are studies conducted for training needs assessment such as those of Brems et al (2010)[13] and Isaac (2011)[14] conducted among healthcare providers. One can use different sources to determine training needs such as needs assessment questionnaire, needs analysis, employee interviews, employee opinion/climate surveys, exit interviews, employee grievances/complaints, customer returns/calls, employment/skills tests, focus groups, performance appraisal results, promotions & terminations and re-organization among others. This assessment used both primary and secondary sources of information.

A rapid training needs assessment of the health workforce in Kenya conducted by the MoH (2012)[15] in collaboration with FUNZOKenya Project identified the following as the priority training needs that should be addressed by the Ministries of Health to improve health service delivery; Cervical Cancer Screening training, HIV –PMCT, focused antenatal care, IMCI, new born care, active management of third stage of labour (AMTSL), commodity management and HIV paediatric care. Following this assessment, specific tailored made training intervention was

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[13] Brems C, Boschma-Wynn RV, Dewane SL, Edwards AE, Robinson RV. Training Needs of Healthcare Providers related to Centers for Disease Control and Prevention core competencies for Fetal Alcohol Spectrum Disorders. J Popul Ther Clin Pharmacol 2010;17: 405-17.

[14] Isaac R, Solak J, and Giardino AP. Health Care Providers' Training Needs Related to Human Trafficking: Maximizing the Opportunity to Effectively Screen and Intervene. Journal of Applied Research on Children: Informing Policy for Children at Risk 2011; 2:1-32.

[15] A rapid training needs assessment of the health workforce in Kenya, September 2012: http://www.slideshare.net/IsaacMuneneNtwigaMPH/kenya-health-workforce-training-needs-assessment-report A rapid training needs assessment of the health workforce in Kenya, September 2012: http://www.slideshare.net/IsaacMuneneNtwigaMPH/kenya-health-workforce-training-needs-assessment-reporthttp://www.slideshare.net/IsaacMuneneNtwigaMPH/kenya-health-workforce-training-needs-assessment-reporthttp://www.slideshare.net/IsaacMuneneNtwigaMPH/kenya-health-workforce-training-needs-assessment-report

delivered to the health workers to address this need. This training need was conducted during the provincial system of governance. With the setting in of the county governments in 2014, there was greater need to have county based training needs that will identify gaps for training to address the devolved health function as stipulated in the Kenya constitution 2010. The quality of overall governance in a country–broadly defined as the set of rules and institutions by which authority is exercised–directly affects the environment in which the health system operates, as well as the ability of health officials to exercise their responsibilities and health providers to deliver quality services. This definition encompasses (1) the process by which governments are selected, monitored, and replaced; (2) the capacity of the government to effectively formulate and implement sound policies; and (3) the linkages, formal and informal, among citizens, private organizations, and the state that influence the interactions among them and the outcomes of those interactions.

Some of the documented leadership, management and governance gaps at the MoH are: management of the smooth transition process; professionalising health systems leadership and management; harmonisation of leadership and management development opportunities; promotion of networking and peer exchange.

Chapter 3

3.1 Methodology

This training needs assessment focused specifically on skill gaps and subsequent training needs and did not undertake a comprehensive personnel census. This study covered all specialist staff at post-basic and post-graduate level currently posted in county (Government of Kenya, FBO and private-for-profit) hospitals, the numbers required for effective service delivery, and the gaps (by facility, facility levels L4 and -L5 and county). This TNA considered functions and job responsibilities, rather than occupations, as the basis for determining required competences and training needs. KEPH states, for each intervention, the 'lowest cadre' expected to carry out the intervention and the lowest facility level. It is silent as to which other professional categories should provide them. For the purpose of this TNA, respondents included staff from relevant departments at the MoH, regulatory bodies, CDoH staff, county training committees or CHMT (in cases where the training committee were absent) and medical superintendents. The respondent in the county training committees, CHMT or SCHMT completed one questionnaire, which reflected the results of committee/CHMT/SCHMT discussions. This county based assessment excluded the national referral hospitals that include Kenyatta National Hospital (KNH) and Moi Teaching and Referral Hospital (MTRH).

In determining the capacity gaps, a distinction was made between three areas of competences: (i) specialist staff at post-basic and post-graduate level currently posted in county ((Government of Kenya (GoK)), FBO and private-for-profit) hospitals , the numbers required for effective service delivery, and the gaps (by facility, facility level -L4 and -L5 and county) (ii) all services and interventions provided in county hospitals that require in service training in decreasing order of priority, by subsector (GoK/FBO/private-for-profit), level of care (L4 and L5), profession, where applicable and county. (iii) number of health workers in the GoK, FBO and private-for profit subsectors who need Short Course training in the priority services and interventions identified under ii above (by service, intervention, level of care, subsector and county).

The first area of competences looked at the gaps in terms of list of all official post-basic and post-graduate specialties in Kenya, as defined by the Regulatory Authorities as well as specialist staff in different professional categories currently posted in GoK, FBO and private-for profit health facilities, by facility, subsector, level and county. The second category A list of the services and interventions expected to be provided at L4 and L5 hospitals, Number of certified in service long and short course training programmes covering the expected services and interventions, and provided in recent years by both national and sub-national levels as well as the number of participants to each of these programmes, by subsector (GoK, FBO and private-for-profit), level (L4 and L5) and county (Core Technical competence) predominantly has to do with specific

knowledge and skills. Lastly, the third area of assessment number of health workers currently serving in each subsector expected to provide these services and interventions as well as number of healthcare workers who already have the required competencies and/or have already benefited from certified in service long and short course training programmes covering the priority services and interventions.

A Steering Committee was established and appointed by the Director Medical Services (DMS), in order to develop the methodology, tools, protocols and budget and ensure logistics were in place for this exercise. The Steering Committee was chaired by the head of HRD, and further comprised of MoH staff, representatives of external actors and representatives of the Ministry of Devolution & Planning and the Transition Authority. This Steering Committee was technically answerable to the NHRHD TWG through its sub-committee in charge of the Development of an Integrated County Staff Training Programme.

Enumerators and supervisors were recruited and trained on data collection. The training included familiarization with the questionnaires and instructions on completion based on the protocol and the job description of the enumerators and supervisors. A pre-test of the questionnaire was conducted as part of the training. Based on the feedback from the pre-test, the questionnaires were finalized.

This assessment used both primary and secondary sources of information. Desk review was conducted by Steering Committee Members or co-opted members at national level. The assessment used structured questionnaires that were sent to respondents for familiarization followed by an interview by the Enumerators. Respondents included staff from relevant departments at the MoH, Regulatory Bodies, CDoH staff, County Training Committees or CHMT (in case the training committee is absent) and Medical Superintendents. When the respondent was the county training committee, CHMT or SCHMT, the Steering Committee was expected to complete one questionnaire, which would reflect the results of committee/CHMT/SCHMT. County-based enumerators and Steering Committee members (supervisors) supported completion and/or verification of data. Health systems management questionnaires were administered to CHMT to reflect their management needs, while County Directors of Health personally completed the Health systems management tool to identify their personal challenges and hence need for capacity building.

3.2 Assessment Tools

Questionnaires (Annex 5-7) were developed in order to provide relevant information concerning the assessment objectives and were sent to respondents by e-mail for completion. Seven tools were developed and targeted the following,; County Director of Health (focusing on health specialists in county), Country Director focusing on Health systems management,

CHMT/Training committee, Medical Superintendents in county referral hospital (Levels 4 and 5), Regulatory boards and council and MOH Technical department. The questionnaires were designed to assess the training needs of the different cadres and structured according to the following scheme:

- Section A – General Information aimed at describing the respondent's profile.
- Section B – Number of specialized health workers.
- Section C – Number of specialized health workers by cadre.
- Section D – KEPH interventions for which short course training was required.
- Section E – functions and capacity of management teams that required short course training
- Section F – Equality of short course training for staff with disability and female staff
- Section G – General comments or additional information

The typology of questions included open, open-ended, closed-ended and scaled response items rated according to 4 and 5-point scales, from 1= poor to 4= Excellent and from 1=not confident at all to 5=very confident. The following indicators were used to ascertain their usefulness, applicability, reliability and questionnaires subjected to pretest. At finalization: Time needed for completing the interview; Clarity of questions; Validity in terms of providing the information required by the survey; and Reliability in terms of providing consistent information.

Table 1: Summary of the respondents by type

Respondent Type	Sample Size	Comments	Respondents
MOH technical departments	8	e.g. NASCOP, DRH	4
Regulatory authorities	8	Medical Practitioners and Dentist Board, Clinical Officers Council, Nursing Council of Kenya, Pharmacy and Poisons Board, Medical Laboratory Technicians and Technologists Board Etc.	3 (Clinical Officers Council, Nursing Council of Kenya and Kenya Medical Practitioners and Dentist Board)
County Directors of Health	47	1 per county	46 except Baringo county
County Directors of Health (HSM)	47	1 per county	46 except Baringo county
County Training committees or County Health Management Teams (CHMTs)	47	1 per county; choice of training committee or CHMT team depends on the questions.	46
Sub-County Health Management Teams (SCHMTs)	Max: 188	Sample 1 SCHMT for any 3 teams in a county, i.e. 1 for counties with 1-3 SCHMTs, 2 for counties with 4-6 SCHMTs, 3 for counties with 7-9 and 4 for counties with 10 or more SCHMT.	150
Medical Superintendents of GoK hospitals	47X 2= 94	One L4 hospital and L5 hospital/hospital earmarked to become the county L5 hospital per county	43
Medical Superintendents of FBO and private hospitals	47	One FBO hospital (whatever denomination) per county, selected in consultation with the three FBO Secretariats, based on (1) their presence in a county and (2) the likelihood to provide similar specialised services as in the 94 GoK county hospitals. One private hospital per county.	3
	486		341

Of the estimated sample size of 486 respondents from the MoH, Regulatory Authorities, Medical Superintendents from GoK and from FBO and private hospitals, CDoH and the CHMT to be interviewed, a total of 341 respondents participated in the survey, representing a 70% response rate (Table 1).

3.3 TNA implementation process

The steps followed in carrying out this assessment were:

i. Consult existing studies on previous TNAs
ii. Draft TNA plan to carry out assessments of critical skill gaps
iii. Collaborate with MOH/HRD in the design and implementation of the assessment
iv. Design/develop questionnaires for key informant interviews
v. Data collection process at county level
vi. Consolidate findings from county institutions
vii. Prepare recommendations pertaining to all functions and cadres
viii. Prepare TNA report and present the findings Invite comments and prepare the final report

3.4 Role of all partners

The Ministry of Health with support of partners such the USAID funded FUNZOKenya, JICA-'Organisational Capacity Development for the Management of Devolved Health Systems' Project, DANIDA and LSTM led the process of the TNA activity. The partners provided technical and financial support to the training needs assessment exercise. More specifically, FUNZOKenya supported TNA activity in 16 counties and JICA supported 8 counties, with the Ministry of Health-HRD covering the remaining counties.

3.5 Data Management

The completed questionnaires were assigned individual identification numbers and have been archived at MOH-HRD for purposes of ulterior verification and filing. In compliance with GoK best practices on data management, all documents and materials (hard and electronic copies) that are essential for documentation and replication are kept in archives for at least five years at MOH-HRD. These documents and materials include:

- Originals of filled out questionnaires
- Screen formats (data entry program)
- Original and cleaned databases
- Code manual
- Data analysis programs
- Any other documents or materials that may be required for further understanding and replication of results.

3.5.1 Measures taken to ensure completeness and coherence of responses

The TNA Steering Committee provided guidance on the recruitment of enumerators by specifying qualifications and experience in job descriptions (JD) and coordinated with county teams for data collection and supervision. The actual selection of the enumerators was done by the HRD department in conjunction with CDoH following the JD developed. The data enumerators were trained on the TNA protocol and tools to ensure understanding of the activity.

All respondents were asked to complete the e-mail questionnaire independently or in a group as the case applied. Enumerators then checked all questionnaires for completeness and coherence. Supervisors then counter-checked those questionnaires already verified by the enumerators. If necessary, the supervisor discussed with the enumerator to amend, supplement and clarify the information on the questionnaires as per protocol. Finally, supervisors established a daily report on data collection progress (number and type of targets reached compared to the plan and type of questionnaires collected, major events, constraints).

3.5.2 Data Entry and Cleaning

Data entry clerk/statistician assistant were engaged to enter data. Data entry was done using SPSS for analysis. A statistician was engaged to create data entry screens, support data cleaning and analysis:

- Each questionnaire was adapted as screen format in Epi Info
- Programming was done using the CHECK function in order to improve consistency during handling
- Entry of all data, by questionnaire, was done by maintaining quality check criteria. Once the initial entry was completed, data was checked for quality by entering over again 5% of the same questionnaires data to check for errors.

3.5.3 Data Analysis

Data entry and analysis were done using SPSS statistical package and Microsoft Excel was used in order to produce the charts. As a first step, open questions had to be traduced into categorical variables. Some questions in section 2, aimed at evaluating the perception of the responsibilities and the extent of managerial knowledge possessed by health personnel, were analyzed by measuring the gap between the answers given and what was expected according to their job descriptions. The quality of answers was scored according to a 5-point scale ranging from “very good” to “very poor”. Following this procedure the open questions were treated as closed-end ones.

In order to examine the distribution of the full set of responses for each closed-ended question among the question's choices, frequency tables, and pie charts were then produced. In addition

cross tabulations allowed us to examine results for subset of respondents (county, job title, professional background, years of service etc.).

The data entry and analysis process was guided by established standards of monitoring and evaluation. Specifically USAID/FUNZOKenya and JICA provided technical leadership in data analysis and reporting. To enhance efficiency and achievement of the TNA objectives, a plan describing the process from data entry to data presentation was prepared to guide the process. It also served as a checklist to ensure delivery of a quality product

Descriptive analysis was used to compute frequencies, recoding of variables and running of cross tabulation. Frequency counts, percentages as well as qualitative analysis techniques were the main statistical tools employed in analysing the data generated through the questionnaires. A non-response to any item of the questionnaires was considered invalid and excluded from the analysis.

Frequencies and recoding of variables

Basic descriptive statistics on frequencies was computed to assess the quality of data and to assist with recoding of categorical variables or grouping variables. Frequencies helped in identifying missing cases and cases that were too few. After running frequencies and recoding, cross tabulation was carried out.

Cross Tabulation

Dummy tables were created before actual analysis. Dummy tables showed how information was analysed and presented for report writing. The dummy tables had columns with variables while the rows contained results by their percentages and total number of cases. Cross tabulation was used to compare variables/responses.

Bottleneck analysis

In order to further analyze the critical elements of the challenges in health system management at the county level, the respondents were questioned about bottlenecks of the current difficulties in management and causes of the bottlenecks as well as effects by the bottlenecks. Using the answers from the respondents, cause – bottleneck – effect (apparent challenge) relationship was identified as most common structures of the challenges in two different ways. The first way was that, a bottleneck which most number of counties answered was picked in the beginning. Then, a cause which most counties answered that it is the primal cause of the selected bottleneck was identified. The second way is that “Lack of skills/training” rose as a bottleneck or a cause was picked in the beginning. Then, the cause of “Lack of skills/training” or effects by “Lack of skills/training” that most number of counties answered was picked. Findings

from this analysis were to provide important information for discussion on priority focuses of training curricula.

Presentation of Analysis Outputs

Data outputs were organized by question and by the variables described in the expected outputs in section 5 (e.g. county, cadre, level of care, subsector). This facilitated the TNA Steering Committee to utilise the data for report writing. During the process of writing the report, further analysis was carried out as needed. Tables, graphs and pie charts were created using the analysis outputs. The graphs were used to illustrate frequencies and therefore occurrences of events or activities.

3.6 Dissemination

The draft TNA report was disseminated with the stakeholders in a meeting that was held on 19-20th November 2015 in Nairobi. The stakeholders in the meeting comprised of MOH-HRD, MOH technical departments, Counties, Training Institutions, Partners and their feedback used to improve the final report.

3.7 Study limitations

3.7.1 Reaching sample size

Data enumerators also faced some difficulties reaching the intended sample size of respondents. Data was collected for four weeks starting in mid-April 2015. The data collection team also encountered absentee respondents.

3.7.2 Logistical challenges

The data collection team was unable to collect data from Baringo County due to logistical challenges.

3.7.3 Reporting on perceptions

One of the limitations was that much of the data gathered was based on the perceptions of the respondents. For example, County Directors of Health were asked to provide the ideal number of staff required at the facilities considering the workload and functions of the staff and the number of staff who required in-service training.

Chapter 4

4.1 Findings

This chapter presents the findings of the training needs assessment. The findings are presented in four sections. Under the first section, the skills gap in health workforce at post-graduate and post-basic levels are illustrated. In the second section, in-service training priorities for healthcare workers are presented. The third section contains current and desired skills of CHMT/SCHMT for which in-service training is required, by all counties. This section also looks into the capacity of the CDoH/CHMT and SCHMT in terms of short courses attended. Lastly, section four illustrates how female healthcare workers and those with disabilities have benefited from the short course trainings.

4.2 General characteristics of the study

4.2.1 Source of information

A total of 341 respondents from 46 Counties participated in the TNA. These comprised of Medical Superintendents from the public health facilities (30%), Sub-County health management teams (28%), County Directors of Health (25%), County Health Management Teams (14%), Medical Superintendents from the FBO/private health facilities (2%) and the Regulatory bodies at the national level (1%) namely Kenya Clinical Officers Council, Kenya Nutritionist and Dietician Institute (KNDI), Nursing Council of Kenya (NCK) and Kenya Medical Practitioners and Dentist Board (KMPDB).

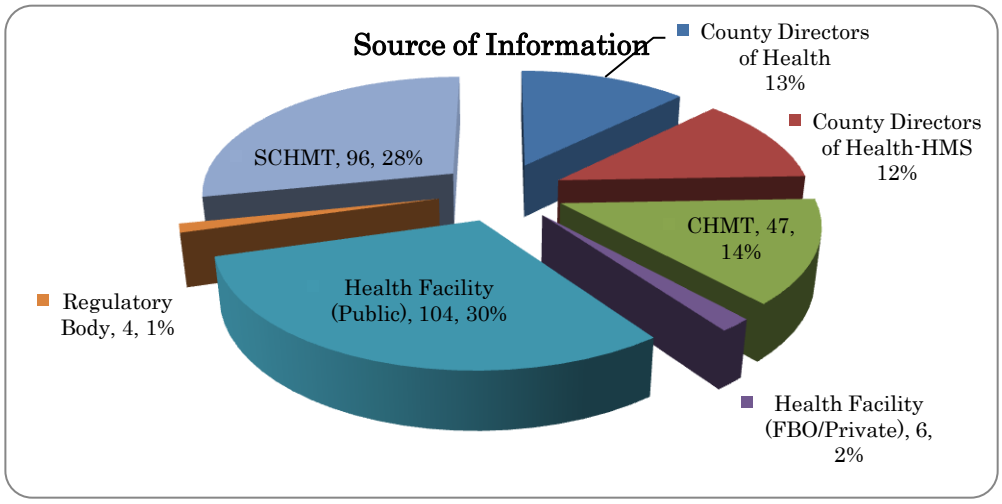

Figure 1: Sources of information during the TNA

4.2.2 Gender Characteristics

Figure 2 shows the distribution of the 341 respondents by gender. Majority of the respondents 72 (85%) were male, while 13 (15%) were female.

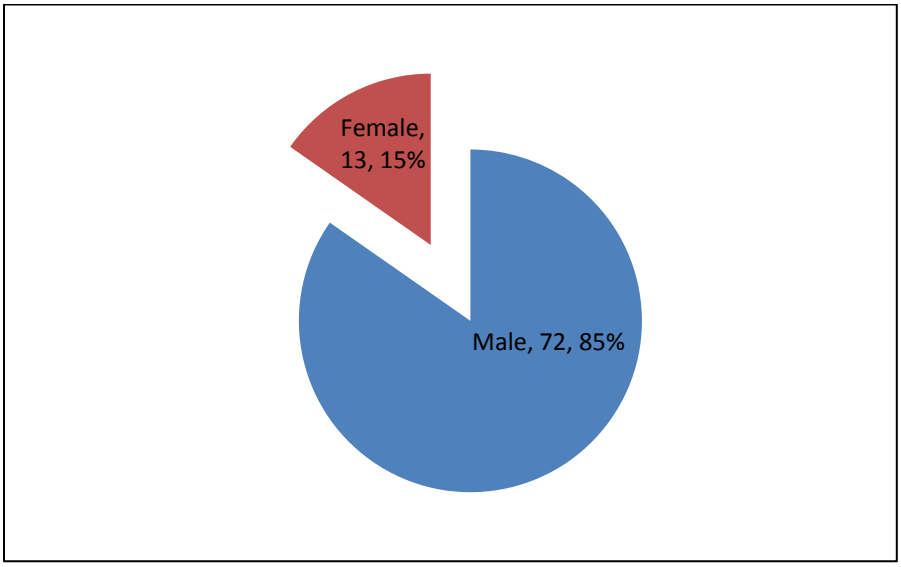

Figure 2: Gender distribution of the respondents

4.3 General Findings in Health Workforce

The Norms and Standards guidelines provide the minimum human resources and infrastructure needed to ensure that the different levels of health system are able to offer the expected Health service standards. In this training needs assessment the County Directors of Health were requested to provide the in post health worker as well as the ideal number of the health workforce required by their counties in view of the workloads.

According to the findings of the TNA, there exist skills gaps of healthcare workers and specialist in Kenya today. The skills gaps are analysed as ratios of health professionals at the national level as well as the counties in relation to the recommendation of the norms and standards guideline. As per the County Directors of Health, a total of 22.7 % (n=31,412) healthcare workers are currently employed in the county departments of health as well as in the public, FBO and private-for-profit health facilities. These numbers are below the required of 138,266 healthcare workers as per the norms and standards guidelines. Out of the total number currently employed, Kilifi County leads with 1,451 health workers followed by Kakamega County with 1,376 staff, then Meru, Embu and Nyeri Counties with 1,335, 1,215 and 1,178 health workers employed respectively. The counties with the least number of health workers employed in the county departments of health and in the public, FBO and private-for-profit health facilities are Turkana, Uasin Gishu, West Pokot and Migori with 105, 100, 91 and 89 health workers respectively (Table 2).

In comparing the number of healthcare workers employed at the counties against the number required as per the Norms and Standards guideline, there is a deficit of 106,854 healthcare workers nationally with Migori having the worse deficit with 89 employed against 4,303 required followed by Turkana with 105 employed against 2,578 required and then Uasin Gishu with 100 employed against 2,016 required. Counties that are doing better are West Pokot with 91 employed against 93 required as per the Norms and Standards followed by Kilifi with 1,451 employed against 2,494 required, then Kiambu County with 2,336 employed against 4,374 required and Isiolo with 452 employed against 951 required (Table 2).

Table 2: No. of health workers currently employed in public and FBO/private health facilities

S/No.	County	Employed	Ideal as per CDHs	Ideal as per norm & standard	% of norm met
1	Bomet	440	924	2,002	22.0
2	Bungoma	648	1,225	3,597	18.0
3	Busia	676	2,163	2,351	28.8
4	Elgeyo Marakwet	609	792	3,227	18.9
5	Embu	1,215	1,959	2,887	42.1
6	Garissa	398	1,735	4,108	9.7
7	Homa Bay	815	397	5,369	15.2
8	Isiolo	452	1,198	951	47.5
9	Kajiado	146	843	1,916	7.6
10	Kakamega	1,376	4,158	6,256	22.0
11	Kericho	692	1,617	3,215	21.5
12	Kiambu	2336	4042	4,374	53.4
13	Kilifi	1,451	7,141	2,494	58.2
14	Kirinyaga	589	785	2,300	25.6
15	Kisii	1,168	2,090	5,982	19.5
16	Kisumu	1,015	1,959	5,047	20.1
17	Kitui	1,138	1,615	6,169	18.4
18	Kwale	456	980	1,639	27.8
19	Laikipia	246	355	1,683	14.6
20	Lamu	221	462	1,137	19.4
21	Machakos	443	3,271	4,138	10.7
22	Makueni	726	667	4,774	15.2
23	Mandera	539	796	2,458	21.9
24	Marsabit	410	1,187	1,472	27.9
25	Meru	1,335	3,691	5,626	23.7
26	Migori	89	986	4,303	2.1

27	Mombasa	707	1,160	1,894	37.3
28	Murang'a	1,028	1,892	3,202	32.1
29	Nairobi	248	294	2,267	10.9
30	Nakuru	2343	3200	4,934	47.5
31	Nandi	443	1,006	2,696	16.4
32	Narok	417	2,844	2,385	17.5
33	Nyamira	472	1,721	3,928	12.0
34	Nyandarua	799	590	1,684	47.4
35	Nyeri	1,178	2,469	3,409	34.6
36	Samburu	220	671	1,040	21.2
37	Siaya	756	2,633	3,531	21.4
38	Taita Taveta	465	1,032	2,342	19.9
39	Tana River	461	813	1,042	44.2
40	Tharaka Nithi	616	1,721	1,582	38.9
41	Trans Nzoia	519	826	2,112	24.6
42	Turkana	105	433	2,578	4.1
43	Uasin Gishu	100	293	2,016	5.0
44	Vihiga	485	1,376	1,690	28.7
45	Wajir	330	1,075	4,366	7.6
46	West Pokot	91	445	93	97.8
	Grand Total	**31,412**	**73,532**	**138,266**	**22.7**

According to Medical Superintendents, 7,137 health workers are employed at levels 4 and 5 public health facilities in Kenya. Kakamega County leads with 429 health workers followed by Nakuru, Meru, Nyeri and Embu Counties with 394, 367, 346 and 316 healthcare workers respectively. The Counties with the least number of health workers employed in levels 4 and 5 public health facilities are Bomet with 44 health workers followed by Lamu, West Pokot, Nyandarua and Uasin Gishu with 54, 56, 59 and 74 healthcare workers respectively (Figure 3).

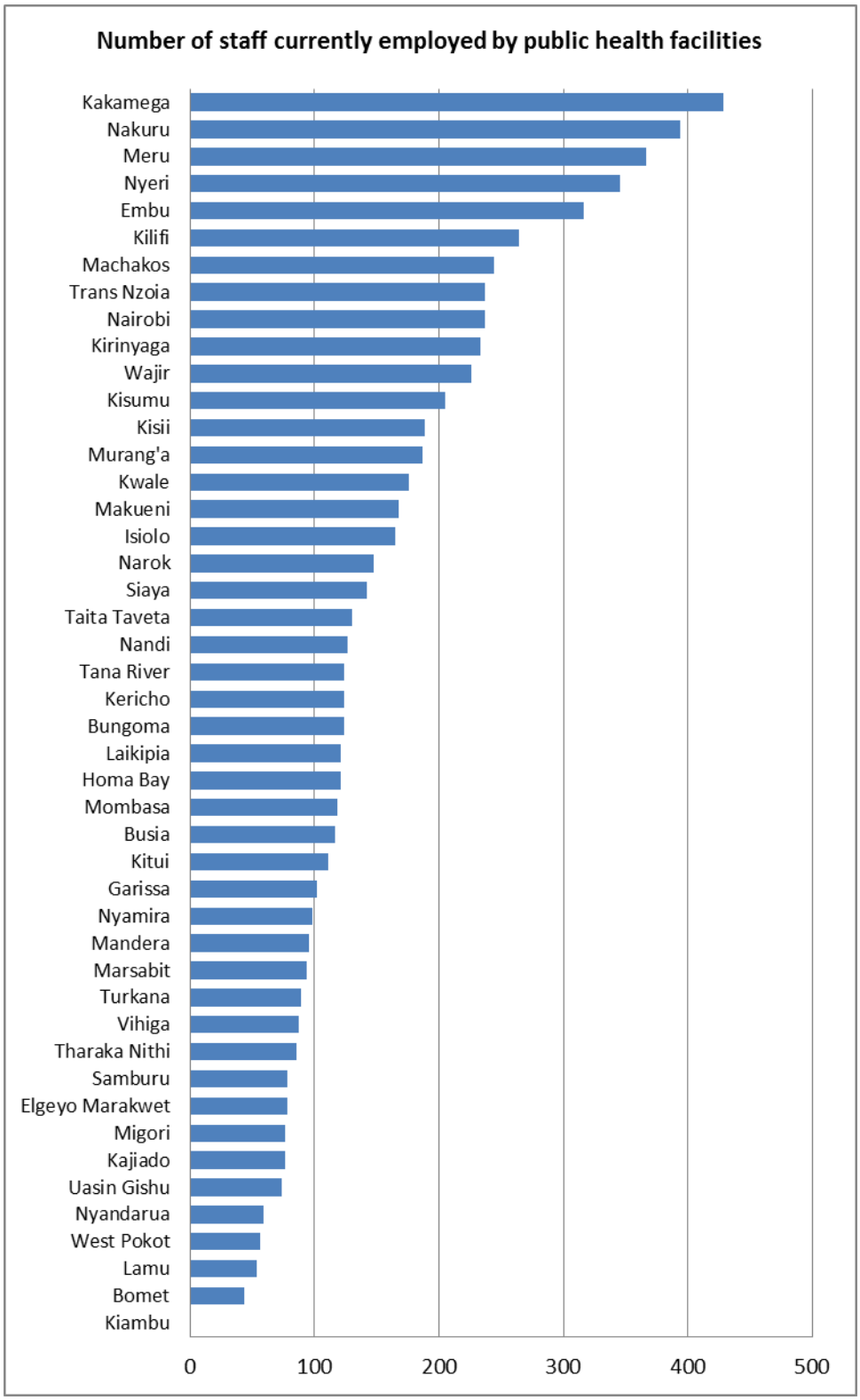

Figure 3: Number of health workers currently employed by public health facilities (Level 4 & 5)

As per the CDH, 1,719 General Practitioners or Medical Officers are currently employed in the CDoH and in the public, FBO and private-for-profit health facilities. Kisumu County leads with 107 Medical Officers employed against 99 required as per the norms and standards followed by Embu County with 106 Medical Officers employed against 134 required, then Machakos and Kakamega Counties with 99 and 97 Medical Officers employed against 235 and 306 required respectively. The counties with the least number of Medical Officers employed in the CDoH and in the public, FBO and private-for-profit health facilities are; Nyandarua, Wajir and Uasin Gishu with 5, 6 and 7 Medical Officers employed against 80,214 and 84 required as per the norms and standards respectively (Table 3).

Nurses form the bulk of health workers required for effective service delivery followed closely by Clinical Officers and Nutritionists. The least number of health workers not employed for effective service delivery are Pathologists, Epidemiologists and Dermatologists.

4.4 Perceptions

The assessment established a double disparity between the perceptions of ideal numbers required as per the CDH is 73,532 compared to 138,266 as required by the human resources for health norms and standards guidelines for the health sector (Table 2).

The ideal number of health workers as perceived by CDH has been compared to the recommended number of healthcare workers as per the human resources for health norms and standards guidelines as shown in Table 2. For example, Kilifi County has 1,451 employed versus a perceived need of 7,141 against a requirement of 2,494 as per the norms and standards guidelines. On the other hand, Kiambu County employed 2,336 versus a perceived need of 4,042 against 4,334 required by norms and standards.

Similarly, according to the perception of the CDH, Kilifi County (1,284) leads in the ideal number of Medical Officers required for effective service delivery followed by Machakos (235), Kakamega (156) and Kisii (141) against the ideal number of Medical Officers as per the norms and standards of 106, 186, 306 and 300 respectively (Table 3).

4.5 Gaps in Specialists

4.5.1 Medical Officers and Specialists (General practitioners (GP))

As per the CDoH the assessment established there are 1,719 GP/MOs employed by the counties against a requirement of 6,428 as per the norms and standards. The following counties have 100 MOs and above employed; Kisumu, Embu and Nakuru while Turkana County has none (Table 3).

4.5.2 Anesthetists

As per the CDH, 106 Anesthetists are currently employed in the CDoH and in the public, FBO and private-for-profit health facilities, against a requirement of 590 as per the human resources for health norms and standard guidelines for the health sector. Machakos County leads with 12 Anesthetists employed followed by Bungoma County with 8 Anesthetists, then Kisii and Busia Counties with 8 and 7 Anesthetists respectively. There are 20 counties without an Anesthetist employed in the CDoH and in the public, FBO and private-for-profit health facilities (Table 3).

Table 3: Number of Medical Officers of health and Anaesthetist per county

S/No.	County	GP/MO			Anaesthetist			% of norm met
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	
1	Bomet	25	42	74	1	4	6	56.5
2	Bungoma	70	137	170	8	35	18	45.3
3	Busia	31	87	106	7	20	10	35.5
4	Elgeyo Marakwet	19	45	146	0	8	14	35.8
5	Embu	106	62	134	2	14	14	142.1
6	Garissa	50	93	204	0	14	20	46.7
7	Homa Bay	47	10	258	0	1	24	427.3
8	Isiolo	22	33	40	0	4	4	59.5
9	Kajiado	16	35	80	5	5	6	52.5
10	Kakamega	47	156	306	0	6	28	29.0
11	Kericho	56	73	132	0	3	14	73.7
12	Kiambu	89	-	216	1	11	20	818.2
13	Kilifi	69	1,283	106	3	17	10	5.5
14	Kirinyaga	62	66	110	2	5	8	90.1
15	Kisii	68	141	300	8	1	32	53.5
16	Kisumu	107	102	248	4	14	26	95.7
17	Kitui	81	131	246	5	15	22	58.9
18	Kwale	17	43	66	0	5	6	35.4
19	Laikipia	39	28	76	4	7	8	122.9
20	Lamu	17	26	54	2	6	6	59.4
21	Machakos	99	235	186	12	24	16	42.9
22	Makueni	47	120	206	0	4	20	37.9
23	Mandera	16	19	122	0	3	10	72.7
24	Marsabit	18	38	62	0	10	4	37.5
25	Meru	39	30	268	2	12	28	97.6
26	Migori	8	18	200	0	5	20	34.8

S/No.	County	GP/MO			Anaesthetist			% of norm met
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	
27	Mombasa	63	70	94	3	7	10	85.7
28	Murang'a	27	35	142	3	7	14	71.4
29	Nairobi	17	25	104	2	4	6	65.5
30	Nakuru	100	150	232	0	6	22	64.1
31	Nandi	27	48	104	0	6	10	50.0
32	Narok	16	22	98	4	9	8	64.5
33	Nyamira	32	114	200	0	6	16	26.7
34	Nyandarua	9	16	80	0	3	4	47.4
35	Nyeri	39	62	162	2	5	14	61.2
36	Samburu	7	6	36	0	2	4	87.5
337	Siaya	29	103	162	3	25	14	25.0
38	Taita Taveta	34	53	114	2	5	10	62.1
39	Tana River	18	25	40	4	12	4	59.5
40	Tharaka Nithi	36	69	70	0	9	6	46.2
41	Trans Nzoia	39	56	102	0	2	10	67.2
42	Turkana	-	-	112	2	3	12	66.7
43	Uasin Gishu	7	11	84	0	3	6	50.0
44	Vihiga	29	61	84	0	9	6	41.4
45	Wajir	6	31	214	2	14	20	17.8
46	West Pokot	10	30	78	1	6	0	30.6
	TOTAL	**1,719**	**3,942**	**6,428**	**106**	**386**	**590**	**42.2**

4.5.3 Surgeons

According to the CDH, 200 (13.8%) Surgeons are currently employed in the CDoH and in the public, FBO and private-for-profit health facilities against the required 1,445 as per the human resources for health norms and standards guidelines. Kiambu County leads with 27 Surgeons employed followed by Bungoma County at 18 Surgeons, then Kisumu and Laikipia Counties with 12 and 10 Surgeons respectively. There are 10 counties without a Surgeon employed in the CDoH and in the public, FBO and private-for-profit health facilities. Surgeons employed are majorly: Obstetricians/Gynaecologists (108) followed by ENT Surgeons (30) and Ortho-Surgeons (29). There are no Cardio-Surgeons employed at the counties (Table 4).

4.5.4 Internal Medicine

According to the CDH, 175% (n=1,656) General Internists/Physicians are employed in the CDoH against a requirement of 945 as per the norms and standards guidelines. Kisumu County leads with 109 followed by Embu County with 107 and then Machakos, Kakamega and Kitui Counties

with 100, 97 and 82 respectively. Additionally, there are 11 Internal Medicines Specialists employed in the counties against a requirement of 375 as per the norms and standards. The least employed Internal Medicine Specialists in the health facilities (GoK, FBO and private-for-Profit) are the Endocrinologists (1) and Chest Specialists (1). There are no Oncologists and Nephrologists employed despite the norms and standards requirement of 40 and 285 respectively (Table 5 & 6).

4.5.5 Clinical Officers and Clinical Officer Specialist

According to the CDH, 13.4% (n=1,907) Clinical Officers are employed in the CDoH and in the public, FBO and private-for-profit health facilities. These are lower than the 14,270 Clinical Officers required by norms and standard. Siaya County leads with 161 Clinical Officers followed by Kilifi County with 130 then Homa Bay, Elgeyo Marakwet and Embu Counties with 126, 105 and 105 Clinical Officers respectively. The counties with the least number of Clinical Officers employed in the CDoH and in the public, FBO and private-for-profit health facilities are Samburu, Nairobi, Wajir, Bomet and Lamu with 8, 8, 11, 11 and 12 Clinical Officers respectively (Table 7 & 8). Most Clinical Officers (934) hold a Bachelor's degree followed by Lung and Skin Clinical Officers (227) and Anaesthetics Clinical Officers (215) against the ideal number of Clinical Officers as per the norms and standards of 4,585, 1,885 and 1,740 respectively.

4.5.6 Nursing Officers and Nurse Specialists

According to the County Directors of Health, 16% (n= 19,750) Nurses are employed in the CDoH and in the public, FBO and private-for-profit health facilities against the required 123,800 as per norms and standards. General Nurses with KRCHN, KECHN and BSN qualification account for 68.4 % (13,504) of the total employed. Majority of the Nurses employed are Kenya Registered Community Health Nurses (10,210) followed by Registered Midwives (4,089), Bachelor of Science Nurses (1,184) and Community Public Health Nurses (2,110) against the ideal number of Nurses as per the norms and standards of 41,732, 10,730, 1180 and 52,228 respectively. Forensic Nurses (1), Dental Nurses (13), Accident and Emergency Nurses (13) and Oncology Nurses (36) are the least.

As per the human resources for health norms and standards guidelines, there should 123,800 Nurses employed at health facilities (GoK, FBO and private-for-Profit). There are no Cardiology Nurses employed despite the norms and standards requirement of 20 Cardiology Nurses.

The counties with most Nurses are: Meru (1,134); Kilifi (1,061); Nyeri (973); Kakamega (925); and Kisii (918). The counties with the least Nurses employed in the CDoH and in the public, FBO and private-for-profit health facilities are West Pokot (16) and Turkana (19) (Table 9, 10, 11 & 12).

Table 4: Number of Surgeons per county

No.	County	ENT surgeons			Ortho Surgeons			Cadio Surgeons			Neuro Surgeon			Urolo Surgeons			Total Surgeons (A)		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
1	Bomet	0	2	3	0	2	3	0	1	0	0	1	0	0	0	0	0	6	6
2	Bungoma	1	7	9	1	5	9	0	4	0	0	4	0	0	4	0	0	6	6
3	Busia	0	3	5	2	3	5	0	1	0	0	1	0	0	2	0	2	24	18
4	Elgeyo Marakwet	0	4	7	0	3	7	0	2	0	0	2	0	0	2	0	2	10	10
5	Embu	2	5	6	2	6	6	0	6	1	0	6	1	0	5	1	0	13	14
6	Garissa	2	9	9	0	4	9	0	3	1	0	3	1	0	4	1	4	28	15
7	Homa Bay	0	1	12	0	1	12	0	3	0	0	3	0	0	1	0	2	23	21
8	Isiolo	0	3	2	0	3	2		5	0	0	2	0	0	2	0	0	9	24
9	Kajiado	0	1	3	0	0	3	0	0	0	0	0	0	0	0	0	0	15	4
10	Kakamega	2	11	13	0	7	13	0	4	1	0	4	1	0	4	1	0	1	6
11	Kericho	2	5	7	0	4	7	0	2	0	0	3	0	0	3	0	2	30	29
12	Kiambu	2	0	9	17	5	9	0	0	1	2	0	1	0	0	1	2	17	14
13	Kilifi	2	9	5	0	9	5	0	7	0	0	6	0	0	7	0	21	5	21
14	Kirinyaga	2	2	4	0	2	4	0	2	0	0	2	0	0	1	0	2	38	10
15	Kisii	2	7	15	0	4	15	0	2	1	0	2	1	0	2	1	2	9	8
16	Kisumu	2	9	12	2	11	12	0	5	1	0	7	1	0	5	1	2	17	33
17	Kitui	1	4	11	0	4	11	0	4	0	0	2	0	0	2	0	4	37	27
18	Kwale	0	5	3	0	6	3	0	4	0	0	3	0	0	2	0	1	16	22
19	Laikipia	0	4	4	1	3	4	0	3	0	2	3	0	0	1	0	0	20	6
20	Lamu	0	2	3	0	2	3	0	2	0	0	2	0	0	2	0	3	14	8
21	Machakos	2	10	7	1	10	7	0	2	1	0	2	1	0	2	1	0	10	6
22	Makueni	0	2	10	0	2	10	0	2	0	0	2	0	0	2	0	3	26	17

23	Mandera	0	3	5	0	2	5	0	2	0	0	2	0	0	2	0	0	10	20
24	Marsabit	0	6	2	0	4	2	0	1	0	0	1	0	0	1	0	0	11	10
25	Meru	2	4	14	0	7	14	0	6	0	0	6	0	0	7	0	0	13	4
26	Migori	0	4	10	0	4	10	0	3	0	0	3	0	0	3	0	2	30	28
27	Mombasa	1	3	4	1	3	4	0	1	1	0	2	1	0	2	1	0	17	20
28	Murang'a	0	7	7	0	9	7	0	3	0	0	2	0	1	4	0	2	11	11
29	Nairobi	1	2	3	0	3	3	0	2	0	0	2	0	1	1	0	1	25	14
30	Nakuru	2	3	10	0	4	10	0	2	1	0	2	1	1	2	1	2	10	6
31	Nandi	0	3	5	0	3	5	0	1	0	0	2	0	0	2	0	3	13	23
32	Narok	0	6	4	0	6	4	0	3	0	0	3	0	0	4	0	0	11	10
33	Nyamira	0	9	8	0	4	8	0	3	0	0	1	0	0	1	0	0	22	8
34	Nyandarua	0	3	2	0	3	2	0	1	0	0	1	0	0	1	0	0	18	16
35	Nyeri	2	4	6	0	4	6	0	2	1	0	2	1	0	2	1	0	9	4
36	Samburu	0	3	2	0	3	2	0	3	0	0	3	0	0	3	0	2	14	15
37	Siaya	0	4	7	0	4	7	0	2	0	0	0	0	0	1	0	0	15	4
38	Taita Taveta	1	3	5	1	3	5	0	1	0	0	0	0	0	2	0	0	11	14
39	Tana River	0	6	2	0	4	2	0	4	0	0	6	0	0	6	0	2	9	10
40	Tharaka Nithi	0	7	3	0	7	3	0	4	0	0	4	0	0	4	0	0	26	4
41	Trans Nzoia	0	3	5	1	3	5	0	1	0	0	1	0	0	2	0	0	26	6
42	Turkana	0	4	6	0	4	6	0	3	0	0	3	0	0	3	0	1	10	10
43	Uasin Gishu	0	1	3	0	1	3	0	1	0	0	1	0	0	1	0	0	17	12
44	Vihiga	0	4	3	0	1	3	0	2	0	0	2	0	0	2	0	0	5	6
45	Wajir	0	4	10	0	3	10	0	2	0	0	2	0	0	3	0	0	11	6
46	West Pokot	0	4	0	0	3	0	0	3	0	0	3	0	0	3	0	0	14	20
	TOTAL	**30**	**205**	**285**	**29**	**188**	**285**	**0**	**120**	**10**	**4**	**114**	**10**	**3**	**115**	**10**	0	16	10
																	66	**742**	**600**

Table 4: Number of Surgeons per county

S/No.	County	Paediatric Surgeons			Neurologists			Plastic Surgeons			Obstetricians/ Gynaecologists			Surgeons Grand Totals		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed Surgeons	Ideal as per CDH	Ideal as per norm & standard
1	Bomet	0	0	0	0	1	3	0	0	0	1	4	6	1	5	9
2	Bungoma	2	6	0	0	4	9	10	34	0	4	12	18	16	56	27
3	Busia	0	3	0	0	1	5	0	1	0	2	4	10	2	9	15
4	Elgeyo Marakwet	0	1	0	0	2	7	0	3	0	0	7	14	0	13	21
5	Embu	0	2	1	0	6	5	0	6	1	4	10	11	4	24	18
6	Garissa	0	6	1	0	3	8	0	3	1	2	7	17	2	19	27
7	Homa Bay	0	4	0	0	3	12	0	0	0	1	2	24	1	9	36
8	Isiolo	0	3	0	0	2	2	0	2	0	2	5	4	2	12	6
9	Kajiado	0	2	0	0	0	3	0	0	0	3	1	6	3	3	9
10	Kakamega	0	0	1	0	4	12	0	4	1	4	13	25	4	21	39
11	Kericho	0	4	0	0	3	7	0	2	0	4	9	14	4	18	21
12	Kiambu	0	0	1	2	0	8	2	0	1	6	0	17	10	0	27
13	Kilifi	0	8	0	0	6	5	0	7	0	4	15	10	4	36	15
14	Kirinyaga	1	2	0	0	2	4	0	1	0	2	3	8	3	8	12
15	Kisii	0	3	1	0	2	14	0	2	1	4	8	29	4	15	45
16	Kisumu	2	6	1	0	7	11	0	5	1	6	13	23	8	31	36
17	Kitui	0	4	0	0	2	11	0	4	0	4	9	22	4	19	33
18	Kwale	0	2	0	0	3	3	0	1	0	2	5	6	2	11	9
19	Laikipia	1	1	0	2	3	4	0	1	0	4	4	8	7	9	12
20	Lamu	0	2	0	0	2	3	0	2	0	0	4	6	0	10	9
21	Machakos	0	4	1	0	2	6	0	2	1	5	14	13	5	22	21
22	Makueni	0	2	0	0	2	10	0	2	0	1	3	20	1	9	30
23	Mandera	0	2	0	0	2	5	0	2	0	0	3	10	0	9	15

S/No.	County	Paediatric Surgeons			Neurologists			Plastic Surgeons			Obstetricians/ Gynaecologists			Surgeons Grand Totals		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed Surgeons	Ideal as per CDH	Ideal as per norm & standard
24	Marsabit	0	2	0	0	1	2	0	7	0	0	2	4	0	12	6
25	Meru	0	7	0	0	6	14	0	5	0	4	11	28	4	29	42
26	Migori	0	4	0	0	3	10	0	2	0	0	9	20	0	18	30
27	Mombasa	1	3	1	0	2	3	0	4	1	4	8	7	5	17	12
28	Murang'a	0	4	0	0	2	7	0	2	0	6	11	14	6	19	21
29	Nairobi	0	2	0	0	2	3	0	2	0	2	5	6	2	11	9
30	Nakuru	0	2	1	0	2	9	0	2	1	3	5	19	3	11	30
31	Nandi	0	2	0	0	2	5	0	2	0	2	6	10	2	12	15
32	Narok	0	5	0	0	3	4	0	4	0	3	5	8	3	17	12
33	Nyamira	0	6	0	0	1	8	0	1	0	0	5	16	0	13	24
34	Nyandarua	0	1	0	0	1	2	0	1	0	1	8	4	1	11	6
35	Nyeri	0	2	1	0	2	5	2	3	1	6	12	11	8	19	18
36	Samburu	0	3	0	0	3	2	0	3	0	0	3	4	0	12	6
37	Siaya	0	2	0	0	0	7	0	0	0	2	7	14	2	9	21
38	Taita Taveta	1	3	0	0	0	5	0	0	0	0	5	10	1	8	15
39	Tana River	0	3	0	0	6	2	0	3	0	0	7	4	0	19	6
40	Tharaka Nithi	0	4	0	0	4	3	0	4	0	3	10	6	3	22	9
41	Trans Nzoia	0	2	0	0	1	5	0	1	0	1	6	10	1	10	15
42	Turkana	0	3	0	0	3	6	0	2	0	2	6	12	2	14	18
43	Uasin Gishu	0	1	0	0	1	3	0	1	0	0	2	6	0	5	9
44	Vihiga	0	2	0	0	2	3	0	2	0	2	5	6	2	11	9
45	Wajir	0	4	0	0	2	10	0	3	0	0	6	20	0	15	30
46	West Pokot	0	5	0	0	3	0	0	3	0	2	6	0	2	17	0
	TOTAL	**8**	**139**	**10**	**4**	**114**	**275**	**14**	**141**	**10**	**108**	**305**	**560**	**134**	**699**	**855**

Table 5: Number of specialist in internal medicine per county part 1

No.	County	General Internist/ Physicians			Cardiologists			Chest Specialist			Endocrinologists			Gastro-Enterologists			Totals Internal Medicine		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
1	Bomet	25	42	6	0	0	0	0	0	0	0	0	0	0	0	0	25	42	6
2	Bungoma	70	137	18	0	3	0	0	3	0	0	3	0	0	4	0	70	150	18
3	Busia	31	87	10	0	2	0	0	2	0	0	2	0	0	2	0	31	95	10
4	Elgeyo Marakwet	19	45	14	0	4	0	1	4	0	0	2	0	0	3	0	20	58	14
5	Embu	106	62	12	0	5	2	0	6	0	0	5	0	0	5	2	106	83	16
6	Garissa	50	93	18	0	4	2	0	2	0	0	2	0	0	3	2	50	104	22
7	Homa Bay	47	10	24	0	0	0	0	0	0	0	0	0	0	0	0	47	10	24
8	Isiolo	22	33	4	0	2	0	0	2	0	0	2	0	0	2	0	22	41	4
9	Kajiado	16	35	6	0	0	0	0	0	0	0	0	0	0	0	0	16	35	6
10	Kakamega	47	156	26	0	4	2	0	4	0	0	4	0	0	3	2	47	171	30
11	Kericho	56	73	14	0	3	0	0	3	0	0	3	0	0	3	0	56	85	14
12	Kiambu	16	0	18	0	0	2	0	0	0	0	0	0	2	0	2	18	0	22
13	Kilifi	69	1283	10	0	8	0	0	6	0	0	7	0	0	8	0	69	1312	10
14	Kirinyaga	62	66	8	0	2	0	0	2	0	0	2	0	0	2	0	62	74	8
15	Kisii	68	141	30	0	3	2	0	2	0	0	2	0	0	3	2	68	151	34
16	Kisumu	107	102	24	0	4	2	0	2	0	0	4	0	2	6	2	109	118	28
17	Kitui	81	131	22	0	2	0	0	2	0	0	2	0	0	2	0	81	139	22
18	Kwale	17	43	6	0	1	0	0	2	0	0	2	0	0	2	0	17	50	6
19	Laikipia	39	28	8	0	1	0	0	1	0	0	1	0	0	1	0	39	32	8
20	Lamu	17	26	6	0	2	0	0	0	0	0	0	0	0	0	0	17	28	6
21	Machakos	99	235	14	0	4	2	0	1	0	1	2	0	0	5	2	100	247	18
22	Makueni	47	30	20	0	2	0	0	2	0	0	2	0	0	2	0	47	38	20
23	Mandera	16	19	10	0	3	0	0	2	0	0	2	0	0	3	0	16	29	10
24	Marsabit	18	38	4	0	1	0	0	2	0	0	1	0	0	1	0	18	43	4

No.	County	General Internist/ Physicians			Cardiologists			Chest Specialist			Endocrinologists			Gastro-Enterologists			Totals Internal Medicine		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
25	Meru	39	70	28	0	4	0	0	4	0	0	4	0	0	4	0	39	86	28
26	Migori	8	18	20	0	3	0	0	4	0	0	3	0	0	3	0	8	31	20
27	Mombasa	63	70	8	0	3	2	0	3	0	0	3	0	0	3	2	63	82	12
28	Murang'a	27	35	14	0	2	0	0	3	0	0	3	0	0	3	0	27	46	14
29	Nairobi	17	25	6	1	2	0	0	2	0	0	1	0	0	1	0	18	31	6
30	Nakuru	2	10	20	0	2	2	0	2	0	0	2	0	0	2	2	2	18	24
31	Nandi	27	48	10	0	2	0	0	2	0	0	2	0	0	2	0	27	56	10
32	Narok	16	112	8	0	3	0	0	13	0	0	4	0	0	4	0	16	136	8
33	Nyamira	32	114	16	0	1	0		1	0	0	1	0	0	1	0	32	118	16
34	Nyandarua	9	16	4	0	1	0	0	1	0	0	1	0	0	1	0	9	20	4
35	Nyeri	39	62	12	0	2	2	0	2	0	0	2	0	0	2	2	39	70	16
36	Samburu	7	6	4	0	3	0	0	3	0	0	3	0	0	3	0	7	18	4
37	Siaya	29	103	14	0	2	0	0	2	0	0	0	0	0	0	0	29	107	14
38	Taita Taveta	34	53	10	0	2	0	0	3	0	0	0	0	0	0	0	34	58	10
39	Tana River	18	25	4	0	2	0	0	3	0	0	2	0	0	2	0	18	34	4
40	Tharaka Nithi	36	69	6	0	4	0	0	4	0	0	4	0	0	4	0	36	85	6
41	Trans Nzoia	39	56	10	0	2	0	0	3	0	0	1	0	0	0	0	39	62	10
42	Turkana	0	0	12	0	1	0	0	2	0	0	1	0	0	2	0	0	6	12
43	Uasin Gishu	7	11	6	0	1	0	0	3	0	0	1	0	0	1	0	7	17	6
44	Vihiga	29	61	6	0	2	0	0	2	0	0	2	0	0	2	0	29	69	6
45	Wajir	6	31	20	0	3	0	0	4	0	0	2	0	0	2	0	6	42	20
46	West Pokot	10	30	0	0	3	0	1		0	0	3	0	0	3	0	11	39	0
	TOTAL	**1639**	**3940**	**570**	**1**	**110**	**20**	**1**	**5813**	**0**	**1**	**95**	**0**	**4**	**105**	**20**	**1646**	**10063**	**610**

Table 6: Number of specialist in internal medicine per county part 2

No.	County	Nephrologists			Oncologist			Pediatric Endocrinologists			Neonatologists			Urologists			Totals Internal Medicine		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
1	Bomet	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
2	Bungoma	0	3	9	0	2	0	0	0	0	0	0	0	0	4	0	0	9	9
3	Busia	0	2	5	0	3	0	0	0	0	0	0	0	0	2	0	0	7	5
4	Elgeyo Marakwet	0	5	7	0	6	0	0	0	0	0	3	0	0	3	0	0	17	7
5	Embu	0	6	6	0	5	4	0	0	1	1	3	0	0	6	0	1	20	11
6	Garissa	0	4	9	0	2	4	0	0	1	0	0	0	0	5	0	0	11	14
7	Homa Bay	0	1	12	0	1	0	0	0	0	0	1	0	0	0	0	0	3	12
8	Isiolo	0	2	2	0	2	0	0	1	0	0	1	0	0	2	0	0	8	2
9	Kajiado	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10	Kakamega	0	4	13	0	4	4	0	1	1	0	2	0	0	4	0	0	15	18
11	Kericho	0	3	7		3	0	0	2	0	0	2	0	0	3	0	0	13	7
12	Kiambu	0	0	9	0	0	4	0	0	1	0	0	0	0	0	0	0	0	14
13	Kilifi	0	8	5	0	9	0	0	3	0	0	7	0	0	7	0	0	34	5
14	Kirinyaga	0	1	4	0	1	0	0	0	0	0	0	0	0	2	0	0	4	4
15	Kisii	0	3	15	0	6	4	0	1	1	1	5	0	0	3	0	1	18	20
16	Kisumu	0	6	12	0	6	4	0	0	1	0	0	0	0	4	0	0	16	17
17	Kitui	0	2	11	0	2	0	0	1	0	0	2	0	1	4	0	1	11	11
18	Kwale	0	1	3	0	2	0	0	0	0	0	0	0	0	2	0	0	5	3
19	Laikipia	0	1	4	0	2	0	0	0	0	0	0	0	0	3	0	0	6	4
20	Lamu	0	1	3	0	2	0	0	0	0	0	0	0	0	0	0	0	3	3
21	Machakos	0	7	7	0	8	4	0	0	1	0	0	0	0	2	0	0	17	12
22	Makueni	0	2	10	0	2	0	0	0	0	0	0	0	0	2	0	0	6	10
23	Mandera	0	2	5	0	2	0	0	0	0	0	0	0	0	5	0	0	9	5
24	Marsabit	0	1	2	0	2	0	0	0	0	0	0	0	0	2	0	0	5	2

No.	County	Nephrologists			Oncologist			Pediatric Endocrinologists			Neonatologists			Urologists			Totals Internal Medicine		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
25	Meru	0	4	14	0	4	0	0	0	0	0	3	0	0	5	0	0	16	14
26	Migori	0	3	10	0	4	0	0	1	0	0	2	0	0	3	0	0	13	10
27	Mombasa	0	3	4	0	3	4	0	0	1	0	0	0	0	3	0	0	9	9
28	Murang'a	0	3	7	0	3	0	0	1	0	1	1	0	1	4	0	2	12	7
29	Nairobi	0	1	3	0	2	0	0	3	0	0	2	0	0	3	0	0	11	3
30	Nakuru	0	2	10	0	2	4	0	2	1	1	4	0	1	2	0	2	12	15
31	Nandi	0	3	5	0	3	0	0	2	0	0	2	0	0	3	0	0	13	5
32	Narok	0	4	4	0	4	0	0	0	0	0	0	0	1	4	0	1	12	4
33	Nyamira	0	1	8	0	1	0	0	1	0	0	2	0	0	1	0	0	6	8
34	Nyandarua	0	1	2	0	1	0	0	0	0	0	0	0	0	1	0	0	3	2
35	Nyeri	0	3	6	0	3	4	0	0	1	0	0	0	0	3	0	0	9	11
36	Samburu	0	3	2	0	3	0	0	0	0	0	0	0	0	3	0	0	9	2
37	Siaya	0	0	7	0	1	0	0	0	0	0	0	0	0	2	0	0	3	7
38	Taita Taveta	0	0	5	0	2	0	0	0	0	0	0	0	0	4	0	0	6	5
39	Tana River	0	2	2	0	4	0	0	0	0	0	0	0	0	4	0	0	10	2
40	Tharaka Nithi	0	4	3	0	4	0	0	1	0	0	1	0	0	4	0	0	14	3
41	Trans Nzoia	0	2	5	0	5	0	0	1	0	1	3	0	0	2	0	1	13	5
42	Turkana	0	1	6	0	3	0	0	0	0	0	3	0	0	3	0	0	10	6
43	Uasin Gishu	0	1	3	0	1	0	0	0	0	0	1	0	0	2	0	0	5	3
44	Vihiga	0	3	3	0	2	0	0	1	0	0	1	0	0	2	0	0	9	3
45	Wajir	0	2	10	0	3	0	0	1	0	0	1	0	0	2	0	0	9	10
46	West Pokot	0	3	0	0	3	0	0	0	0	0	0	0	0	3	0	0	9	10
	TOTAL	**0**	**116**	**285**	**0**	**133**	**40**	**0**	**23**	**10**	**5**	**52**	**0**	**4**	**128**	**0**	**9**	**452**	**345**

Table 7: Number of Clinical Officers per county-part 1

No.	County	Graduate Clinical Officers			CO ENT			CO Lungs and Skin			CO Ophthalmology/Cataract Surgery			CO Paediatrics			Total COs		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
1	Bomet	0	29	55	1	5	19	2	9	25	0	4	12	3	5	19	6	52	130
2	Bungoma	12	35	139	0	28	31	1	7	49	0	10	36	3	14	31	16	94	286
3	Busia	48	19	83	2	3	23	3	10	33	2	7	20	4	16	23	59	55	182
4	Elgeyo Marakwet	85	17	115	2	7	31	5	6	45	1	7	28	2	8	31	95	45	250
5	Embu	72	40	73	4	10	22	8	14	28	7	10	18	2	6	24	93	80	165
6	Garissa	2	43	126	4	18	39	4	13	51	1	11	30	3	13	41	14	98	287
7	Homa Bay	115	41	201	1	4	57	0	4	81	2	4	48	0	0	57	118	53	444
8	Isiolo	27	5	32	2	7	8	8	9	12	0	8	8	1	8	8	38	37	68
9	Kajiado	9	64	58	1	8	22	2	19	28	4	5	12	2	7	22	18	103	142
10	Kakamega	0	15	201	5	20	66	6	19	86	6	19	46	3	20	68	20	93	467
11	Kericho	4	26	108	2	10	24	9	15	38	4	10	28	4	15	24	23	76	222
12	Kiambu	15	0	132	3	0	45	11	16	57	5	0	30	2	0	47	36	16	311
13	Kilifi	99	424	83	3	17	23	3	2	33	4	15	20	2	26	23	111	484	182
14	Kirinyaga	11	18	79	3	4	31	7	4	39	0	0	16	4	5	31	25	31	196
15	Kisii	11	27	210	2	9	51	0	31	75	2	5	54	4	7	53	19	79	443
16	Kisumu	1	16	166	5	36	43	7	6	61	4	32	42	4	46	45	21	136	357
17	Kitui	9	6	189	4	8	57	6	5	79	5	5	44	7	6	57	31	30	426
18	Kwale	4	16	51	2	8	15	2	5	21	2	7	12	2	16	15	12	52	114
19	Laikipia	5	8	62	3	4	14	4	4	22	4	5	16	3	11	14	19	32	128
20	Lamu	0	1	45	3	7	9	1	4	15	0	1	12	2	5	9	6	18	90
21	Machakos	4	101	105	8	47	42	7	50	50	1	0	22	10	52	44	30	250	263
22	Makueni	7	18	163	2	4	43	6	4	63	1	0	40	4	4	43	20	30	352
23	Mandera	11	10	91	2	11	31	6	11	41	2	5	20	5	12	31	26	49	214

No.	County	Graduate Clinical Officers			CO ENT			CO Lungs and Skin			CO Ophthalmology/Cataract Surgery			CO Paediatrics			Total COs		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
24	Marsabit	0	11	43	2	7	19	6	9	23	2	4	8	1	6	19	11	37	112
25	Meru	11	18	218	5	33	50	11	32	78	2	29	56	7	33	50	36	145	452
26	Migori	3	51	160	0	6	40	1	9	60	2	6	40	2	9	40	8	81	340
27	Mombasa	8	12	41	3	4	14	6	7	16	2	4	10	5	5	16	24	32	97
28	Murang'a	15	27	113	4	10	29	15	13	43	0	1	28	2	13	29	36	64	242
29	Nairobi	0	0	70	1	1	34	1	2	40	2	2	12	1	1	34	5	6	190
30	Nakuru	16	30	146	5	10	47	10	20	61	5	12	34	12	20	49	48	92	337
31	Nandi	46	105	82	4	13	22	2	15	32	1	11	20	4	14	22	57	158	178
32	Narok	0	32	73	2	23	25	7	21	33	0	14	16	4	25	25	13	115	172
33	Nyamira	5	15	148	2	10	52	1	2	68	1	4	32	3	10	52	12	41	352
34	Nyandarua	0	34	52	1	10	28	5	10	32	1	8	8	0	10	28	7	72	148
35	Nyeri	4	11	87	3	8	36	9	22	42	1	3	18	3	14	38	20	58	221
36	Samburu	1	15	30	0	3	6	2	8	10	0	3	8	1	5	6	4	34	60
37	Siaya	143	205	123	0	3	39	9	23	53	1	5	28	0	6	39	153	242	282
38	Taita Taveta	1	15	87	1	8	27	2	9	37	1	6	20	2	22	27	7	60	198
39	Tana River	35	52	32	0	4	8	0	4	12	1	3	8	0	5	8	36	68	68
40	Tharaka Nithi	4	18	53	4	16	17	5	11	23	2	12	12	3	21	17	18	78	122
41	Trans Nzoia	1	12	81	4	15	21	7	15	31	6	16	20	9	16	21	27	74	174
42	Turkana	19	32	92	2	0	20	5	7	32	4	7	24	0	1	20	30	47	188
43	Uasin Gishu	9	11	60	1	3	24	5	4	30	4	4	12	3	4	24	22	26	150
44	Vihiga	54	77	60	0	8	24	4	8	30	1	3	12	3	6	24	62	102	150
45	Wajir	3	36	167	1	15	47	2	21	67	2	14	40	0	5	47	8	91	368
46	West Pokot	5	24	0	4	9	0	4	8	0	0	4	0	4	15	0	17	60	0
	TOTAL	**934**	**1822**	**4585**	**113**	**494**	**1375**	**227**	**547**	**1885**	**98**	**345**	**1080**	**148**	**568**	**1395**	**1520**	**3776**	**10320**

Table 8: Number of Clinical Officers per county-part 2

No.	County	CO Reproductive Health			CO Dermatology			CO Anaesthetics			CO Psychiatry/Mental Health			CO Oncology/Palliative Care			Clinical Officers		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
1	Bomet	0	5	19	0	2	3	5	12	18	0	2	3	0	2	3	5	23	46
2	Bungoma	5	19	31	4	14	9	0	8	54	0	8	9	0	7	9	9	56	112
3	Busia	2	12	23	2	12	5	9	2	30	0	7	5	0	5	5	13	38	68
4	Elgeyo Marakwet	0	8	31	3	11	7	6	17	42	0	5	7	1	7	7	10	48	94
5	Embu	3	8	20	4	14	6	5	8	39	0	3	6	0	11	6	12	44	77
6	Garissa	1	13	37	0	11	9	9	22	57	0	9	9	0	12	9	10	67	121
7	Homa Bay	1	2	57	5	6	12	2	2	72	0	3	12	0	3	12	8	16	165
8	Isiolo	0	8	8	4	12	2	7	2	12	0	5	2	0	5	2	11	32	26
9	Kajiado	0	8	22	0	17	3	7	14	18	0	5	3	0	4	3	7	48	49
10	Kakamega	6	20	64	9	19	13	12	32	81	0	18	13	1	7	13	28	96	184
11	Kericho	1	10	24	8	16	7	10	23	42	1	8	7	2	5	7	22	62	87
12	Kiambu	1	0	43	0	0	9	21	0	57	1	0	9	0	0	9	23	0	127
13	Kilifi	2	18	23	9	36	5	8	31	30	0	12	5	0	12	5	19	109	68
14	Kirinyaga	2	4	31	0	4	4	11	8	24	0	4	4	0	4	4	13	24	67
15	Kisii	0	5	49	2	21	15	4	13	93	0	4	15	0	8	15	6	51	187
16	Kisumu	0	27	41	3	28	12	18	71	75	0	23	12	0	26	12	21	175	152
17	Kitui	4	9	57	3	5	11	`0	20	66	1	10	11	0	5	11	8	49	156
18	Kwale	0	7	15	0	8	3	9	21	18	0	5	3	0	5	3	9	46	42
19	Laikipia	1	7	14	0	6	4	12	15	24	0	2	4	0	2	4	13	32	50
20	Lamu	0	6	9	0	4	3	6	11	18	0	4	3	0	2	3	6	27	36
21	Machakos	9	44	40	1	10	7	6	66	45	0	12	7	0	12	7	16	144	106
22	Makueni	0	4	43	3	4	10	14	10	60	0	4	10	0	4	10	17	26	133

No.	County	CO Reproductive Health			CO Dermatology			CO Anaesthetics			CO Psychiatry/Mental Health			CO Oncology/Palliative Care			Clinical Officers		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
23	Mandera	0	9	31	0	6	5	9	16	30	0	5	5	0	4	5	9	40	76
24	Marsabit	0	6	19	1	6	2	6	7	12	0	6	2	0	5	2	7	30	37
25	Meru	1	31	50	0	32	14	20	50	84	0	30	14	0	32	14	21	175	176
26	Migori	1	19	40	0	16	10	6	26	60	0	12	10	0	7	10	7	80	130
27	Mombasa	3	6	12	2	5	4	15	19	27	0	6	4	0	7	4	20	43	51
28	Murang'a	4	4	29	0	10	7	7	20	42	0	10	7	1	4	7	12	48	92
29	Nairobi	0	6	34	3	4	3	0	1	18	0	1	3	0	1	3	3	13	61
30	Nakuru	2	16	45	2	23	10	21	35	63	0	2	10	2	4	10	27	80	138
31	Nandi	0	4	22	5	9	5	12	18	30	0	10	5	1	8	5	18	49	67
32	Narok	0	10	25	0	14	4	5	24	24	0	22	4	0	16	4	5	86	61
33	Nyamira	0	19	52	4	9	8	4	12	48	0	2	8	0	2	8	8	44	124
34	Nyandarua	0	2	28	0	1	2	5	14	12	0	6	2	0	3	2	5	26	46
35	Nyeri	0	10	34	0	3	6	14	28	39	0	5	6	0	4	6	14	50	91
36	Samburu	1	4	6	0	5	2	3	9	12	0	6	2	0	5	2	4	29	24
37	Siaya	1	5	39	0	6	7	7	3	42	0	2	7	0	2	7	8	18	102
38	Taita Taveta	2	6	27	0	7	5	8	18	30	0	9	5	0	3	5	10	43	72
39	Tana River	0	9	8	0	5	2	4	9	12	0	5	2	0	3	2	4	31	26
40	Tharaka Nithi	0	7	17	4	10	3	6	19	18	0	14	3	1	7	3	11	57	44
41	Trans Nzoia	0	9	21	6	8	5	6	18	30	0	5	5	2	4	5	14	44	66
42	Turkana	0	1	20	2	4	6	2	7	36	0	2	6	0	1	6	4	15	74
43	Uasin Gishu	2	4	24	2	5	3	0	5	18	0	4	3	2	4	3	6	22	51
44	Vihiga	0	8	24	2	10	3	2	7	18	0	3	3	1	5	3	5	33	51
45	Wajir	0	6	47	3	12	10	0	5	60	0	8	10	0	11	10	3	42	137
46	West Pokot	2	7	0	2	7	0	6	16	0	0	7	0	0	11	0	10	48	51
	TOTAL	**57**	**452**	**1355**	**98**	**477**	**285**	**215**	**794**	**1740**	**3**	**335**	**285**	**14**	**301**	**285**	**387**	**2359**	**3950**

Table 9: Number of nurses per county part 1

No.	County	Anaesthetist Nurses			Accidents & Emergency Care Nurses			BSN Nurses			KRCHN			Community Public Health Nurses (KECHN)			Cardiology Nurses			Total Nurses		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
1	Bomet	0	12	18	2	10	30	2	8	12	171	449	468	-	-	884	0	0	0	175	479	1412
2	Bungoma	0	30	54	0	0	90	21	52	36	300	102	708	2	14	1364	0	13	0	323	211	2252
3	Busia	0	35	30	0	30	50	12	60	20	183	1152	476	243	0	900	0	10	0	438	1287	1476
4	Elgeyo Marakwet	0	17	42	0	12	70	222	56	28	186	153	664	0	12	1260	0	7	0	408	257	2064
5	Embu	3	37	28	0	15	50	115	348	28	330	305	686	1	35	1062	0	26	2	449	766	1856
6	Garissa	0	31	46	0	25	80	24	78	40	4	430	898	7	31	1442	0	11	2	35	606	2508
7	Homa Bay	0	5	72	0	0	120	3	20	48	522	0	1072	1	20	2012	0	5	0	526	50	3324
8	Isiolo	2	7	12	0	24	20	7	50	8	117	260	196	86	160	376	0	10	0	212	511	612
9	Kajiado	0	10	18	0	20	30	10	7	12	`7`	350	420	0	0	776	0	0	0	17	387	1256
10	Kakamega	0	32	70	0	24	120	30	265	56	786	2204	1342	254	21	2254	0	20	2	1070	2566	3844
11	Kericho	0	14	42	0	20	70	17	57	28	415	802	684	1	22	1328	0	14	0	433	929	2152
12	Kiambu	1	2	46	1	0	80	50	2	40	722	0	972	437	0	1566	0	0	2	1211	4	2706
13	Kilifi	0	16	30	0	15	50	9	41	20	351	488	528	48	587	1004	0	28	0	408	1175	1632
14	Kirinyaga	2	7	24	0	0	40	228	40	16	0	0	448	0	0	804	0	14	0	230	61	1332
15	Kisii	2	15	82	0	0	140	34	42	64	800	1004	1234	8	30	2114	0	14	2	844	1105	3636
16	Kisumu	0	19	64	0	10	110	41	125	52	542	308	1076	5	5	1806	0	13	2	588	480	3110
17	Kitui	0	22	66	0	20	110	22	197	44	277	482	1360	3	5	2580	0	12	0	302	738	4160
18	Kwale	2	7	18	0	8	30	11	41	12	218	222	344	1	24	652	0	7	0	232	309	1056
19	Laikipia	1	5	24	0	0	40	12	10	16	0	0	340	0	0	656	0	12	0	13	27	1076
20	Lamu	0	8	18	0	4	30	13	24	12	121	150	218	0	0	424	0	4	0	134	190	702
21	Machakos	5	37	34	2	28	60	36	50	32	0	1192	978	3	0	1574	0	4	2	46	1311	2680
22	Makueni	1	10	60	4	0	100	9	25	40	255	0	1006	185	0	1920	0	10	0	454	45	3126

No.	County	Anaesthetist Nurses			Accidents & Emergency Care Nurses			BSN Nurses			KRCHN			Community Public Health Nurses (KECHN)			Cardiology Nurses			Total Nurses		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
23	Mandera	4	12	30	0	2	50	8	40	20	384	200	484	0	15	884	0	8	0	396	277	1468
24	Marsabit	0	6	12	0	4	20	7	15	8	262	750	328	4	8	596	0	8	0	273	791	964
25	Meru	12	36	84	2	52	140	19	127	56	410	1639	1072	5	33	2056	0	42	0	448	1929	3408
26	Migori	0	34	60	0	32	100	0	20	40	0	3	860	0	2	1640	0	2	0	0	93	2700
27	Mombasa	1	12	16	0	0	30	8	30	20	419	600	472	0	0	650	0	12	2	428	654	1190
28	Murang'a	1	15	42	1	7	70	12	100	28	360	505	660	10	25	1260	0	5	0	384	657	2060
29	Nairobi	1	5	18	0	0	30	12	15	12	0	5	496	6	10	880	0	5	0	19	40	1436
30	Nakuru	2	12	52	0	0	90	46	60	44	715	1100	1106	479	1400	1834	0	0	2	1242	2572	3128
31	Nandi	0	3	30	1	12	50	15	75	20	188	245	600	8	11	1152	0	4	0	212	350	1852
32	Narok	0	9	24	1	27	40	18	48	16	192	1642	520	1	217	972	0	20	0	212	1963	1572
33	Nyamira	1	11	48	0	0	80	2	14	32	358	943	776	0	10	1408	0	6	0	361	984	2344
34	Nyandarua	0	6	12	0	10	20	8	8	8	194	205	366	164	0	636	0	0	0	366	229	1042
35	Nyeri	2	4	28	0	1	50	17	11	28	530	800	808	8	16	1250	0	13	2	557	845	2166
36	Samburu	1	7	12	0	24	20	0	24	8	60	80	232	0	0	456	0	16	0	61	151	728
37	Siaya	10	32	42	0	10	70	9	21	28	378	1688	728	0	0	1356	0	2	0	397	1753	2224
38	Taita Taveta	0	23	30	0	10	50	3	20	20	254	314	462	0	0	856	0	9	0	257	376	1418
39	Tana River	0	9	12	0	0	20	23	40	8	89	120	214	105	140	412	0	10	0	217	319	666
40	Tharaka Nithi	2	14	18	0	1	30	10	39	12	430	903	330	1	57	616	0	17	0	443	1031	1006
41	Trans Nzoia	1	11	30	0	0	50	10	29	20	175	300	410	4	6	776	0	7	0	190	353	1286
42	Turkana	2	2	36	0	0	60	2	10	24	0	1	534	0	0	1036	0	0	0	4	13	1690
43	Uasin Gishu	0	5	18	0	0	30	5	12	12	0	0	450	0	0	828	0	4	0	5	21	1338
44	Vihiga	0	10	18	0	5	30	7	24	12	275	585	342	0	20	612	0	10	0	282	654	1014
45	Wajir	1	33	60	0	0	100	10	76	40	50	44	856	30	35	1604	0	20	0	91	208	2660
46	West Pokot	0	3	0	0	20	0	5	10	0	0	0	0	0	0	0	0	5	0	5	38	0
	TOTAL	61	696	1630	13	482	2750	1184	2426	1180	10210	21635	41732	2110	1611	52528	0	483	20	13578	27333	99840

Table 10: Number of Nurses per county part 2

No.	County	Critical Care Nurses			Dental Nurses			Forensic Nurses			Renal (Nephrology) Nurses			Oncology Nurses			Ophthalmic Nurses			Total Nurses		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
1	Bomet	2	2	0	2	18	50	0	0	0	2	0	0	0	4	6	1	4	6	7	28	62
2	Bungoma	3	2	0	0	13	98	0	12	0	2	14	0	1	22	18	2	26	18	8	89	134
3	Busia	5	4	0	0	12	66	0	10	0	0	10	0	0	15	10	0	17	10	5	68	86
4	Elgeyo Marakwet	4	4	0	0	8	90	0	11	0	1	13	0	0	21	14	1	19	14	6	76	118
5	Embu	4	4	20	0	26	60	0	24	2	1	23	10	2	37	18	2	11	14	9	125	124
6	Garissa	3	3	20	0	9	106	0	9	2	0	25	10	0	16	24	1	31	20	4	93	182
7	Homa Bay	1	0	0	0	10	162	0	10	0	1	4	0	4	12	24	2	10	24	8	46	210
8	Isiolo	3	3	0	0	22	24	0	18	0	1	19	0	2	19	4	2	18	4	8	99	32
9	Kajiado	2	2	0	0	11	56	0	1	0	0	0	0	0	0	6	2	12	6	4	26	68
10	Kakamega	1	3	20	0	28	176	0	20	2	1	12	10	0	16	32	2	32	28	4	111	268
11	Kericho	3	3	0	0	18	76	0	12	0	2	23	0	4	31	14	2	25	14	11	112	104
12	Kiambu	7	0	20	0	0	118	0	0	2	2	0	10	0	0	24	7	0	20	16	0	194
13	Kilifi	5	4	0	0	30	66	0	30	0	0	28	0	5	46	10	0	23	10	10	161	86
14	Kirinyaga	3	3	0	0	9	78	0	7	0	0	48	0	0	47	8	1	37	8	4	151	94
15	Kisii	3	3	20	0	12	154	0	12	2	3	15	10	1	9	36	2	8	32	9	59	254
16	Kisumu	3	3	20	0	6	126	0	4	2	9	36	10	3	29	30	5	22	26	20	100	214
17	Kitui	3	3	0	0	23	158	0	22	0	0	49	0	3	44	22	2	37	22	8	178	202
18	Kwale	4	4	0	0	13	42	0	9	0	0	9	0	0	13	6	1	12	6	5	60	54
19	Laikipia	3	2	0	0	5	44	0	4	0	0	10	0	0	5	8	6	13	8	9	39	60
20	Lamu	3	3	0	0	4	30	0	3	0	0	6	0	0	4	6	2	6	6	5	26	42
21	Machakos	3	3	20	0	30	104	0	4	2	0	20	10	1	24	20	3	20	16	7	101	172
22	Makueni	3	2	0	0	6	126	0	6	0	0	6	0	0	6	20	1	6	20	4	32	166

No.	County	Critical Care Nurses			Dental Nurses			Forensic Nurses			Renal (Nephrology) Nurses			Oncology Nurses			Ophthalmic Nurses			Total Nurses		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
23	Mandera	2	2	0	0	6	82	0	4	0	0	6	0	0	8	10	0	14	10	2	40	102
24	Marsabit	3	3	0	0	7	46	0	5	0	0	8	0	0	8	4	7	9	4	10	40	54
25	Meru	5	5	0	1	39	156	0	34	0	0	33	0	0	42	28	5	49	28	11	202	212
26	Migori	4	4	0	0	31	120	0	1	0	1	8	0	0	22	20	4	19	20	9	85	160
27	Mombasa	3	3	20	0	10	36	0	4	2	0	4	10	0	6	14	0	7	10	3	34	92
28	Murang'a	2	3	0	0	12	86	0	3	0	2	7	0	0	8	14	3	11	14	7	44	114
29	Nairobi	1	1	0	1	6	80	0	5	0	0	5	0	2	15	6	1	5	6	5	37	92
30	Nakuru	8	27	20	0	0	126	0	0	2	7	48	10	1	3	26	6	18	22	22	96	206
31	Nandi	3	3	0	1	16	64	0	7	0	1	12	0	0	18	10	1	18	10	6	74	84
32	Narok	4	5	0	0	20	66	0	17	0	0	26	0	0	25	8	4	23	8	8	116	82
33	Nyamira	2	2	0	0	22	136	0	10	0	0	5	0	0	12	16	0	12	16	2	63	168
34	Nyandarua	0	2	0	0	8	64	0	0	0	0	0	0	0	2	4	1	12	4	1	24	72
35	Nyeri	2	2	20	0	6	88	0	6	2	0	25	10	0	6	18	2	13	14	4	58	152
36	Samburu	2	2	0	0	8	20	0	6	0	0	22	0	0	8	4	1	8	4	3	54	28
37	Siaya	4	4	0	0	4	106	0	1	0	0	1	0	0	1	14	3	22	14	7	33	134
38	Taita Taveta	4	4	0	0	14	74	0	3	0	0	7	0	0	11	10	2	15	10	6	54	94
39	Tana River	4	4	0	0	10	24	0	0	0	0	0	0	0	10	4	2	11	4	6	35	32
40	Tharaka Nithi	4	2	0	0	6	46	0	7	0	0	13	0	3	18	6	0	13	6	7	59	58
41	Trans Nzoia	3	1	0	0	4	62	0	3	0	0	13	0	0	12	10	4	18	10	7	51	82
42	Turkana	1	1	0	0	0	64	0	0	0	4	1	0	1	3	12	6	12	12	12	17	88
43	Uasin Gishu	2	1	0	0	4	60	0	2	0	2	0	0	0	6	6	0	8	6	4	21	72
44	Vihiga	3	2	0	0	22	60	0	12	0	0	8	0	1	16	6	2	17	6	6	77	72
45	Wajir	2	2	0	1	15	134	0	22	0	1	16	0	0	29	20	2	13	20	6	97	174
46	West Pokot	2	2	0	0	7	0	0	2	0	0	20	0	0	5	0	4	15	0	6	51	0
	TOTAL	133	123	200	13	622	3810	1	390	20	42	634	100	36	747	630	101	749	590	326	3265	5350

Table 11: Number of Nurses per county part 3

No.	County	Pediatrics Nurses			Neonatal Nurses			Palliative Care Nurses			Psychiatrist Nurses			Registered Midwives			Total Nurses		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per Norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
1	Bomet	0	4	6	0	0	0	0	8	12	1	12	18	161	46	138	162	70	174
2	Bungoma	0	3	18	19	42	0	0	8	36	1	6	54	42	92	258	62	151	366
3	Busia	5	37	10	0	5	0	4	27	20	14	44	30	7	171	178	30	284	238
4	Elgeyo Marakwet	2	9	14	5	20	0	1	9	28	3	26	42	0	18	242	11	82	326
5	Embu	4	25	18	139	233	0	1	21	22	3	43	44	216	166	200	363	488	284
6	Garissa	3	40	24	14	38	0	3	44	34	4	23	62	151	310	326	175	455	446
7	Homa Bay	1	5	24	0	0	0	0	10	48	2	12	72	3	10	438	6	37	582
8	Isiolo	4	23	4	91	182	0	1	29	8	5	34	12	0	0	64	101	268	88
9	Kajiado	1	26	6	0	24	0	0	2	12	5	12	18	2	18	156	8	82	192
10	Kakamega	4	44	32	0	32	0	2	20	50	10	36	86	16	38	520	32	170	688
11	Kericho	8	21	14	1	22	0	1	26	28	7	26	42	4	0	200	21	95	284
12	Kiambu	6	12	24	2	0	0	3	0	34	16	0	62	7	0	362	34	12	482
13	Kilifi	0	24	10	55	110	0	2	32	20	8	100	30	564	1024	178	629	1290	238
14	Kirinyaga	4	96	8	0	0	0	0	14	16	8	99	24	114	64	218	126	273	266
15	Kisii	4	30	36	44	128	0	2	8	58	2	71	98	5	50	446	57	287	638
16	Kisumu	12	31	30	4	12	0	5	36	46	19	44	80	10	214	374	50	337	530
17	Kitui	8	63	22	3	20	0	2	31	44	7	37	66	548	24	430	568	175	562
18	Kwale	1	61	6	0	8	0	1	24	12	2	10	18	104	143	114	108	246	150
19	Laikipia	3	7	8	4	6	0	3	15	16	10	17	24	24	20	116	44	65	164
20	Lamu	1	9	6	0	2	0	0	9	12	2	11	18	0	10	78	3	41	114
21	Machakos	6	38	20	0	0	0	1	33	26	26	69	50	11	378	328	44	518	424
22	Makueni	2	20	20	0	0	0	1	22	40	4	10	60	76	140	338	83	192	458
23	Mandera	0	24	10	0	2	0	0	17	20	0	17	30	40	103	226	40	163	286

No.	County	Pediatrics Nurses			Neonatal Nurses			Palliative Care Nurses			Psychiatrist Nurses			Registered Midwives			Total Nurses		
		Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per Norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard
24	Marsabit	1	16	4	0	4	0	0	8	8	0	8	12	28	10	130	29	46	154
25	Meru	5	102	28	24	82	0	4	39	56	14	56	84	618	480	412	665	759	580
26	Migori	4	23	20	0	20	0	2	22	40	2	34	60	0	160	320	8	259	440
27	Mombasa	0	14	14	0	6	0	0	11	14	5	15	32	10	10	136	15	56	196
28	Murang'a	3	20	14	0	10	0	7	15	28	7	28	42	460	750	230	477	823	314
29	Nairobi	2	5	6	132	20	0	1	5	12	2	5	18	1	10	228	138	45	264
30	Nakuru	3	24	26	0	0	0	1	10	38	33	96	68	29	49	382	66	179	514
31	Nandi	2	22	10	4	16	0	1	12	20	3	13	30	37	45	172	47	108	232
32	Narok	1	37	8	33	20	0	0	27	16	3	26	24	46	43	182	83	153	230
33	Nyamira	2	7	16	0	155	0	1	5	32	4	22	48	0	0	376	7	189	472
34	Nyandarua	2	6	4	0	4	0	0	8	8	6	12	12	0	20	184	8	50	208
35	Nyeri	2	13	18	2	1	0	1	9	22	9	25	44	392	999	284	406	1047	368
36	Samburu	2	28	4	0	16	0	0	30	8	0	36	12	116	150	52	118	260	76
37	Siaya	10	25	14	0	10	0	2	15	28	6	20	42	91	161	290	109	231	374
38	Taita Taveta	3	22	10	0	10	0	3	13	20	7	23	30	0	33	202	13	101	262
39	Tana River	0	60	4	0	50	0	0	8	8	0	10	12	116	40	64	116	168	88
40	Tharaka Nithi	4	22	6	0	25	0	2	14	12	3	23	18	5	35	126	14	119	162
41	Trans Nzoia	3	20	10	146	10	0	2	11	20	2	15	30	12	30	166	165	86	226
42	Turkana	1	4	12	0	4	0	1	3	24	1	188	36	0	0	168	3	199	240
43	Uasin Gishu	1	12	6	36	9	0	0	13	12	0	9	18	0	20	168	37	63	204
44	Vihiga	3	10	6	0	42	0	1	12	12	3	18	18	23	32	168	30	114	204
45	Wajir	1	14	20	158	253	0	2	14	40	3	31	60	0	15	362	164	327	482
46	West Pokot	1	15	0	0	10	0	0	10	0	2	25	0	0	0	0	3	60	0
	TOTAL	**150**	**1173**	**630**	**961**	**1765**	**0**	**65**	**759**	**1120**	**226**	**1447**	**1790**	**4084**	**6131**	**10730**	**5486**	**11275**	**14270**

Table 12: Number of Nurses per county part 4

No.	County	Sign Language Nurses			Theatre Nurses			Grand Totals-Nurses				
		Employed	Ideal as per CDH	Ideal as per Norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	%as per CDH met	%as per norms met
1	Bomet	0	3	16	4	20	30	348	600	1694	58.0	20.5
2	Bungoma	4	22	22	15	32	90	412	505	2864	81.6	14.4
3	Busia	2	17	18	2	49	50	477	1705	1868	28.0	25.5
4	Elgeyo Marakwet	0	6	24	2	16	70	427	437	2602	97.7	16.4
5	Embu	0	11	16	2	17	100	823	1407	2380	58.5	34.6
6	Garissa	2	34	30	9	40	130	225	1228	3296	18.3	6.8
7	Homa Bay	0	2	45	0	0	120	540	135	4281	400.0	12.6
8	Isiolo	1	8	6	1	18	20	323	904	758	35.7	42.6
9	Kajiado	2	7	19	1	34	30	32	536	1565	6.0	2.0
10	Kakamega	1	276	53	3	70	170	1110	3193	5023	34.8	22.1
11	Kericho	1	5	17	4	16	70	470	1157	2627	40.6	17.9
12	Kiambu	2	0	36	6	4	130	1269	20	3548	6345.0	35.8
13	Kilifi	6	267	18	8	21	50	1061	2914	2024	36.4	52.4
14	Kirinyaga	0	20	27	3	54	40	363	559	1759	64.9	20.6
15	Kisii	0	9	36	8	0	190	918	1460	4754	62.9	19.3
16	Kisumu	7	38	31	5	163	160	670	1118	4045	59.9	16.6
17	Kitui	2	17	46	2	28	110	882	1136	5080	77.6	17.4
18	Kwale	1	24	12	4	23	30	350	662	1302	52.9	26.9
19	Laikipia	3	3	10	12	6	40	81	140	1350	57.9	6.0
20	Lamu	2	6	6	6	21	30	150	284	894	52.8	16.8
21	Machakos	2	38	35	7	165	110	106	2133	3421	5.0	3.1
22	Makueni	0	6	33	2	16	100	543	291	3883	186.6	14.0

No.	County	Sign Language Nurses			Theatre Nurses			Grand Totals-Nurses				
		Employed	Ideal as per CDH	Ideal as per Norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	Employed	Ideal as per CDH	Ideal as per norm & standard	%as per CDH met	%as per norms met
23	Mandera	0	3	26	6	15	50	444	498	1932	89.2	23.0
24	Marsabit	1	13	17	2	16	20	315	906	1209	34.8	26.1
25	Meru	2	31	36	6	80	140	1132	3001	4376	37.7	25.9
26	Migori	1	18	30	6	37	100	24	492	3430	4.9	0.7
27	Mombasa	0	4	10	2	10	80	448	758	1568	59.1	28.6
28	Murang'a	1	9	22	2	15	70	871	1548	2580	56.3	33.8
29	Nairobi	0	0	31	0	0	30	162	122	1853	132.8	8.7
30	Nakuru	1	32	37	3	120	140	1334	2999	4025	44.5	33.1
31	Nandi	1	7	17	0	22	50	266	561	2235	47.4	11.9
32	Narok	2	18	21	4	52	40	309	2302	1945	13.4	15.9
33	Nyamira	1	5	44	0	0	80	371	1241	3108	29.9	11.9
34	Nyandarua	1	3	26	3	30	20	379	336	1368	112.8	27.7
35	Nyeri	2	23	30	4	48	100	973	2021	2816	48.1	34.6
36	Samburu	2	5	4	0	32	20	184	502	856	36.7	21.5
37	Siaya	2	15	32	5	23	70	520	2055	2834	25.3	18.3
38	Taita Taveta	2	13	22	7	23	50	285	567	1846	50.3	15.4
39	Tana River	2	4	6	0	20	20	341	546	812	62.5	42.0
40	Tharaka Nithi	3	8	14	3	14	30	470	1231	1270	38.2	37.0
41	Trans Nzoia	2	11	16	3	24	50	367	525	1660	69.9	22.1
42	Turkana	0	0	14	0	0	60	19	229	2092	8.3	0.9
43	Uasin Gishu	0	2	21	0	10	30	46	117	1665	39.3	2.8
44	Vihiga	1	4	21	4	16	30	323	865	1341	37.3	24.1
45	Wajir	0	2	37	2	5	100	263	639	3453	41.2	7.6
46	West Pokot	2	5	0	0	25	0	16	179	30	8.9	53.3
	TOTAL	**195**	**1022**	**1090**	**165**	**1330**	**3250**	19750	**44225**	**123800**	**44.7**	**16.0**

4.6 In-Service training to delivery Kenya Essential Package for Health (KEPH)

The assessment established the following as key in-service training areas to deliver KEPH; emergency obstetric and neonatal care (15.1%), HIV testing and counseling (14%), ARV prophylaxis for children born to HIV-positive mothers (14.0%), management of abnormal pregnancies (12.3%), HIV testing and counselling using new algorithm (11%), integrated management of childhood illness (IMCI) (6.7%), health education on appropriate maternal, infant and young child feeding (6.1%), basic life support (5.8%), cervical cancer screening for all women of reproductive health age group (4.8%), facility disaster response planning (3.8%) and event based surveillance (3.7%). The assessment further established that for the period 2012-2014, 1,840 healthcare workers were trained on key areas to deliver KEPH and 8,199 more needed to be trained.

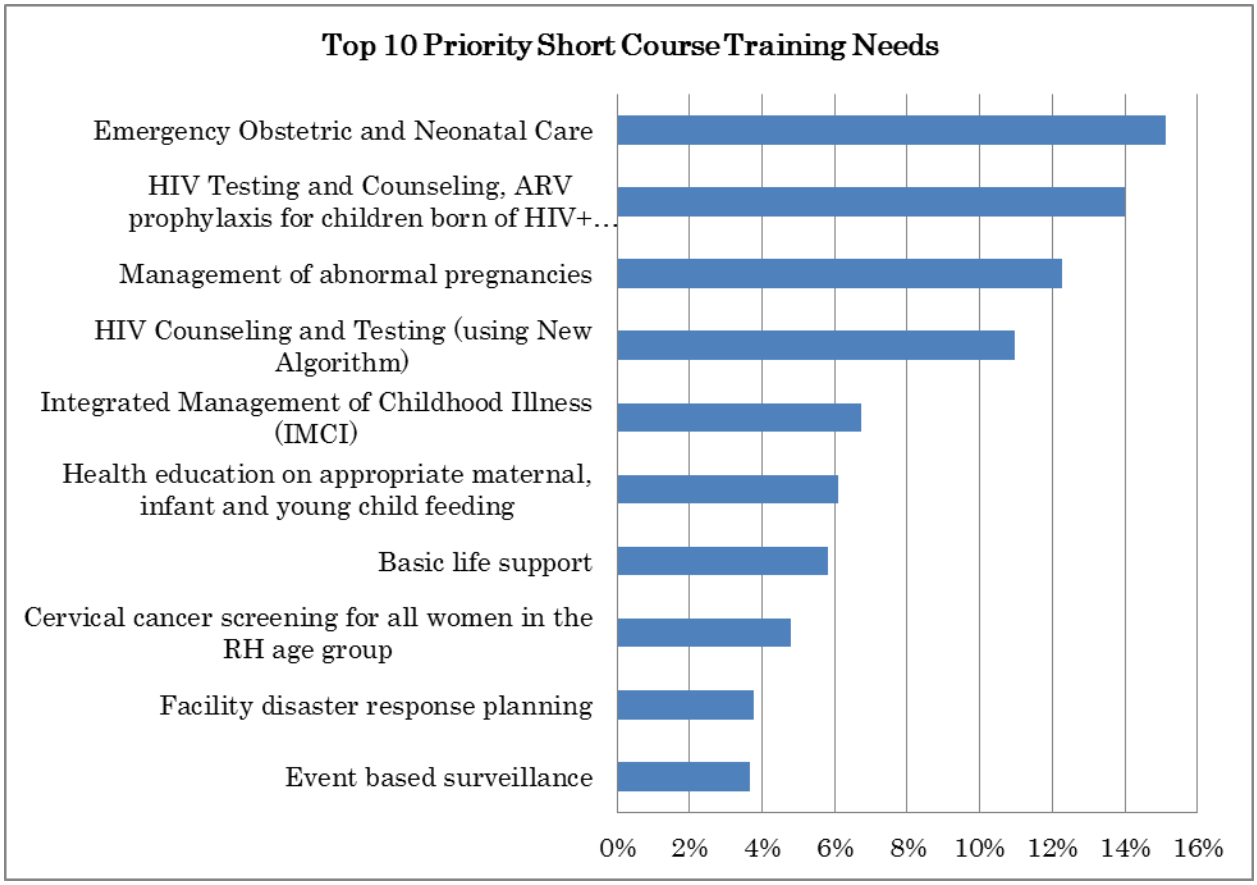

Figure 4: Top 10 National Priority Short Course training needs for the health workers

The respondents generally showed low attitude towards attending in-service training in x-ray (0%), Medical conditions management (0%), and Ultra sound scan (0%). Other typology of e training desired by the respondents is as in the Table 13 below.

Table 13: National In Service training priority needs for the health workforce

S/No.	In Service Short Course training needs as per Kenya Essential Package for Health(KEPH)	No. of staff trained in (2012-14)	Number of Staff to be trained
1	Emergency Obstetric and Neonatal Care	543	1240
2	HIV Testing and Counseling, ARV prophylaxis for children born of HIV+ mothers, HAART CPT etc	198	1148
3	Management of abnormal pregnancies	88	1006
4	HIV Counseling and Testing (using New Algorithm)	584	899
5	Integrated Management of Childhood Illness (IMCI)	2	552
6	Health education on appropriate maternal, infant and young child feeding	120	500
7	Basic life support	25	477
8	Cervical cancer screening for all women in the reproductive age	30	393
9	Facility disaster response planning	30	310
10	Event based surveillance	50	300
11	Advanced life support (level 5 hospitals only)	0	215
12	Disaster risk reduction interventions	50	200
13	Management of pregnancy complications	30	120
14	Integrated treatment of common ailments	34	119
15	Infection prevention	15	116
16	Disaster management	6	81
17	Communicating and counseling patients on substance abuse (tobacco, alcohol, cocaine, Heroine, etc)	0	56
18	Screening for drug resistant TB (level 5 hospitals only)	3	50
19	Evacuation Services for Injuries	0	48
20	Dialysis	2	44
21	Screening for Animal Transmitted Conditions	0	40
22	Management of surgical emergencies (including trauma care)	2	37
23	Post Exposure Prophylaxis	12	37
24	Occupational health and safety	0	34
25	Respiratory conditions management	0	30
26	Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film)	0	24
27	Management of medical emergencies	2	24
28	Management of pediatric in patients	0	24
29	Ear Nose and Throat conditions management	0	15
30	Chemotherapy	0	10
31	Focused Antenatal Care	10	10
32	Integrated Management of Acute Malnutrition(IMAM)	1	10
33	HIV/AIDS management	2	8
34	Outbreak investigation	0	7
35	Food safety & quality control	0	6
36	Infectious disease control	1	5
37	Ultra sound scan	0	2
38	Medical conditions management	0	1
39	X – ray	0	1
	Total	**1,840**	**8,199**

Analysis of the top 10 priorities in-service training needs to deliver KEPH per county is contained in Annex 2 of this report. An investigation on the trend of the top three priority per county reveals that Emergency Obstetric and Neonatal Care (EmONC) is among the top priority In Service Short Course training needs of 29 counties while HIV Testing and Counseling, ARV prophylaxis for children born of HIV+ mothers is among the top priority of 23 counties. Last but not least, management of abnormal pregnancies is the top priority need of 13 Counties.

Table 14: The top 3 priority national Short Course training needs per county to address KEPH

County	Top 3 Priority Short Course training needs		
	Emergency Obstetric and Neonatal Care	HIV Testing and Counseling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counseling on best breastfeeding and complementary feeding practices in HIV	Management of abnormal pregnancies
Bomet	✓		
Busia		✓	
Elgeyo Marakwet	✓		✓
Embu	✓	✓	
Garissa	✓		
Homa Bay	✓		
Kajiado	✓	✓	
Kakamega	✓		
Kericho	✓		
Kiambu	✓	✓	
Kilifi	✓		✓
Kirinyaga		✓	
Kisii	✓		
Kisumu	✓	✓	
Kitui	✓		✓
Kwale	✓	✓	✓
Laikipia	✓	✓	
Lamu		✓	
Machakos	✓	✓	✓
Mandera	✓		✓
Marsabit	✓		
Meru		✓	
Migori	✓	✓	
Mombasa	✓		
Murang'a	✓		✓
Nairobi		✓	
Nandi	✓		✓
Narok		✓	
Nyamira		✓	
Nyandarua			✓
Samburu	✓	✓	
Siaya	✓	✓	✓
Taita Taveta	✓	✓	
Tana River		✓	
Tharaka Nithi	✓	✓	✓

County	Top 3 Priority Short Course training needs		
	Emergency Obstetric and Neonatal Care	HIV Testing and Counseling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counseling on best breastfeeding and complementary feeding practices in HIV	Management of abnormal pregnancies
Trans Nzoia	✓	✓	
Turkana	✓	✓	✓
Uasin Gishu		✓	
Vihiga		✓	
Wajir	✓		✓
West Pokot	✓		

4.7 Assessment of County Department of Health (CDoH) and County Health Management Team (CHMT) on Leadership, Management and Governance

The assessment sought to identify the management skills gaps of the County Directors of Health (CDH) and County Health Management Teams (CHMTs). The findings presented in this section are a subset of questionnaires in all 47 counties except Baringo County as shown in the Table 15 below.

Table 15: Number of CDoH Staff

County	Total No. Of Staff	No. Staff who are members of CHMT	No. Staff who are members of SCHMT too
Bomet	32	16	2
Bungoma	36	16	7
Busia	64	22	15
Elgeyo Marakwet	41	10	9
Embu	58	14	2
Garissa	21	6	0
Homa Bay	36	13	13
Isiolo	54	18	0
Kajiado	45	11	0
Kakamega	49	15	5
Kilifi	77	20	20
Kisii	26	2	0
Kisumu	69	20	0
Kitui	63	19	19
Kwale	46	11	0
Laikipia	20	7	0
Lamu	36		

County	Total No. Of Staff	No. Staff who are members of CHMT	No. Staff who are members of SCHMT too
Machakos	92	18	9
Makueni	59	18	7
Mandera	13	6	0
Marsabit	47	18	3
Meru	69	14	14
Migori	45	20	5
Mombasa	34	14	4
Muranga	37	18	8
Nairobi	24	0	0
Nakuru	74	16	1
Nandi	53	20	8
Narok	41	16	4
Nyamira	37	18	6
Nyandarua	36	18	16
Nyeri	60	17	0
Samburu	28	14	4
Siaya	48	21	7
Taita Taveta	72	21	9
Tana River	73	16	12
Tharaka Nithi	64	18	16
Turkana	27	26	0
Uasin Gishu	27	5	5
Vihiga	44	7	1
Wajir	12	5	0
West Pokot	39	17	17
Kiambu		25	10
Grand Total	**2052**	**635**	**248**

From the finding of this study, the high priority short course management training for the county department of health include the following; Leadership and management (24%), senior Management training on health (17%), supervisory skills management (8%), Strategic Planning leadership (7%), human resource management (7%), Computer/ICT Literacy (7%), financial management (7%), planning and budgeting (7%) and Monitoring & Evaluation (4%). (Figure 5).

Figure 5: Most urgent Short Course Management training programmes for CDoH

This study sought to find out if there were officers responsible for various functions of management in planning and M& E, standards, quality assurance and regulations and lastly, administration and management support. Findings in relation to planning and M& E show that majority number of the counties (12) had almost all staff required in planning and M& E except Kisumu and Kitui who had none while Elgeyo Marakwet, Kwale and Trans Nzoia had one each. Mombasa and Nyandarua had (2) as Lamu and West Pokot had three (3) each. This shows that most counties consider M&E an important area of concern and any deficiencies in planning and M & E may be due to lack of capacity building rather than lack of staff (Table 17).

Table 16: Number of staff responsible for various functions of M&E

County	Planning and M&E							
	Health Information	Planning and Budgeting	M&E	Health care financing and social protection	Resource mobilization	ICT (e-health)	Public private partnership	Total
Bomet	1	1	1	1	1	1	1	7
Bungoma	0	1	1	1	0	0	1	4
Busia	1	1	1	1	1	1	1	7
Elgeyo Marakwet	0	1	0	0	0	0	0	1
Embu	1	1	1	1	1	1	1	7
Garissa	1	1	1	1	1	1	1	7
Homabay								
Isiolo	1	1	1	1	1	1	1	7
Kajiado	1	1	1	1	1	0	1	6
Kakamega	1	1	1	1	1	1	1	7
Kericho	1	1	1	1	1	1	1	7
Kiambu								
Kilifi	1	1	1	1	1	1	1	7
Kirinyaga	0	1	1	1	0	1	1	5
Kisii	1	1	1	1	0	1	0	5
Kisumu	0	0	0	0	0	0	0	0
Kitui	0	0	0	0	0	0	0	0
Kwale	0	0	0	0	0	0	1	1
Laikipia	1	1	1	0	1	1	1	6
Lamu	0	0	0	1	0	1	1	3
Machakos	1	1	1	1	1	1	1	7
Makueni	0	0	1	0	1	1	1	4
Mandera	0	0	0	0	0	0	0	0
Marsabit	1	1	1	1	1	1	1	7
Meru	1	1	1	1	1	1	1	7
Migori	1	1	1	1	1	1	1	7
Mombasa	0	1	1	0	0	0	0	2
Muranga	1	1	1	1	1	1	1	7
Nairobi								
Nakuru								
Nandi	1	1	1	1	1	1	1	7
Narok	1	1	1	1	1	1	1	7
Nyamira	1	1	1	1	1	1	1	7
Nyandarua	1	0	1	0	0	0	0	2
Nyeri	1	1	1	1	1	1	1	7
Samburu	1	1	1	1	1	1	1	7

County	Planning and M&E							
	Health Information	Planning and Budgeting	M&E	Health care financing and social protection	Resource mobilization	ICT (e-health)	Public private partnership	Total
Siaya	0	0	0	0	0	0	0	0
Taita Taveta	1	1	1	1	1	1	1	7
Tana River	1	1	1	1	1	1	1	7
Tharaka Nithi	0	0	1	1	1	1	1	5
Trans Nzoia	1	0	0	0	0	0	0	1
Turkana	1	1	1	1	1	1	1	7
Uasin Gishu	0	0	0	0	0	0	0	0
Vihiga	1	1	0	1	1	1	1	6
Wajir	1	1	1	1	1	1	1	7
West Pokot	1	0	1	0	0	1	0	3
Total	**29**	**30**	**32**	**29**	**27**	**30**	**31**	**208**

In terms of Standards, Quality Assurance and Regulations, ten counties namely Kisii, Kisumu, Kitui, Kwale, Lamu, Mandera, Mombasa, Trans Nzoia, Uasin Gishu and Vihiga did not have any standards, quality assurance and regulation staff while Nyandarua and Siaya had 1 and 2 respectively (Table 18). These findings demonstrate that majority of the counties do not check on standards and regulations and hence may lack structures of quality assurance.

Table 17: Number of staff responsible for standards, quality assurance and regulations

County	Standards, Quality Assurance and Regulations					
	Conducting evidence based research	Participate in reviewing national standards and SOPs	Ensuring compliance with national standards and SOPs	Quality assurance	Legal and regulatory procedures including inspections	Total
Bomet	1	1	1	1	1	**5**
Bungoma	1	0	0	1	1	**3**
Busia	1	1	1	1	1	**5**
Elgeyo Marakwet	0	1	1	1	1	**4**
Embu	1	1	1	1	1	**5**
Garissa	1	1	1	1	1	**5**
Homabay						
Isiolo	1	1	1	1	1	**5**
Kajiado	1	1	1	0	1	**4**
Kakamega	1	1	1	1	1	**5**
Kericho	1	1	1	1	1	**5**
Kiambu	1	1	1	1	1	**5**
Kilifi	1	1	1	1	1	**5**
Kirinyaga	1	0	0	1	1	**3**

County	Standards, Quality Assurance and Regulations					
	Conducting evidence based research	**Participate in reviewing national standards and SOPs**	**Ensuring compliance with national standards and SOPs**	**Quality assurance**	**Legal and regulatory procedures including inspections**	**Total**
Kisii	0	0	0	0	0	**0**
Kisumu	0	0	0	0	0	**0**
Kitui	0	0	0	0	0	**0**
Kwale	0	0	0	0	0	**0**
Laikipia	1	1	1	1	0	**4**
Lamu	0	0	0	0	0	**0**
Machakos	1	1	1	1	1	**5**
Makueni	1	1	1	1	0	**4**
Mandera	0	0	0	0	0	**0**
Marsabit	1	1	1	1	1	**5**
Meru	1	1	1	1	1	**5**
Migori	1	1	1	1	1	**5**
Mombasa	0	0	0	0	0	**0**
Muranga	1	1	1	1	1	**5**
Nairobi						
Nakuru						
Nandi	1	1	1	1	1	**5**
Narok	1	1	1	1	1	**5**
Nyamira	1	1	1	1	1	**5**
Nyandarua	0	0	1	0	0	**1**
Nyeri	1	1	1	1	1	**5**
Samburu	1	1	1	1	1	**5**
Siaya	1	0	0	1	0	**2**
Taita Taveta	1	1	1	1	1	**5**
Tana River	1	1	1	1	1	**5**
Tharaka Nithi	1	0	1	0	1	**3**
Trans Nzoia	0	0	0	0	0	**0**
Turkana	1	1	1	1	1	**5**
Uasin Gishu	0	0	0	0	0	**0**
Vihiga	0	0	0	0	0	**0**
Wajir	1	1	1	1	1	**5**
West Pokot	1	0	0	1	1	**3**
Total	**30**	**26**	**28**	**29**	**28**	**141**

In terms of Administration and Management support, findings show that Migori has an outstanding number (18) of staff in Administrative and Management support compared to the other counties namely: Bomet; Busia; Embu; Garissa; Isiolo; Kericho; Kilifi; Kirinyaga; Kisii;

Marsabit and Muranga that had 9 each (Table 19). The TNA also revealed that ten counties namely: Kajiado, Kakamega, Kisumu, Kitui, Kwale, Mandera, Nyandarua, Siaya, Muranga and Uasin Gishi do not have staff in Administration and Management.

Table 18: Number of staff responsible for administration and management support

County	Administration and Management Support									
	HRM	**HRD**	**Accounts**	**Infrastructure and maintenance**	**Procurement**	**HFM**	**ICT**	**Security- of officers, data, information, assets**	**Public relations and customer care**	**Total**
Bomet	1	1	1	1	1	1	1	1	1	**9**
Bungoma	0	0	0	1	0	1	0	0	0	**2**
Busia	1	1	1	1	1	1	1	1	1	**9**
Elgeyo Marakwet	1	0	1	0	1	1	1	1	1	**7**
Embu	1	1	1	1	1	1	1	1	1	**9**
Garissa	1	1	1	1	1	1	1	1	1	**9**
Homabay										
Isiolo	1	1	1	1	1	1	1	1	1	**9**
Kajiado	0	0	0	0	0	0	0	0	0	**0**
Kakamega	0	0	0	0	0	0	0	0	0	**0**
Kericho	1	1	1	1	1	1	1	1	1	**9**
Kiambu	0	0	1	1	1	1	1	1	1	**7**
Kilifi	1	1	1	1	1	1	1	1	1	**9**
Kirinyaga	1	1	1	1	1	1	1	1	1	**9**
Kisii	1	1	1	1	1	1	1	1	1	**9**
Kisumu	0	0	0	0	0	0	0	0	0	**0**
Kitui	0	0	0	0	0	0	0	0	0	**0**
Kwale	0	0	0	0	0	0	0	0	0	**0**
Laikipia	1	1	1	1	1	0	1	1	1	**8**
Lamu	0	1	0	0	0	0	0	0	0	**1**
Machakos	1	1	1	1	1	0	1	1	1	**8**
Makueni	0	0	0	0	0	0	1	0	0	**1**
Mandera	0	0	0	0	0	0	0	0	0	**0**
Marsabit	1	1	1	1	1	1	1	1	1	**9**
Meru	1	1	1	1	1	1	1	1	0	**8**
Migori	2	2	2	2	2	2	2	2	2	**18**
Mombasa	0	0	0	0	0	0	1	0	1	**2**
Muranga	1	1	1	1	1	1	1	1	1	**9**
Nairobi										
Nakuru										
Nandi	1	1	1	1	1	1	1	1	1	**9**

County	Administration and Management Support									
	HRM	HRD	Accounts	Infrastructure and maintenance	Procurement	HFM	ICT	Security- of officers, data, information, assets	Public relations and customer care	Total
Narok	1	1	1	1	1	1	1	0	1	**8**
Nyamira	1	1	1	1	1	1	1	0	0	**7**
Nyandarua	1	0	3	0	0	0	0	0	0	**4**
Nyeri	1	1	1	1	1	1	1	1	1	**9**
Samburu	1	1	1	1	1	1	1	1	1	**9**
Siaya	0	0	0	0	0	0	0	0	0	**0**
Taita Taveta	1	1	1	1	1	1	1	1	1	**9**
Tana River	1	1	1	1	1	1	1	1	1	**9**
Tharaka Nithi	1	1	0	1	1	0	1	1	1	**7**
Trans Nzoia	1	1	1	0	1	1	0	0	0	**5**
Turkana	1	1	0	1	1	1	1	1	1	**8**
Uasin Gishu	0	0	0	0	0	0	0	0	0	**0**
Vihiga	1	1	1	0	1	0	1	0	0	**5**
Wajir	1	1	1	1	1	1	1	1	1	**9**
West Pokot	1	0	1	0	1	0	1	0	0	**4**
Total	**30**	**29**	**28**	**27**	**30**	**26**	**31**	**25**	**26**	**252**

HRM – Human Resource Management; HRD – Human Resource Development; HFM – Health Facility Management

4.8 Satisfaction, Experience and Confidence level of the County Health Directors of Health

This study also enquired on the satisfaction level of the CDH on the CHMT performance on the key domain areas of management that ensure effective and efficient service delivery as summarized in Table 19. Of the domains enquired of, intradepartmental coordination (within CDoH) and service delivery at Hospital (level 4-5) had the highest satisfaction in performance at 50% and 43.6% were satisfied respectively. Health research had 42.5% not satisfied at all. Most of the domain areas were averagely sometimes satisfying in performance. Other domain areas were a little satisfying according to the findings included planning & budgeting, monitoring & evaluation, human resource development and public private partnerships (PPP). These domain areas will require training to improve on the performance of the staff.

Table 19: Satisfaction about CHMT work perceived by CDH

Activity	Not satisfied at all	A little satisfied	Sometimes satisfied	More satisfied	Very Satisfied	Total
Planning and Budgeting	0 (0.0%)	12 (30.0%)	**16 (40.0%)**	10 (25.0%)	2 (5.0%)	40 (100%)
Monitoring and Evaluation	2 (5.0%)	8 (20.0%)	**23 (57.5%)**	5 (12.5%)	2 (5.0%)	40 (100%)
Health Information Management	0 (0.0%)	4 (10.3%)	**18 (46.2%)**	16 (41.0%)	1 (2.6%)	39 (100%)
Health Research	**17 (42.5%)**	13 (32.5%)	7 (17.5%)	3 (7.5%)	0 (0.0%)	40 (100%)
Financial Management	1 (2.6%)	9 (23.1%)	**19 (48.7%)**	9 (23.1%)	1 (2.6%)	39 (100%)
Human Resource Management	3 (7.7%)	9 (23.1%)	**19 (48.7%)**	7 (17.9%)	1 (2.6%)	39 (100%)
Human Resource Development	5 (12.8%)	**17 (43.6%)**	13 (33.3%)	4 (10.3%)	0 (0.0%)	39 (100%)
Communication	2 (5.3%)	7 (18.4%)	**23 (60.5%)**	5 (13.2%)	1 (2.6%)	38 (100%)
Intra-departmental Coordination (within CDoH)	0 (0.0%)	3 (7.9%)	13 (34.2%)	**19 (50.0%)**	3 (7.9%)	38 (100%)
Inter-departmental Coordination (with other sectors)	0 (0.0%)	6 (16.2%)	**17 (45.9%)**	13 (35.1%)	1 (2.7%)	37 (100%)
Public Private Partnerships(PPP)	3 (8.1%)	**13 (35.1%)**	**13 (35.1%)**	6 (16.2%)	2 (5.4%)	37 (100%)
Supervision and Mentorship	0 (0.0%)	7 (17.9%)	**19 (48.7%)**	10 (25.6%)	3 (7.7%)	39 (100%)
Service Delivery at Community level (Level 1)	1 (2.6%)	12 (30.8%)	**18 (46.2%)**	7 (17.9%)	1 (2.6%)	39 (100%)
Service Delivery at Primary Health Care facility level (Level 2-3)	0 (0.0%)	3 (7.7%)	**19 (48.7%)**	14 (35.9%)	3 (7.7%)	39 (100%)
Service Delivery at Hospital level (Level 4-5)	0 (0.0%)	5 (12.8%)	15 (38.5%)	**17 (43.6%)**	2 (5.1%)	39 (100%)
Health Promotion	0 (0.0%)	10 (25.6%)	**16 (41.0%)**	12 (30.8%)	1 (2.6%)	39 (100%)
Quality Management	2 (5.4%)	6 (16.2%)	**22 (59.5%)**	6 (16.2%)	1 (2.7%)	37 (100%)
Commodity Procurement and Management	2 (5.3%)	6 (15.8%)	**16 (42.1%)**	11 (28.9%)	3 (7.9%)	38 (100%)
Infrastructure Management	4 (10.3%)	6 (15.4%)	**18 (46.2%)**	10 (25.6%)	1 (2.6%)	39 (100%)
Emergency Preparedness and Response	3 (7.9%)	9 (23.7%)	**20 (52.6%)**	5 (13.2%)	1 (2.6%)	38 (100%)

The findings show that there are very few County Directors of Health who are satisfied with their CHMT performance in all areas as clearly demonstrated in the figure below while most of them had little satisfaction in almost all critical areas of management such as planning & budgeting, M&E, health research, human resource management and development, PPP and service delivery at community level.

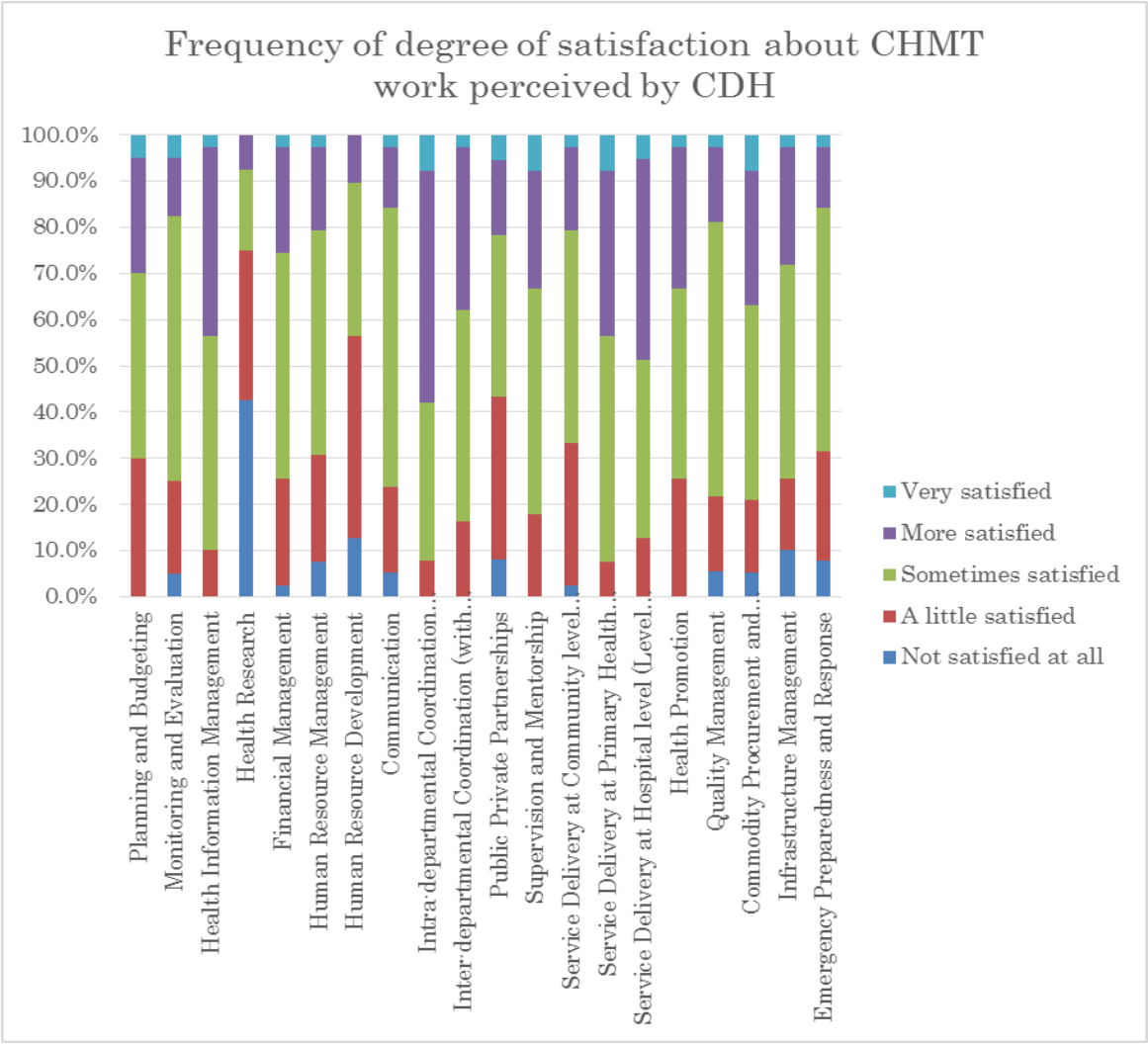

Figure 6: Frequency of degree of satisfaction about CHMT

The middle point in the Likert scale question stated that the CDH was sometimes satisfied implying that "more satisfied" is the positive affirmation from the CDH on the perception of CHMT performance and hence cutoff point is an average of (3.50). From the findings, the level of satisfaction by CDH was only in the area of Intra-departmental Coordination within the CDoH (Table 20).

Table 20: Level of satisfaction of the CDH on CHMTs' performance

Satisfaction about CHMT work perceived by CDH	Average
Intra-departmental Coordination (within CDoH)	3.58
Cut off marks	3.50
Service Delivery at Primary Health Care facility level (Level 2-3)	3.44
Service Delivery at Hospital level (Level 4-5)	3.41
Health Information Management	3.36
Inter-departmental Coordination (with other sectors)	3.24
Supervision and Mentorship	3.23
Commodity Procurement and Management	3.18
Average	3.15
Health Promotion	3.10
Planning and Budgeting	3.05
Financial Management	3.00
Infrastructure Management	2.95
Quality Management	2.95
Monitoring and Evaluation	2.93
Communication	2.89
Service Delivery at Community level (Level 1)	2.87
Human Resource Management	2.85
Emergency Preparedness and Response	2.79
Public Private Partnerships	2.76
Human Resource Development	2.41
Health Research	1.90

In relation to the level of experience in management domain, this study enquired on the level of experience of the County Directors in key domain areas of management.

In table 22, among the domains enquired of the County Directors, intra-departmental coordination had the highest level of experience at (63.2%) and strategic planning at (50%) respectively. It is important to note that at least 10% of the County Directors revealed they were experts in strategic management. More than half (55.3%) were not experienced in negotiation and conflict resolutions , monitoring & evaluation and project management at 52.6% and 51.4% respectively. Other areas of concern included human resource management (46.2%), human resource development (45.9) and budget & financial Management (39.5%).

Table 21: Frequency of Experience of CDH

	No experience at all	Rarely	Some Experience	Good Experience	I am an Expert	Total
Strategic Planning	0 (0.0%)	1 (2.6%)	14 (36.8%)	**19 (50.0%)**	4 (10.5%)	38 (100%)
Budgeting and Overall Financial Management	1 (2.6%)	4 (10.5%)	**15 (39.5%)**	**15 (39.5%)**	3 (7.9%)	38 (100%)
Overall Monitoring and Evaluation	0 (0.0%)	1 (2.6%)	**20 (52.6%)**	15 (39.5%)	2 (5.3%)	38 (100%)
Intra-departmental Coordination	0 (0.0%)	0 (0.0%)	11 (28.9%)	**24 (63.2%)**	3 (7.9%)	38 (100%)
Project/Program Management	0 (0.0%)	2 (5.4%)	**19 (51.4%)**	14 (37.8%)	2 (5.4%)	37 (100%)
Organizational Human Resource Management	0 (0.0%)	5 (12.8%)	**18 (46.2%)**	14 (35.9%)	1 (2.6%)	38 (100%)
Strategic Human Resource Development	2 (5.4%)	9 (24.3%)	**17 (45.9%)**	8 (21.6%)	1 (2.7%)	37 (100%)
Negotiation and Conflict Resolution	3 (7.9%)	7 (18.4%)	**21 (55.3%)**	6 (15.8%)	1 (2.6%)	38 (100%)
Leadership and Guidance	0 (0.0%)	0 (0.0%)	12 (31.6%)	**22 (57.9%)**	4 (10.5%)	38 (100%)
Intre-departmental Coordination (with other sectors)	0 (0.0%)	3 (7.9%)	**19 (50.0%)**	15 (39.5%)	1 (2.6%)	38 (100%)

The figure 7 below gives a snap shot of the level of experience of the County Directors of Health. The findings show that majority of the CDH have some experience or almost no experience on most domains of management.

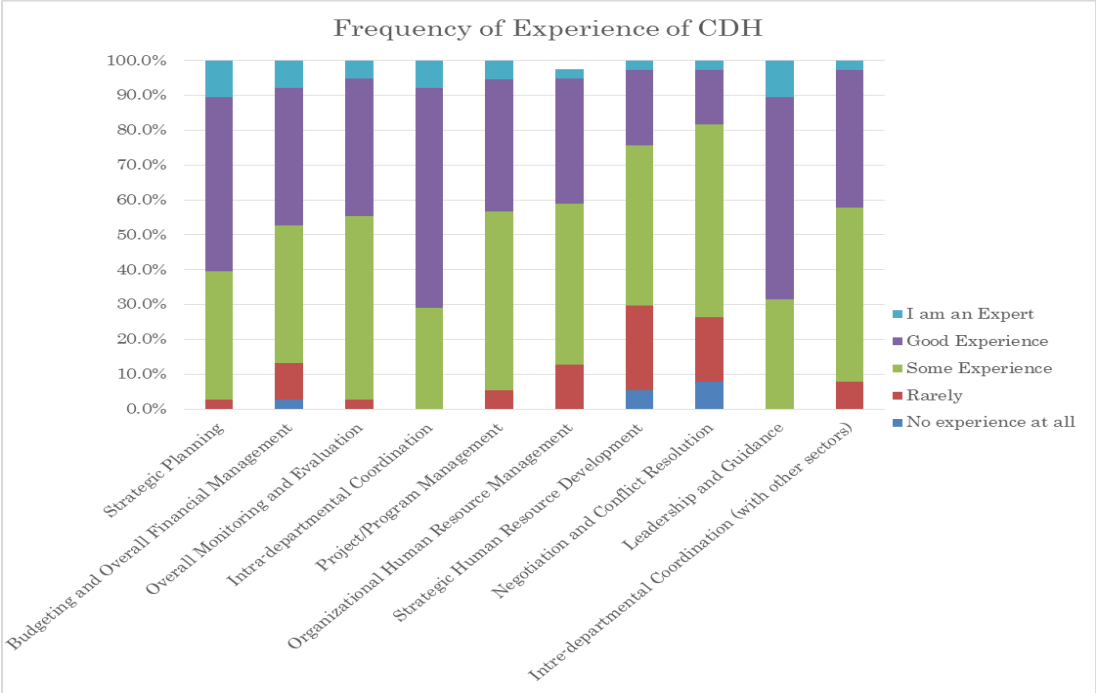

Figure 7: Frequency of experience of CDH

From the above findings, the CDH show that their experience in Intra-Departmental Coordination, leadership & guidance and strategic planning are the only domains that are above the threshold while monitoring & evaluation and project management are barely above average.

Table 22: Level of experience on CDH

Experience of CDH	Average
Intra-departmental Coordination	3.79
Leadership and Guidance	3.79
Strategic Planning	3.68
Cut off Mark	3.50
Overall Monitoring and Evaluation	3.47
Project/Program Management	3.43
Average	3.41
Budgeting and Overall Financial Management	3.39
Inter-departmental Coordination (with other sectors)	3.37
Organizational Human Resource Management	3.29
Strategic Human Resource Development	2.92
Negotiation and Conflict Resolution	2.87

In relation to the level of confidence in management domain, this study enquired on the level of confidence of the county directors in key domain areas of management. Of the domains enquired of the highest level of confidence was in Leadership and Guidance (66.7%), Intra-departmental Coordination (50%) human resource management and strategic planning at (47.4%) and (46.2%) respectively. This is consistent with the findings in their experience level where Intra-departmental coordination and strategic plan are some of the leading domains. Other domains that had little confidence were Organizational Human Resource Development (37.1%), Budget and Financial Management (23.7%), Negotiation and Conflict Resolution and Project/Program Management that had 15.2% respectively.

Table 23: Frequency of Confidence of CDH

	Not Confident at all	A little confident	Sometimes confident	More confident	Very confident	Total
Strategic Planning	1 (2.6%)	7 (17.9%)	8 (20.5%)	**18 (46.2%)**	5 (12.8%)	39 (100%)
Budgeting and Overall Financial Management	0 (0.0%)	9 (23.7%)	**14 (36.8%)**	13 (34.2%)	2 (5.3%)	38 (100%)
Overall Monitoring and Evaluation	0 (0.0%)	5 (13.5%)	13 (35.1%)	**16 (43.2%)**	3 (8.1%)	37 (100%)
Intra-departmental Coordination	0 (0.0%)	3 (7.9%)	11 (28.9%)	**19 (50.0%)**	5 (13.2%)	38 (100%)
Project/Program Management	1 (2.6%)	6 (15.8%)	**15 (39.5%)**	13 (34.2%)	3 (7.9%)	38 (100%)
Organizational Human Resource Management	1 (2.6%)	6 (15.8%)	11 (28.9%)	**18 (47.4%)**	2 (5.3%)	38 (100%)
Strategic Human Resource Development	1 (2.9%)	13 (37.1%)	**14 (40.0%)**	6 (17.1%)	1 (2.9%)	35 (100%)
Negotiation and Conflict Resolution	4 (12.1%)	5 (15.2%)	10 (30.3%)	**13 (39.4%)**	1 (3.0%)	33 (100%)
Leadership and Guidance	0 (0.0%)	1 (2.8%)	5 (13.9%)	**24 (66.7%)**	6 (16.7%)	36 (100%)
Intre-departmental Coordination (with other sectors)	0 (0.0%)	5 (14.3%)	12 (34.3%)	**15 (42.9%)**	3 (8.6%)	35 (100%)

A snap shot of the findings in the figure 8 shows that majority of the CDH were less confident in most domains of management.

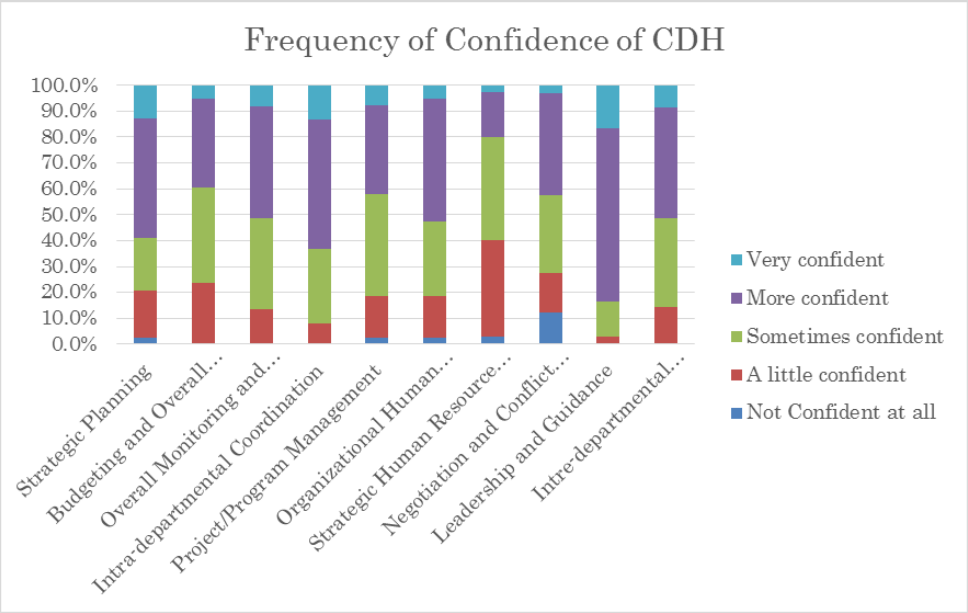

Figure 8: Frequency of confidence of (CDH)

From the above findings, Intra-departmental coordination, leadership and guidance are the only domains that the CDH had high level of confidence above the threshold while strategic planning, monitoring & evaluation, inter-departmental coordination (with other sectors) and human resource management are barely above average (Table 24).

Table 24: Level of confidence of CDH

Confidence of CDH	Average
Leadership and Guidance	3.97
Intra-departmental Coordination	3.68
Cut off	3.5
Strategic Planning	3.49
Overall Monitoring and Evaluation	3.46
Inter-departmental Coordination (with other sectors)	3.46
Organizational Human Resource Management	3.37
Average	3.31
Project/Program Management	3.29
Budgeting and Overall Financial Management	3.21
Negotiation and Conflict Resolution	3.06
Strategic Human Resource Development	2.80

4.9 Experience and confidence level of County Health Management Teams

This study also enquired on the level experience of the CHMT key domain areas of management that ensure effective and efficient service delivery as summarized in below. Of the domains

enquired of, Health Information Management is the only domain the CHMT reported to have highest level of experience at (45.5%) as it is a routine area of domain while they have frequent Intra-departmental Coordination (within CDoH) at (46.5%). The findings showed poor experience in all the other domains of management (Table 25).

Table 25: Frequency of Experience of CHMT

	Not done at all	**Rarely Done**	**Sometimes done**	**Frequently done**	**Routinely done**	**Total**
Planning and Budgeting	2 (4.5%)	3 (6.8%)	9 (20.5%)	**15 (34.1%)**	15 (34.1%)	44 (100%)
Monitoring and Evaluation	1 (2.3%)	4 (9.1%)	10 (22.7%)	**16 (36.4%)**	13 (29.5%)	44 (100%)
Health Information Management	0 (0.0%)	1 (2.3%)	8 (18.2%)	15 (34.1%)	**20 (45.5%)**	44 (100%)
Health Research	**17 (39.5%)**	**17 (39.5%)**	6 (14.0%)	2 (4.7%)	1 (2.3%)	43 (100%)
Financial Management	2 (4.7%)	8 (18.6%)	9 (20.9%)	9 (20.9%)	**15 (34.9%)**	43 (100%)
Human Resource Management	1 (2.3%)	4 (9.1%)	13 (29.5%)	9 (20.5%)	**17 (38.6%)**	44 (100%)
Human Resource Development	2 (4.7%)	12 (27.9%)	**14 (32.6%)**	11 (25.6%)	4 (9.3%)	43 (100%)
Communication	0 (0.0%)	2 (4.5%)	11 (25.0%)	**16 (36.4%)**	15 (34.1%)	44 (100%)
Intra-departmental Coordination (within CDoH)	1 (2.3%)	2 (4.7%)	6 (14.0%)	**20 (46.5%)**	14 (32.6%)	43 (100%)
Inter-departmental Coordination (with other sectors)	1 (2.3%)	4 (9.1%)	**16 (36.4%)**	**16 (36.4%)**	7 (15.9%)	44 (100%)
Public Private Partnerships	0 (0.0%)	7 (15.9%)	**20 (45.5%)**	10 (22.7%)	7 (15.9%)	44 (100%)
Supervision and Mentorship	0 (0.0%)	2 (4.7%)	**22 (51.2%)**	9 (20.9%)	10 (23.3%)	43 (100%)
Service Delivery at Community level (Level 1)	0 (0.0%)	3 (6.8%)	12 (27.3%)	14 (31.8%)	**15 (34.1%)**	44 (100%)
Service Delivery at Primary Health Care facility level (Level 2-3)	0 (0.0%)	1 (2.3%)	3 (7.0%)	18 (41.9%)	**21 (48.8%)**	43 (100%)
Service Delivery at Hospital level (Level 4-5)	0 (0.0%)	1 (2.3%)	5 (11.4%)	14 (31.8%)	**24 (54.5%)**	44 (100%)
Health Promotion	1 (2.3%)	4 (9.1%)	12 (27.3%)	**17 (38.6%)**	10 (22.7%)	44 (100%)
Quality Management	0 (0.0%)	12 (27.9%)	**14 (32.6%)**	13 (30.2%)	4 (9.3%)	43 (100%)
Commodity Procurement and Management	0 (0.0%)	4 (9.1%)	11 (25.0%)	14 (31.8%)	**15 (34.1%)**	44 (100%)
Infrastructure Management	2 (4.5%)	8 (18.2%)	**17 (38.6%)**	11 (25.0%)	6 (13.6%)	44 (100%)
Emergency Preparedness and Response	1 (2.3%)	15 (34.1%)	**16 (36.4%)**	10 (22.7%)	2 (4.5%)	44 (100%)

Table 26 shows CHMT met the threshold in most management domains that are related to clinical and service delivery, while they failed to meet the threshold in other domains related to management. This clearly indicates a need for capacity building in domains such as financial management, PPP, health research, quality management, human resource development, emergency preparedness and response and health research.

Table 26: Level of experience of the CHMT

Experience of CHMT	Average
Service Delivery at Primary Health Care facility level (Level 2-3)	3.88
Service Delivery at Hospital level (Level 4-5)	3.84
Health Information Management	3.77
Intra-departmental Coordination (within CDoH)	3.70
Service Delivery at Community level (Level 1)	3.59
Commodity Procurement and Management	3.57
Planning and Budgeting	3.52
Monitoring and Evaluation	3.52
Cutting point	3.50
Health Promotion	3.48
Human Resource Management	3.45
Supervision and Mentorship	3.40
Inter-departmental Coordination (with other sectors)	3.39
Average	3.34
Financial Management	3.28
Public Private Partnerships	3.23
Quality Management	3.12
Infrastructure Management	3.11
Human Resource Development	2.98
Emergency Preparedness and Response	2.89
Health Research	1.88

In relation to the level of confidence in management domain, this study enquired on the levels of confidence of the CHMT in key domain areas of management as summarized in Table 27, of the domains enquired of, most of the CHMT had no confidence in performing their duties with only 41.5% indicating that they were more confident in health promotion while 40.9% indicated being confident in communication. Majority of the CHMT reported to have less confidence, a little confidence or no confidence at all in most of the management domains as follows: Human Resource Development (82.9%); Planning and Budgeting (70%); Monitoring and Evaluation (63%); Intra-departmental coordination with other sectors (59.1%); and Human Resource Management (52.4%). This is an indication that majority of the CHMT in the counties may not be effective in delivery of their mandates.

Table 27: Frequency of Confidence of CHMT

	Not Confident at all	A little confident	Sometimes confident	More confident	Very confident	Total
Planning and Budgeting	0 (0.0%)	9 (20.5%)	**22 (50.0%)**	9 (20.5%)	5 (11.4%)	44 (100%)
Monitoring and Evaluation	0 (0.0%)	7 (15.9%)	**21 (47.7%)**	12 (27.3%)	4 (9.1%)	44 (100%)
Health Information Management	0 (0.0%)	4 (9.3%)	11 (25.6%)	**17 (39.5%)**	11 (25.6%)	43 (100%)
Health Research	**17 (40.5%)**	15 (35.7%)	5 (11.9%)	5 (11.9%)	0 (0.0%)	42 (100%)

	Not Confident at all	A little confident	Sometimes confident	More confident	Very confident	Total
Financial Management	1 (2.4%)	12 (29.3%)	**14 (34.1%)**	9 (22.0%)	5 (12.2%)	41 (100%)
Human Resource Management	1 (2.4%)	7 (16.7%)	**15 (35.7%)**	13 (31.0%)	6 (14.3%)	42 (100%)
Human Resource Development	0 (0.0%)	14 (34.1%)	**20 (48.8%)**	4 (9.8%)	3 (7.3%)	41 (100%)
Communication	1 (2.3%)	6 (13.6%)	12 (27.3%)	**18 (40.9%)**	7 (15.9%)	44 (100%)
Intra-departmental Coordination (within CDoH)	1 (2.3%)	4 (9.3%)	12 (27.9%)	**15 (34.9%)**	11 (25.6%)	43 (100%)
Inter-departmental Coordination (with other sectors)	1 (2.3%)	12 (27.3%)	**14 (31.8%)**	12 (27.3%)	5 (11.4%)	44 (100%)
Public Private Partnerships	4 (9.5%)	8 (19.0%)	**16 (38.1%)**	9 (21.4%)	5 (11.9%)	42 (100%)
Supervision and Mentorship	0 (0.0%)	0 (0.0%)	**17 (40.5%)**	14 (33.3%)	11 (26.2%)	42 (100%)
Service Delivery at Community level (Level 1)	1 (2.3%)	4 (9.3%)	**20 (46.5%)**	12 (27.9%)	6 (14.0%)	43 (100%)
Service Delivery at Primary Health Care facility level (Level 2-3)	0 (0.0%)	2 (4.9%)	13 (31.7%)	**16 (39.0%)**	10 (24.4%)	41 (100%)
Service Delivery at Hospital level (Level 4-5)	0 (0.0%)	1 (2.5%)	**16 (40.0%)**	15 (37.5%)	8 (20.0%)	40 (100%)
Health Promotion	0 (0.0%)	5 (15.0%)	13 (31.7%)	**17 (41.5%)**	6 (14.6%)	41 (100%)
Quality Management	1 (2.5%)	6 (15.0%)	**21 (52.5%)**	8 (20.0%)	4 (10.0%)	40 (100%)
Commodity Procurement and Management	0 (0.0%)	7 (17.9%)	**13 (33.3%)**	10 (25.6%)	9 (23.1%)	39 (100%)
Infrastructure Management	3 (7.5%)	6 (15.0%)	**18 (45.0%)**	9 (22.5%)	4 (10.0%)	40 (100%)
Emergency Preparedness and Response	1 (2.4%)	13 (31.7%)	**18 (43.9%)**	7 (17.1%9	2 (4.9%)	41 (100%)

In relation to findings above and looking at the

Table 28**,** there is consistency in the CHMT level of experience and their level of confidence. In regard to level of confidence, the CHMT met the threshold in most management domain areas that are related to clinical and service delivery while the domains directly linked to management did not.

Table 28: Level of confidence of the CHMT

Confidence of CHMT	**Average**

Confidence of CHMT	Average
Supervision and Mentorship	3.86
Service Delivery at Primary Health Care facility level (Level 2-3)	3.83
Health Information Management	3.81
Service Delivery at Hospital level (Level 4-5)	3.75
Intra-departmental Coordination (within CDoH)	3.72
Health Promotion	3.59
Communication	3.55
Commodity Procurement and Management	3.54
Cutting point	3.50
Service Delivery at Community level (Level 1)	3.42
Human Resource Management	3.38
Average	3.33
Planning and Budgeting	3.30
Monitoring and Evaluation	3.30
Quality Management	3.20
Inter-departmental Coordination (with other sectors)	3.18
Infrastructure Management	3.13
Financial Management	3.12
Public Private Partnerships	3.07
Emergency Preparedness and Response	2.90
Human Resource Development	2.90
Health Research	1.95

The management objective of this study was to assess the capacity of CDH and CHMT in service delivery. The study also identified the skills gap of the CHMT that require short Course training. These findings reveal that there are management gaps among the County Directors of Health and the CHMT where confidence, experience and satisfaction lacked.

In Figure 9, the first category of 13 counties (29.5%), CHMT had high level of confidence and experience. These counties include: Migori, Tana River, Homabay, Kajiado, Muranga, West Pokot, Uasin Gishu, Kwale, Kitui, Nyandarua, Mombasa, Makueni and Nyeri. In the second category of 4 counties 9.1% (n=4), the CHMT had high level of confidence and low level of experience and these counties include: Lamu, Laikipa, Embu and Nairobi. The third category of 8 counties (18.2%), CHMT had low level of confidence and high level of experience and these include, Kisumu, Narok, Kirinyaga, Turkana, Siaya, Kisii, Nyamira and Busia. Lastly, the fourth category of 19 counties (43.2%) CHMT, have low level of confidence and experience and these counties include: Kakamega, Bomet, Machakos, Elgeyo Marakwet, Trans Nzoia, Bungoma, Nandi, Garissa, Isiolo, Meru, Wajir, Taita Taveta, Samburu, Tharaka Nithi, Mandera, Kericho, Vihiga, Kilifi and Marsabit.

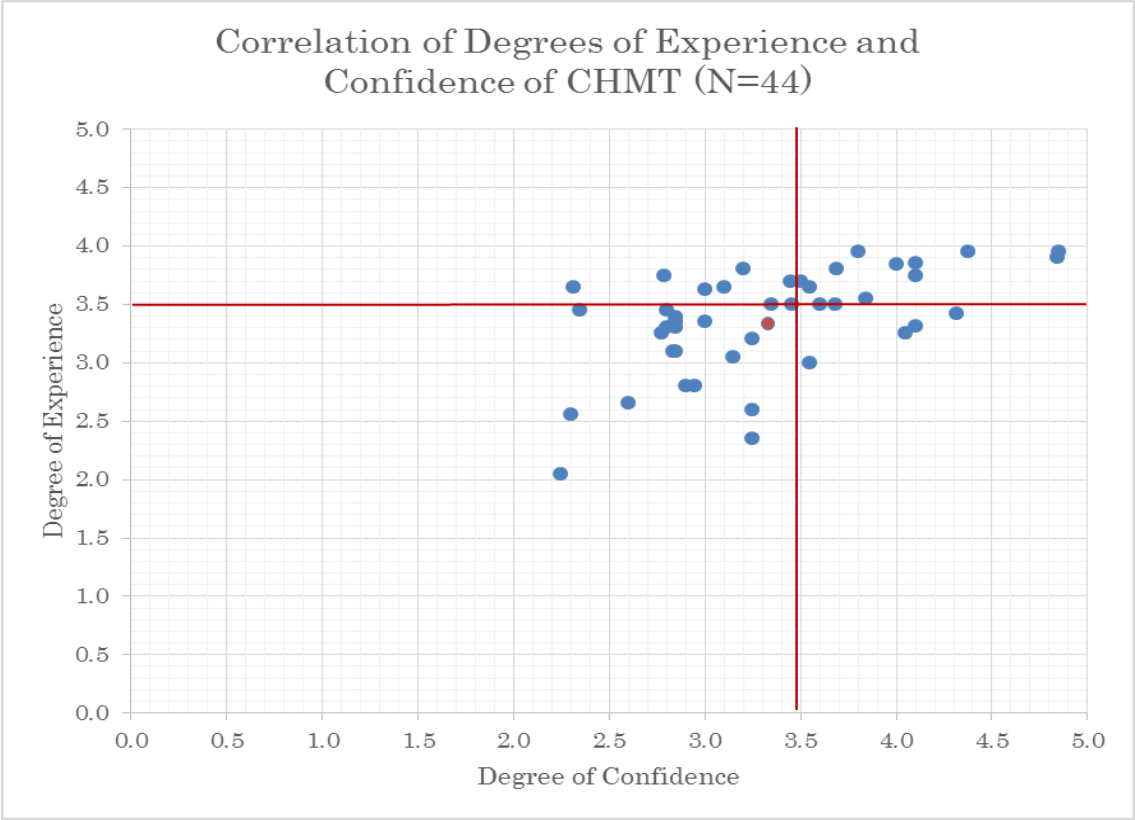

Figure 9: Level of confidence of CHMT

N=44（Baringo, Kiambu and Nakuru are not included）

Average of degree of experience of CHMT = 3.34

Average of degree of confidence of CHMT = 3.33

Cutting point = 3.50

Experience of CHMT and Confidence of CHMT

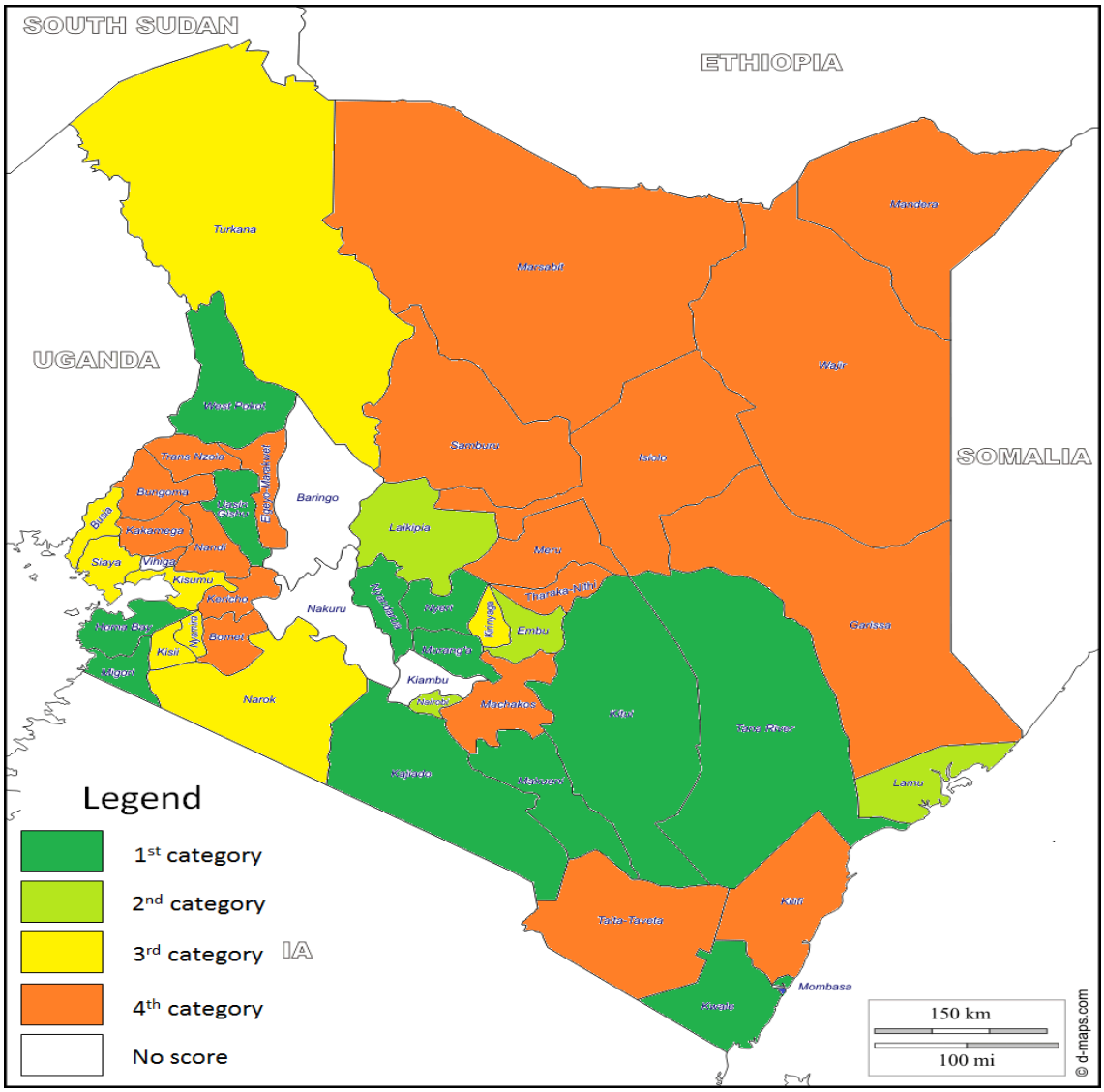

Figure 10: Level of experience of CHMT

Finding in relation to the degree of satisfaction and experience in Figure 11 shows that the first category of CHMT and CDH in 5 counties (12.2%) had high level of experience and satisfaction. These counties include: Migori, Kajiado, Kwale, Nyandarua and Mombasa. In the second category CHMT and CDH in 11 counties (28.2%) show that CHMT have low level of experience, but CDH are satisfied with performance. These include: Tana River, Lamu, Laikipia, Muranga, Embu, West Pokot, Uasin Gishu, Kitui, Nairobi, Makueni and Nyeri. In the third category of 5 counties (12.8%) CHMT, had high level of experience but CDH are dissatisfied with performance. These include: Kisumu, Kirinyaga, Bomet, Machakos and Kisii. Lastly, in the fourth category of 18 counties (46.2%), had level of experience by CHMT and low level of satisfaction by CDH. These

include: Narok, Kakamega, Elgeyo Marakwet, Siaya, Trans Nzoia, Bungoma, Nandi, Wajir, Garissa, Isiolo, Tharaka Nithi, Samburu, Nyamira, Mandera, Kericho, Vihiga, Busia and Marsabit.

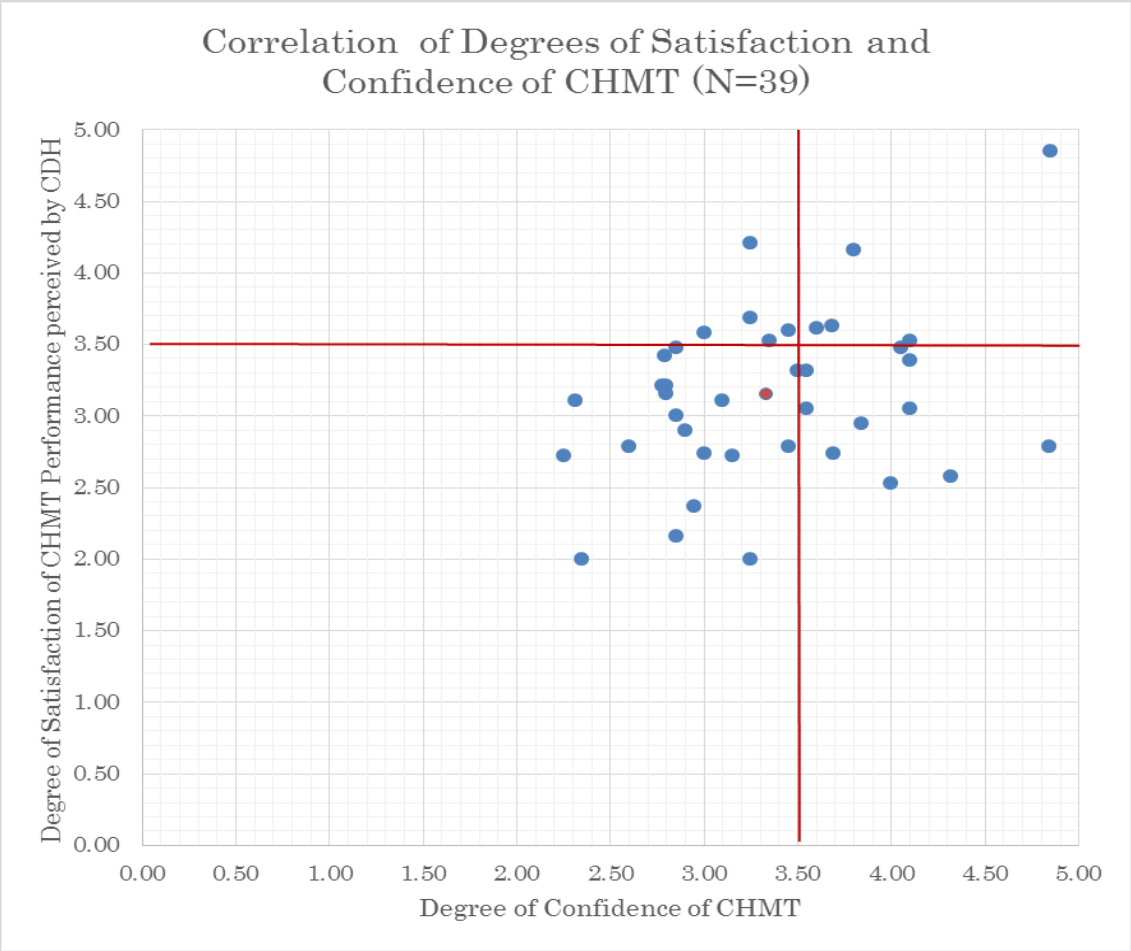

Figure 11: level of confidence of CHMT

N=39 (Baringo, Homabay, Kiambu Kilifi, Meru, Nakuru, Taita Taveta, Turkana are not included)

Average of degree of satisfaction of CHMT performance perceived by CDH = 3.15

Average of degree of confidence of CHMT = 3.33

Cutting point = 3.50

4.10 Confidence of CHMT and Satisfaction by CDH

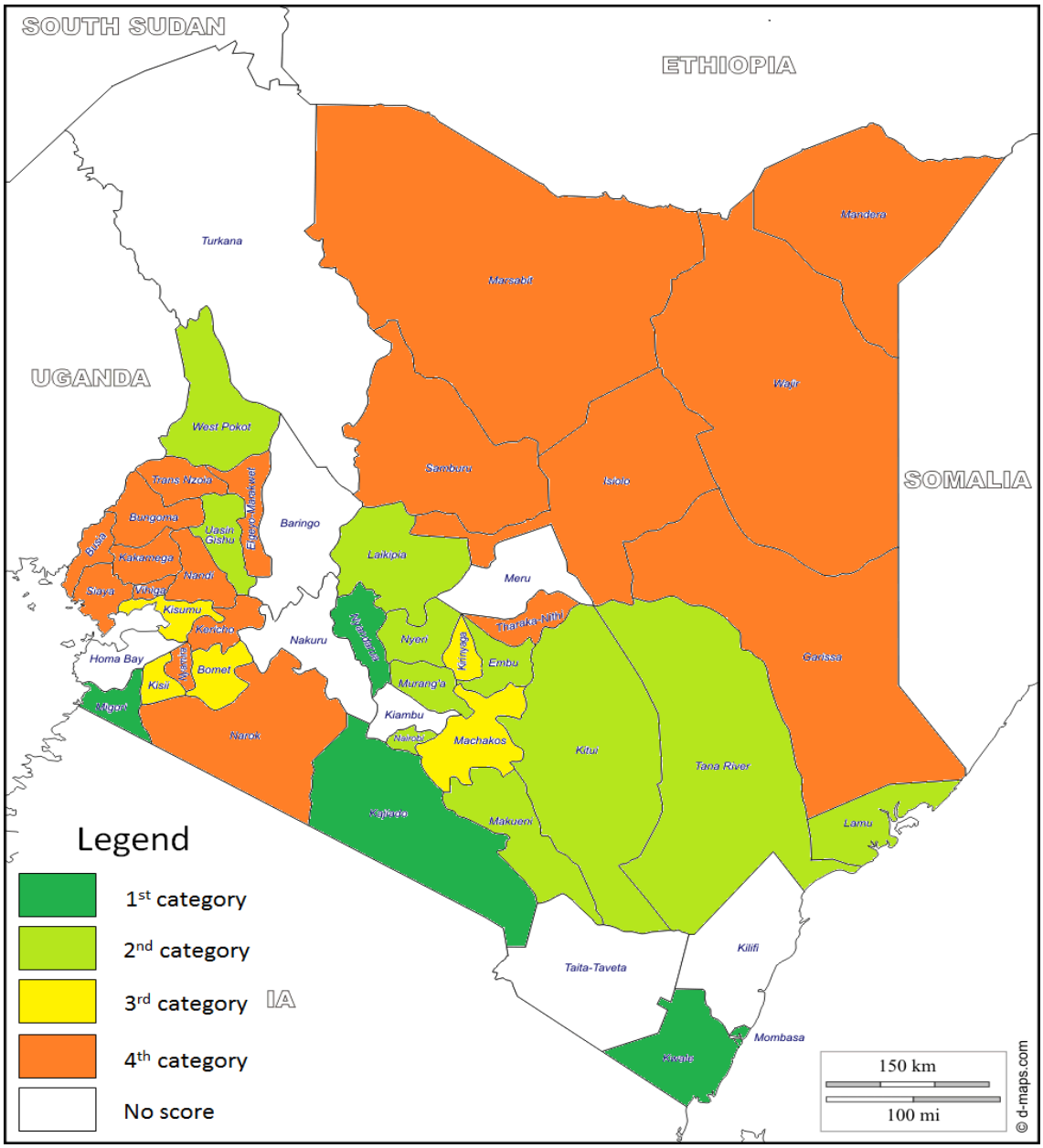

Figure 12: Confidence of CHMT and Satisfaction by CDH

Finding in relation to the degree of satisfaction and experience in Figure 13, shows the first category by CHMT and CDH in 8 counties (20.5%) both have high levels of experience and satisfaction. These counties include: Migori, Kwale, Kajiado, Kisii, Nyandarua, Mombasa, Kisumu and Kirinyaga. In the second category, CHMT and CDH in 11 counties (28.2%), the CHMT have low level of experience but the CDH are satisfied with performance. These include: Tana River, West Pokot, Kitui, Nyamira, Muranga, Nyeri, Narok, Makueni, Busia, Siaya and Uasin Gishu). In

the third category of 2 counties (5.1%), CHMT had high level of experience but the CDH are dissatisfied with performance. These include: Bomet and Machakos. Lastly, in the fourth category of 18 counties (46.2%), had low level of experience by CHMT and low level of satisfaction by CDH respectively. These include: Tharaka-Nithi, Vihiga, Lamu, Wajir, Trans Nzoia, Laikipia, Samburu, Garissa, Embu, Mandera, Kakamega, Isiolo, Elgeyo-Marakwet, Nairobi, Nandi, Bungoma, Kericho and Marsabit.

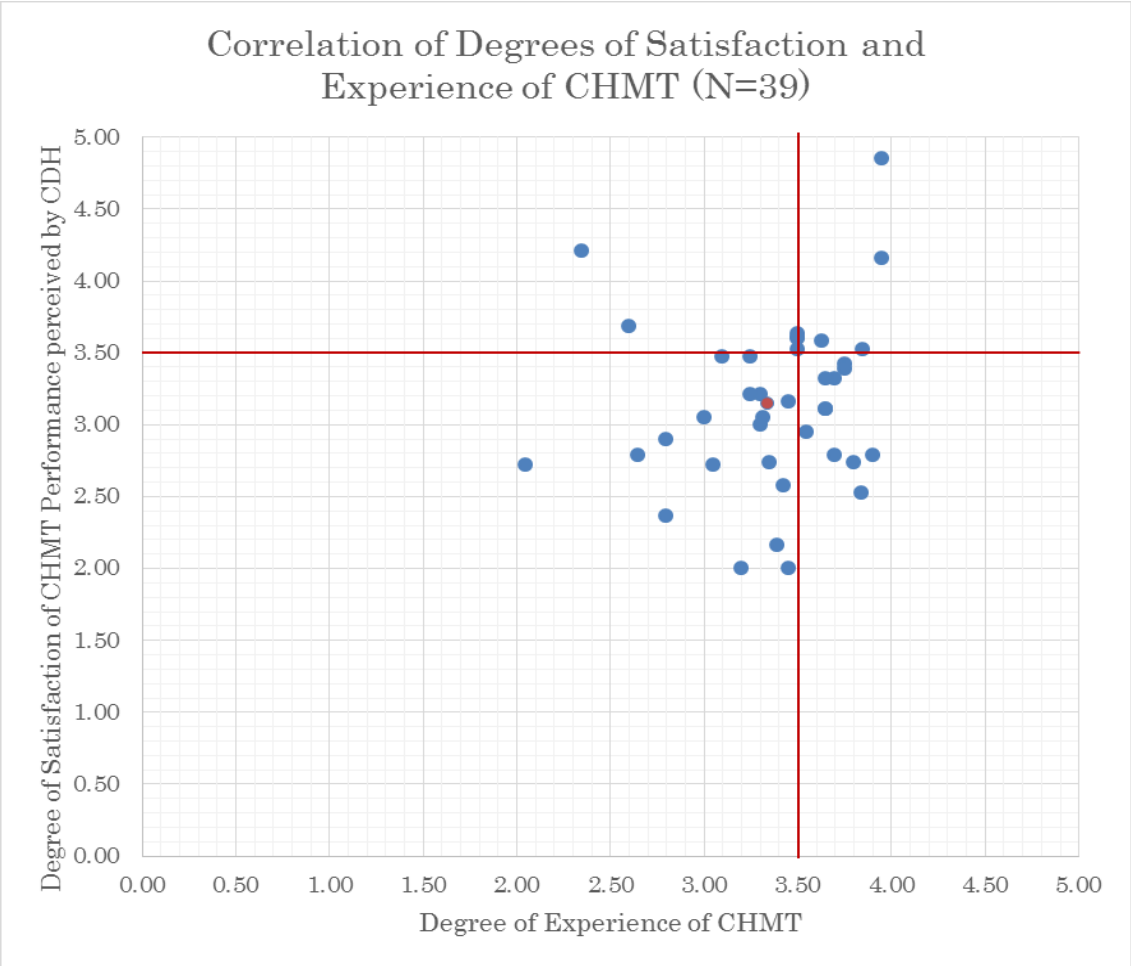

Figure 13: Level of experience of CHMT

N=39 (Baringo, Homabay, Kiambu, Kilifi, Meru, Nakuru, Taita Taveta, Turkana are included)

Average of degree of satisfaction of CHMT performance perceived by CDH = 3.15

Average of degree of experience of CHMT = 3.34

Cutting point = 3.50

4.11 Experience of CHMT and Satisfaction by CDH

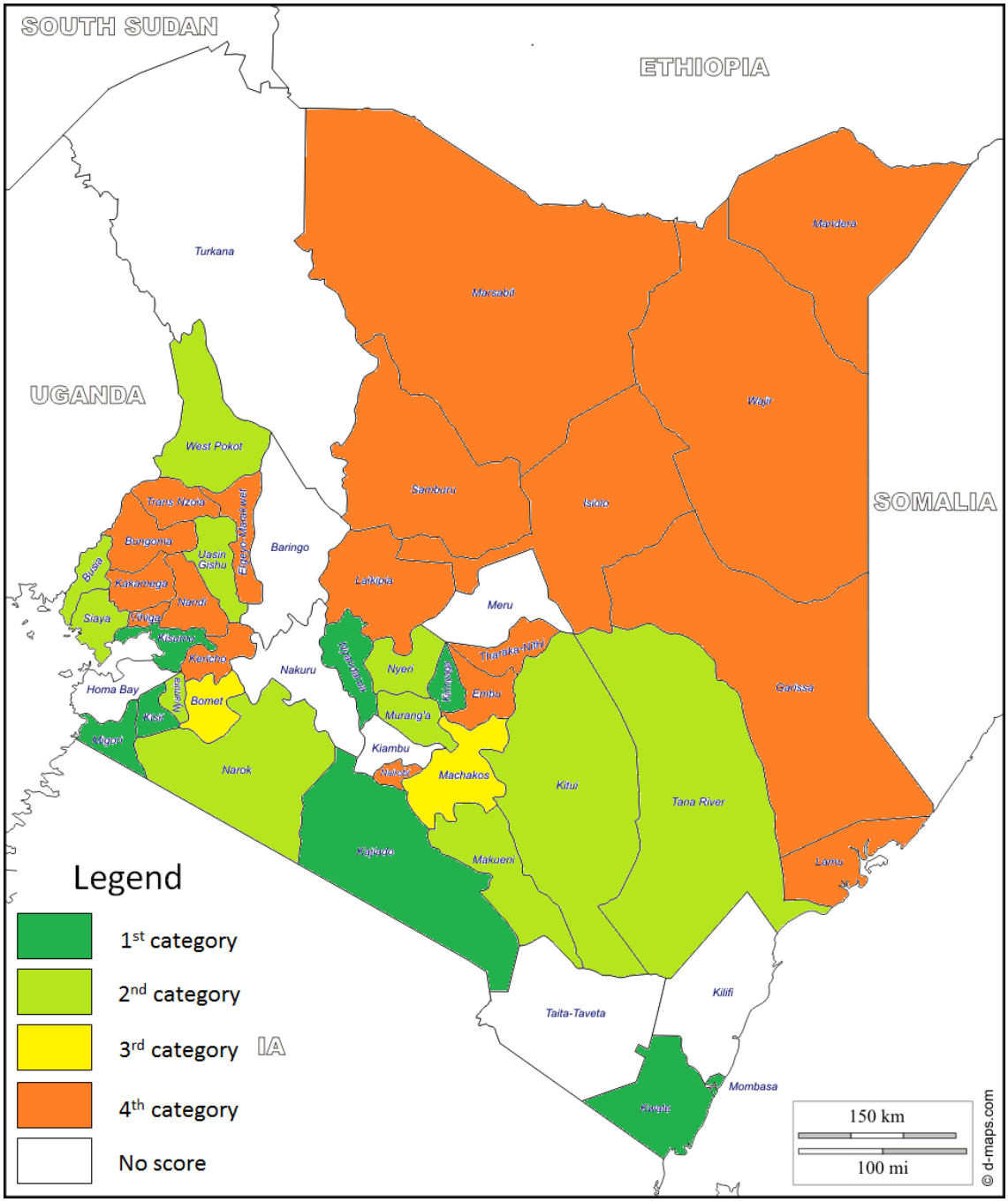

Figure 14: Experience of the CHMT

In Figure 15, the first category of 13 counties (34.2%) showed that CDH have high levels of confidence and experience. These counties include: Migori, Nyamira, Kwale, Elgeyo Marakwet, Murang'a, Laikipia, Nandi, Nyandarua, Narok, Bomet, Isiolo, Tana River and Kajiado. In the second category of 4 counties (2.6%), CDH had high level of confidence and low level of experience. Busia, Bungoma, Makueni and Mombasa. In the third category of 5 counties (13.2%),

the CDH had low confidence and high level of experience. These include: Nairobi, Samburu, Uasin Gishu, Kirinyaga and Kisii. Lastly in the category of 15 counties (39.5%), the CDH had low levels of confidence and experience. These counties include: Kitui, Siaya, Nyeri, Embu, West Pokot, Kericho, Mandera, Vihiga, Lamu, Marsabit, Garissa, Trans Nzoia, Kakamega, Tharaka Nithi and Wajir.

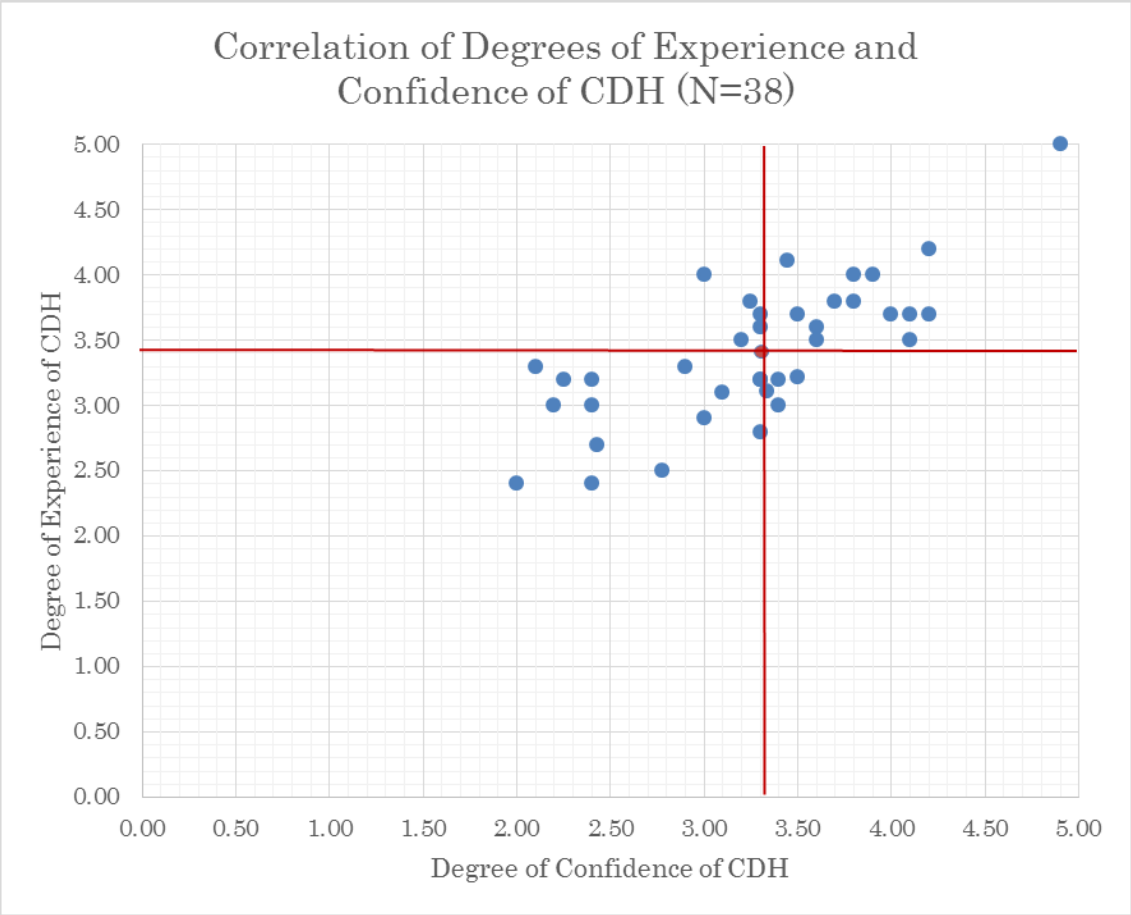

Figure 15: Level of confidence of the CDH

N=38（Baringo, Homabay, Kiambu, Kilifi, Kisumu, Machakos, Meru, Taita Taveta and Turkana are not included）

Average of degree of experience of CDH = 3.41

Average of degree of confidence of CDH = 3.30

Cutting point = 3.50

4.12 Experience and Confidence of CDH

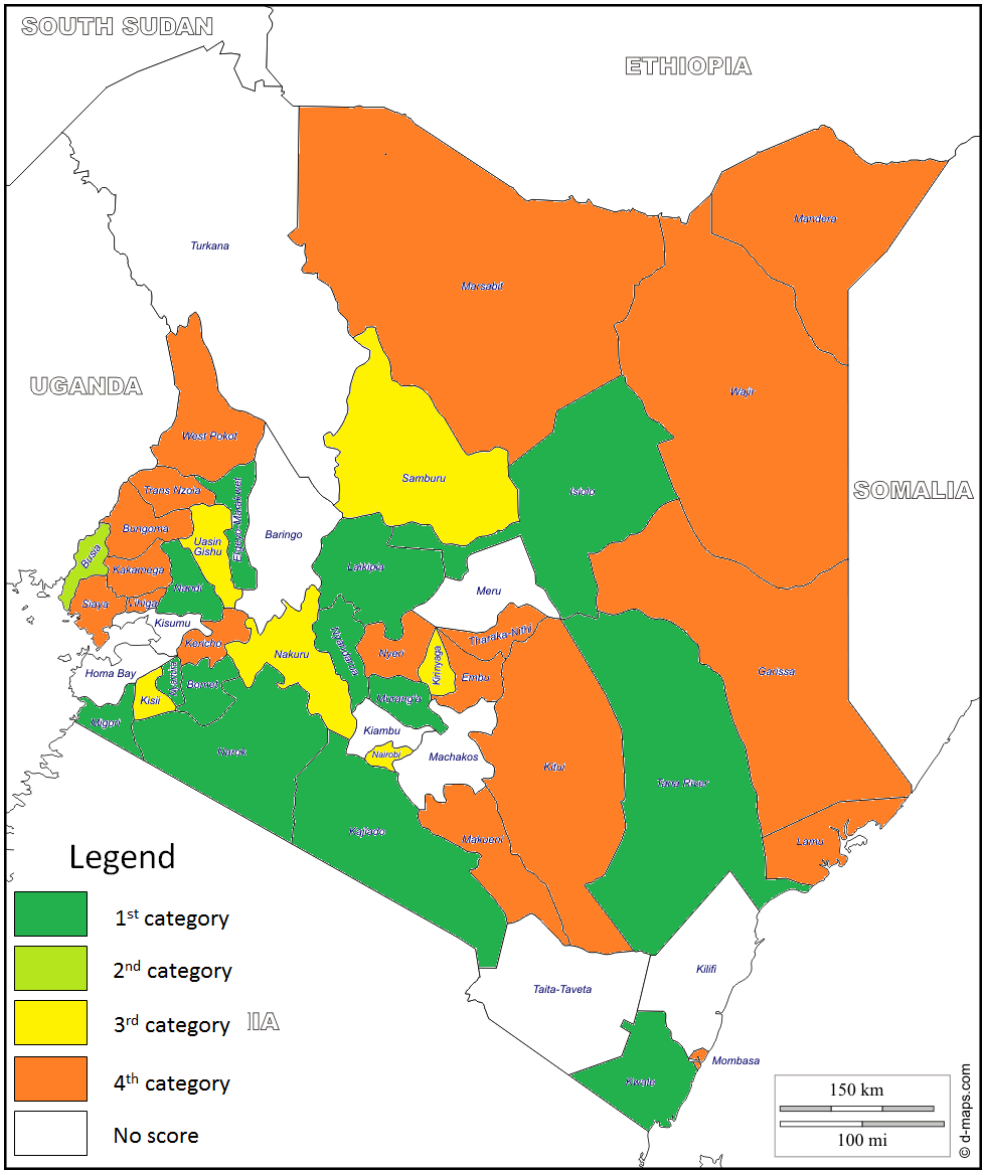

Figure 16: Level of experience and confidence of CDH

The Human Resource for Health Inter-agency Coordination Committee devolved their functions to the county level and in consultation with counties came up with 9 clusters in Kenya that facilitate the Inter County Stakeholder forums. The clusters are namely: Nairobi Metropolitan, Coast, Western, Lake Basin, North Rift Valley, South Rift Valley, North Eastern, Central and Upper East as shown in Table 29 and Figure 17.

Table 29: HRH ICC clusters

No	Name of Cluster	Number of Counties	Name of Counties
1	Nairobi Metropolitan	6	Kajiado, Kiambu, Kitui, Machakos, Makueni, Nairobi
2	Coast	6	Kilifi, Kwale, Lamu, Mombasa, Taita Taveta, Tana River
3	Western	6	Bungoma, Busia, Kakamega, nandi, Trans Nzoia, Vihiga
4	Lake Basin	6	Homabay, Kisii, Kisumu, Migori, Nyamira, Siaya
5	North Rift Valley	6	Baringo, Elgeyo Marakwet, Samburu, Turukana, Uasin Gishu, West Pokot
6	South Rift Valley	5	Bomet, Kericho, Nakuru, Narok, Nyandarua
7	North Eastern	3	Garissa, Mandera, Wajir
8	Central	3	Kirinyaga, Murang'a, Nyeri
9	Upper Eastern	6	Embu, Isiolo, Laikipia, Marsabit, Meru, Tharaka Nithi

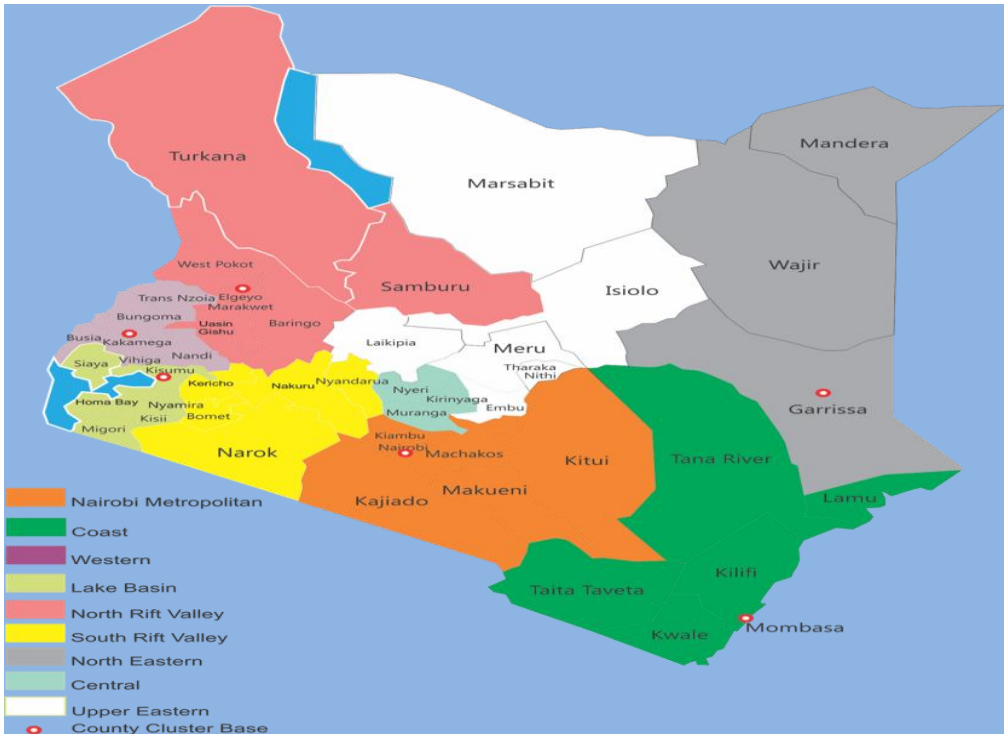

Figure 17: HRH ICC clusters in Kenya

4.12.1 Nairobi Metropolitan Cluster

Based on HRH ICC Cluster, the study sought to establish management domains; where Country Directors of Health indicated that they had a little or no confidence. From the findings in Nairobi Metropolitan which is made of 6 counties namely: Kajiado, Kiambu, Kitui, Machakos, Makueni and Nairobi. One CDH indicated that he had less confidence in Strategic Human Resource

Development while the rest had no problem in any management area. Kiambu did not have a score in this question.

N=5	Total	A little confident	Not Confident at all
Strategic Human Resource Development (N=5)	1	1	0

4.12.2 Coast Cluster

In the Coast Cluster comprising six (6) counties: Kilifi, Kwale, Lamu, Mombasa, Taita Taveta, and Tana River. One county indicated little confidence in each of these management domains: strategic human resource development, strategic planning, organizational human resource development and negotiation and conflict resolution skills. Kilifi and Taita Taveta did not score this question.

N=4	Total	A little confident	Not Confident at all
Strategic Human Resource Development (N=3)	1	1	0
Strategic Planning (N=4)	1	1	0
Organizational Human Resource Management (N=4)	1	1	0
Negotiation and Conflict Resolution (N=4)	1	1	0

4.12.3 Western Cluster

In the western cluster comprising of six (6) counties namely: Bungoma, Busia, Kakamega, Nandi, Trans Nzoia and Vihiga. Two counties indicated had little confidence in organizational human resource management, inter-departmental coordination (with other sectors) budgeting and overall financial management and inter-departmental coordination while three (3) counties, had less confidence in monitoring and evaluation, project/program management and strategic human resource development. CDH was less confident in negotiation & conflict resolution and leadership & guidance.

N=6	Total	A little confident	Not Confident at all
Organizational Human Resource Management (N=6)	3	2	1
Strategic Planning (N=6)	3	3	0
Overall Monitoring and Evaluation (N=6)	3	3	0
Project/Program Management (N=6)	3	3	0
Strategic Human Resource Development (N=6)	3	3	0
Intre-departmental Coordination (with other sectors) (N=5)	2	2	0
Budgeting and Overall Financial Management (N=6)	2	2	0
Intra-departmental Coordination (N=6)	2	2	0
Negotiation and Conflict Resolution (N=4)	1	1	0
Leadership and Guidance (N=4)	1	1	0

4.12.4 Lake Basin cluster

Among the counties from Lake Basin cluster namely: Homabay, Kisii, Kisumu, Migori, Nyamira and Siaya, one CDH had little confidence in budgeting, overall financial management and negotiation & conflict resolution. Homabay and Kisumu did not score.

N=4	Total	A little confident	Not Confident at all
Budgeting and Overall Financial Management (N=4)	1	1	0
Negotiation and Conflict Resolution (N=4)	1	1	0

4.12.5 North Rift Valley Cluster

In the North Rift Valley comprising of (6) counties: Baringo, Elgeyo Marakwet, Samburu, Turkana and Uasin Gishu, West Pokot, one county had little confidence in budgeting, overall financial management and project/program management. Baringo and Turkana did not score.

N=4	Total	A little confident	Not Confident at all
Budgeting and Overall Financial Management (N=3)	1	1	0
Project/Program Management (N=4)	1	1	0

4.12.6 South Rift Valley

In the South Rift Valley comprising of 5 counties: Bomet, Kericho, Nakuru, Narok and Nyandarua, two counties had less confidence in intre-departmental coordination (with other sectors) and strategic human resource development while only one indicated that he had less confidence negotiation and conflict resolution.

N=5	Total	A little confident	Not Confident at all
Intre-departmental Coordination (with other sectors) (N=4)	2	2	0
Strategic Human Resource Development (N=5)	2	2	0
Negotiation and Conflict Resolution (N=5)	1	1	0

4.12.7 North Eastern Cluster

The North Eastern cluster is comprising 3 counties namely: Garissa, Mandera and Wajir, had little confidence in strategic human resource development and one county indicated had less confidence in the following areas: strategic planning, project/program management, Inter-departmental coordination (with other sectors), budgeting and overall financial management, Intra-departmental coordination and organizational human resource management.

N=3	Total	A little confident	Not Confident at all
Negotiation and Conflict Resolution (N=3)	3	0	3
Strategic Human Resource Development (N=3)	3	3	0
Strategic Planning (N=3)	2	1	1
Project/Program Management (N=3)	2	1	1
Inter-departmental Coordination (with other sectors) (N=2)	1	1	0
Budgeting and Overall Financial Management (N=3)	1	1	0
Intra-departmental Coordination (N=3)	1	1	0
Organizational Human Resource Management (N=3)	1	1	0

4.12.8 Central Cluster

The Central Cluster comprises 3 counties namely: Kirinyaga, Murang'a and Nyeri. One CDH had little confidence in strategic planning, budgeting & overall finance management, strategic human resource development and negotiation & conflict resolution.

N=3	Total	A little confident	Not Confident at all
Strategic Planning (N=3)	1	1	0
Budgeting and Overall Financial Management (N=3)	1	1	0
Strategic Human Resource Development (N=3)	1	1	0
Negotiation and Conflict Resolution (N=3)	1	1	0

4.12.9 Upper Eastern Cluster

The Upper Eastern cluster comprising six (6) counties namely: Embu, Isiolo, Laikipia, Marsabit, Meru and Tharaka Nithi, 2 counties had little confidence in strategic human resource development, overall monitoring and evaluation and organization human resource management. Three (3) counties had little confidence in budgeting and overall financial planning while one county had a little confidence in strategic planning and project/program management. Meru did not score.

N=5	Total	A little confident	Not Confident at all
Strategic Human Resource Development (N=4)	3	2	1
Budgeting and Overall Financial Management (N=5)	3	3	0
Overall Monitoring and Evaluation (N=5)	2	2	0
Organizational Human Resource Management (N=5)	2	2	0
Strategic Planning (N=5)	1	1	0
Project/Program Management (N=5)	1	1	0

4.13 Categories based on HRH ICC Cluster

4.13.1 Nairobi Metropolitan CHMT Cluster

The Nairobi Metropolitan comprising (6) counties namely: Kajiado, Kiambu, Kitui, Machakos, Makueni, and Nairobi. Two CHMTs in the Nairobi Metropolitan, (2) had little confidence in health research while one CHMT had little confidence in financial management, planning and budgeting, human resource development and communication. Kiambu did not score.

N=5	Total	A little confident	Not Confident at all
Health Research (N=5)	3	2	1
Financial Management (N=4)	1	1	0

N=5	Total	A little confident	Not Confident at all
Planning and Budgeting (N=5)	1	1	0
Human Resource Development (N=5)	1	1	0
Communication (N=5)	1	1	0
Inter-departmental Coordination (with other sectors) (N=5)	1	1	0
Public Private Partnerships (N=5)	1	1	0
Commodity Procurement and Management (N=5)	1	1	0

4.13.2 Coast CHMT Cluster

Among the (6) counties in Coast cluster namely: Kilifi, Kwale, Lamu, Mombasa, Taita Taveta and Tana River. three CHMT had less confidence in Health Research, while 2 CHMTs had little confidence in Human Resource Development, Quality Management, Planning and budgeting, Human Resource Management, and Health Promotion while 1 CHMT had little confidence in Health Information System, Service Delivery at Hospital(levels 4-5), Financial Management, Communication, Intra-departmental Coordination (within CDoH), Inter-departmental Coordination (with other sectors), Service Delivery at Community level (Level 1), Commodity Procurement and Management and Infrastructure Management.

N=6	Total	A little confident	Not Confident at all
Health Research (N=6)	5	3	2
Human Resource Development (N=5)	2	2	0
Quality Management (N=5)	2	2	0
Planning and Budgeting (N=6)	2	2	0
Human Resource Management (N=6)	2	2	0
Health Promotion (N=6)	2	2	0
Health Information Management (N=5)	1	1	0
Service Delivery at Hospital level (Level 4-5) (N=5)	1	1	0
Financial Management (N=6)	1	1	0
Communication (N=6)	1	1	0
Intra-departmental Coordination (within CDoH) (N=6)	1	1	0
Inter-departmental Coordination (with other sectors)	1	1	0
Service Delivery at Community level (Level 1) (N=6)	1	1	0
Commodity Procurement and Management (N=6)	1	1	0
Infrastructure Management (N=6)	1	1	0

4.13.3 Western CHMT Cluster

Among the (6) counties in the Western cluster namely: Bungoma, Busia, Kakamega, Nandi, Trans Nzoia, and Vihiga. Four (4) CHMT had little confidence in Emergency Preparedness and Response while three (3) CHMTs had little confidence in management of Infrastructure, financial, human resource development, inter-departmental coordination (with other sectors). Two (2) CHMTs had little confidence in Communication, Intra-departmental Coordination (within CDoH), health promotion, commodity procurement and management, monitoring and evaluation and one CHMT had less confidence in health research, human resource management, quality management, planning and budgeting, health information management, public PPPs and service delivery at community level (level 1)

N=6	Total	A little confident	Not Confident at all
Health Research (N=6)	6	1	5
Emergency Preparedness and Response (N=6)	5	4	1
Infrastructure Management (N=5)	4	3	1
Communication (N=6)	3	2	1
Intra-departmental Coordination (within CDoH) (N=6)	3	2	1
Financial Management (N=6)	3	3	0
Human Resource Development (N=6)	3	3	0
Inter-departmental Coordination (with other sectors) (N=6)	3	3	0
Human Resource Management (N=6)	2	1	1
Health Promotion (N=5)	2	2	0
Commodity Procurement and Management (N=5)	2	2	0
Monitoring and Evaluation (N=6)	2	2	0
Quality Management (N=5)	1	1	0
Planning and Budgeting (N=6)	1	1	0
Health Information Management (N=6)	1	1	0
Public Private Partnerships (N=6)	1	1	0
Service Delivery at Community level (Level 1) (N=6)	1	1	0

4.13.4 Lake Basin CHMT Cluster

Lake Basin cluster comprising (6) counties namely: Homabay, Kisii, Kisumu, Migori, Nyamira, Siaya. Two (2) CHMT had little confidence in Health Research while one CHMT had little confidence in Financial Management, Human Resource Management, Public Private Partnerships, Service Delivery at Primary Health Care facility level (levels 2-3), Planning and

Budgeting, Monitoring and Evaluation, Communication, Intra-departmental Coordination (within CDoH) and Inter-departmental Coordination (with other sectors). Lastly, it is interesting that none of the CHMT in the Lake Basin cluster had less confidence in service delivery at community level (level 1).

N=6	Total	A little confident	Not Confident at all
Health Research (N=4)	3	2	1
Financial Management (N=5)	2	1	1
Service Delivery at Community level (Level 1) (N=5)	1	0	1
Human Resource Management (N=4)	1	1	0
Public Private Partnerships (N=4)	1	1	0
Service Delivery at Primary Health Care facility level (Level 2-3) (N=5)	1	1	0
Planning and Budgeting (N=6)	1	1	0
Monitoring and Evaluation (N=6)	1	1	0
Communication (N=6)	1	1	0
Intra-departmental Coordination (within CDoH) (N=6)	1	1	0
Inter-departmental Coordination (with other sectors) (N=6)	1	1	0

4.13.5 North Rift Valley CHMT Cluster

In the North Rift Valley cluster made up of (6) counties namely: Baringo, Elgeyo Marakwet, Samburu, Turukana, Uasin Gishu and West Pokot. Three (3) CHMTs had little confidence in Emergency Preparedness and Response while 2 CHMT had less confidence in Health Research and 1 CHMT had less confidence in Financial Management, Human Resource Management, Human Resource Development and Communication.
Baringo did not score.

N=5	Total	A little confident	Not Confident at all
Health Research (N=5)	3	2	1
Emergency Preparedness and Response (N=4)	3	3	0
Inter-departmental Coordination (with other sectors) (N=5)	1	0	1
Financial Management (N=5)	1	1	0
Human Resource Management (N=5)	1	1	0
Human Resource Development (N=5)	1	1	0

N=5	**Total**	**A little confident**	**Not Confident at all**
Communication (N=5)	1	1	0

4.13.6 South Rift Valley CHMT Cluster

In the South Rift Valley cluster comprising five (5) counties namely: Bomet, Kericho, Nakuru, Narok, Nyandarua. Two (2) counties had little confidence in Financial Management, Human Resource Management, Human Resource Development and Communication while 1 CHMT had less confidence in Health Research, Planning and Budgeting, Monitoring and Evaluation, Health Information Management, Human Resource Management, Inter-departmental Coordination (with other sectors) and Public Private Partnerships.

N=4	Total	A little confident	Not Confident at all
Financial Management (N=4)	2	2	0
Human Resource Development (N=4)	2	2	0
Emergency Preparedness and Response (N=4)	2	2	0
Health Research (N=4)	1	0	1
Planning and Budgeting (N=4)	1	1	0
Monitoring and Evaluation (N=4)	1	1	0
Health Information Management (N=4)	1	1	0
Human Resource Management (N=4)	1	1	0
Inter-departmental Coordination (with other sectors) (N=4)	1	1	0
Public Private Partnerships (N=4)	1	1	0

In the North Eastern cluster comprising (3) counties namely: Garissa, Mandera and Wajir. Two (2) CHMTs had little confidence in Public Private Partnerships, Infrastructure Management, Human Resource Development, Inter-departmental Coordination (with other sectors) while 1 CHMT had less confidence in Health Research and Health Promotion.

N=3	**Total**	**A little confident**	**Not Confident at all**
Health Research (N=3)	3	1	2
Public Private Partnerships (N=3)	3	2	1
Infrastructure Management (N=3)	3	2	1

N=3	**Total**	**A little confident**	**Not Confident at all**
Human Resource Development (N=3)	2	2	0
Inter-departmental Coordination (with other sectors) (N=3)	2	2	0
Health Promotion (N=3)	1	1	0

4.13.7 Central CHMT Cluster

In Central Cluster that comprises three (3) counties namely: Kirinyaga, Murang'a and Nyeri. Two (2) CHMT had little confidence in Health research and Emergency Preparedness and Response while 1 CHMT had little confidence in planning and budgeting, financial management, human resource development and public private partnerships.

N=3	Total	A little confident	Not Confident at all
Health Research (N=3)	3	2	1
Emergency Preparedness and Response (N=3)	2	2	0
Planning and Budgeting (N=3)	1	1	0
Financial Management (N=3)	1	1	0
Human Resource Development (N=3)	1	1	0
Public Private Partnerships (N=3)	1	1	0

In the Upper Eastern cluster comprising (6) counties namely: Embu, Isiolo, Laikipia, Marsabit, Meru and Tharaka Nithi. Three (3) CHMTs had little confidence in quality management, monitoring and evaluation, inter-departmental coordination (with other sectors) and commodity procurement and management while 2 CHMTs had little confidence in Health Research, Public Private Partnerships, Financial Management, Human Resource Development, Service Delivery at Community level 1 and Emergency Preparedness and Response. One CHMT had less confidence in planning and budgeting, health information management, human resource management and service delivery at primary health care facility levels 2-3 and no CHMT had less confidence in Infrastructure Management.

Item Description	Total	A little confident	Not Confident at all
Health Research (N=6)	5	2	3
Public Private Partnerships (N=6)	4	2	2
Quality Management (N=6)	4	3	1
Monitoring and Evaluation (N=6)	3	3	0
Inter-departmental Coordination (with other sectors) (N=6)	3	3	0
Commodity Procurement and Management (N=6)	3	3	0
Financial Management (N=5)	2	2	0
Human Resource Development (N=6)	2	2	0
Service Delivery at Community level (Level 1) (N=6)	2	2	0
Emergency Preparedness and Response (N=6)	2	2	0
Infrastructure Management (N=5)	1	0	1
Planning and Budgeting (N=6)	1	1	0
Health Information Management (N=6)	1	1	0
Human Resource Management (N=6)	1	1	0
Service Delivery at Primary Health Care facility level (Level 2-3) (N=6)	1	1	0

4.14 Qualitative Analysis of Management Data

According to the findings, several bottlenecks have contributed to poor performance in the management of CDoH as indicated by the CDH and CHMT. These bottlenecks are categorized as follows:

4.14.1 Planning and Budgeting

Fifteen (15) Counties lacked knowledge and skills in planning and budgeting. This might have led to inadequate resource allocation and mobilization, poor and delayed service delivery, slowed progress in implementation and poor project planning and budgeting. From these findings, respondents stated lack of adherence to strategic plan (28.6%) and lack of knowledge, skills and capacity in planning and budgeting (14.3%) that and have adverse effects on the performance of CHMT in the CDoH. These bottlenecks have resulted in poor service delivery, poor project planning and budgeting (Table 31).

Table 30: Effect-Bottleneck-Cause relationship

Bottlenecks for "Poor service delivery"	N=14		N=40		Percentage of Bottlenecks for Poor service delivery
	N	%	N	%	
Inadequate funding / resources	5	35.7	10	25	50%
Lack of adherence to strategic plan	4	28.6	4	10	100%
Lack of knowledge / skills / capacity	2	14.3	15	37.5	13%
Poor / rushed planning / lack of timeliness	2	14.3	6	15	33%
Poor communication	1	7.1	1	2.5	100%
Budget not approved at departmental level	1	7.1	1	2.5	100%
Lack of quality data	0	0.0	2	5	0%
Inadequate staffing	0	0.0	1	2.5	0%
Undefined roles amongst members	0	0.0	1	2.5	0%
Long procurement process	0	0.0	1	2.5	0%
No Answer	0	0.0	3	7.5	0%
	15		42		

Fourteen (14) respondents interviewed, lacked skills/training (57%) and lacked adherence (21.4%) and these caused bottlenecks in planning and budgeting (Table 32).

Table 31: "Lack of skills/training" by 14 CDH.

Bottlenecks	N=14		N=40		Percentage of "Lack of Skills"
	N	%	N	%	
Lack of knowledge / skills / capacity	8	57.1	15	37.5	53%
Lack of adherence to strategic plan	3	21.4	4	10	75%
Poor / rushed planning / lack of timeliness	2	14.3	6	15	33%
Inadequate funding / resources	1	7.1	10	25	10%
Lack of quality data	1	7.1	2	5	50%
Undefined roles amongst members	1	7.1	1	2.5	100%
Inadequate staffing	0	0.0	1	2.5	0%
Poor communication	0	0.0	1	2.5	0%
Budget not approved at departmental level	0	0.0	1	2.5	0%
Long procurement process	0	0.0	1	2.5	0%
No Answer	0	0.0	3	7.5	0%
	16		42		

4.14.2 Bottlenecks in M& E

From the respondents interviewed, 27% indicated that most perceived effects of the bottlenecks in M&E is poor service delivery. Of the 11 respondents interviewed on M& E, 36.4% indicated

that poor service delivery among CHMT lacked an M&E plan and were not aligned to county budget and strategic plans (Table 33).

Table 32: Perceived Bottlenecks for Poor service delivery.

Bottleneck for "Poor service delivery"	N=11		N=40		Percentage of Bottlenecks for Poor service delivery
	N	%	N	%	
Lack of M&E plan / plan not aligned to county budget and strategic plan	4	36.4	8	20	50%
Lack of resource allocation / diverse county resource	3	27.3	8	20	38%
Inadequate / poor quality supervision	2	18.2	4	10	50%
Inadequate health information to use	1	9.1	1	2.5	100%
Poor data quality	1	9.1	4	10	25%
Lack of staff	1	9.1	3	7.5	33%
Poor network	1	9.1	1	2.5	100%
Low health indicator	1	9.1	1	2.5	100%
Lack of skills / training / understanding	0	0.0	6	15	0%
Lack of M&E structure	0	0.0	6	15	0%
Poor M&E / irregular review meeting	0	0.0	5	12.5	0%
Inadequate tools / tools not updated regularly	0	0.0	4	10	0%
No Answer	0	0.0	3	7.5	0%
	14		54		

In Table 33, lack of skills and training caused a lack of an M&E plan and aligned budget.

Table 33: "Lack of skills / training" as Cause is answered by 12 CDH.

Bottlenecks	N=12		N=40		Percentage of "Lack of skills"
	N	%	N	%	
Lack of M&E plan / plan not aligned to county budget and strategic plan	4	33.3	8	20	50%
Lack of M&E structure	3	25.0	6	15	50%
Lack of skills / training / understanding	2	16.7	6	15	33%
Poor M&E / irregular review meeting	2	16.7	5	12.5	40%
Lack of resource allocation / diverse county resource	1	8.3	8	20	13%
Inadequate / poor quality supervision	1	8.3	4	10	25%
Poor data quality	1	8.3	4	10	25%
Inadequate tools / tools not updated regularly	0	0.0	4	10	0%
Lack of staff	0	0.0	3	7.5	0%
Inadequate health information to use	0	0.0	1	2.5	0%
Poor network	0	0.0	1	2.5	0%
Low health indicator	0	0.0	1	2.5	0%
No Answer	0	0.0	3	7.5	0%
	14		54		

4.14.3 Health Information System

In Table 34, of the 11 respondent interviewed, 54.5% (n=6) indicated that poor data quality is an effect of lack of skills in Health Information Management.

Table 34: "Lack of skills / training" as Cause is answered by 11 CDH.

Bottlenecks	N=11		N=40		Percentage of "Lack of skills"
	N	%	N	%	
Poor data quality	6	54.5	8	20	75%
Lack of ICT / automation	3	27.3	7	17.5	43%
Lack of tools	2	18.2	7	17.5	29%
Poor reporting / untimely data collection	2	18.2	5	12.5	40%
Lack of data utilization / data sharing	2	18.2	3	7.5	67%
Lack of staff (including technical staff)	1	9.1	8	20	13%
Lack of understanding / skills / capacity	1	9.1	6	15	17%
Poor communication / coordination	1	9.1	2	5	50%
Irregular review meeting	1	9.1	2	5	50%
Poor network / vastness	1	9.1	2	5	50%
Lack of funds / resources	0	0	2	5	0%
Lack of clear information	0	0	1	2.5	0%
No Answer	0	0	7	17.5	0%
	20				

4.14.4 Health Research, Financial Management, Human Resource Management, Human Resource Development, Communication and intra-departmental coordination (within CDoH)

From findings in the following domains: Health Research, Financial Management, Human Resource Management, Human Resource Development, Communication and intra-departmental Coordination (within CDoH) indicated that the most perceived effect to the bottlenecks is poor coordination with (60%) of the respondents indicating that the counties have unclear structures and frameworks (Table 35).

Table 35: Effect-Bottleneck-Cause relationship

Bottlenecks for Poor coordination	N=10		N=40		Percentage of Bottlenecks for Poor coordination
	N	%	N	%	
Unclear structure / framework	6	60	14	35	43%
Lack / erratic meeting	2	20	3	7.5	67%
Long duration in decision making / communication	1	10	2	5	50%
No Answer	1	10	17	42.5	6%
Shortage of staff / resources	0	0	2	5	0%
Lack of cooperation from other sectors	0	0	1	2.5	0%
Competing tasks	0	0	1	2.5	0%
	10		40		

4.14.5 Public Private Partnership

Of the 8 respondents interviewed in Public Private Partnership, (19%) indicated that the most perceived effects of the bottleneck was low achievement caused by lack of guidelines/law and mentorship framework at 50% (Table 36).

Table 36: Perceived Bottlenecks for "Low achievement Public Private Partnership

Bottlenecks for Low achievement	N=8		N=40		Percentage of Bottlenecks for Low achievement
	N	%	N	%	
Lack of guidelines / laws / mentorship framework	4	50.0	10	24.4	40%
Lack of engagement of Private partners	2	25.0	8	19.5	25%
PPP is at early stage / not disseminated	1	12.5	2	4.9	50%
Devolution challenges	1	12.5	1	2.4	100%
Lack of platform / TWG	0	0.0	5	12.2	0%
Inadequate partners	0	0.0	3	7.3	0%
Lack of knowledge	0	0.0	1	2.4	0%
No Answer	0	0.0	11	26.8	0%
	8		41		

Of the respondents interviewed, 40% indicated that there was no policy, legislation and framework structure led to lack of guidelines/ laws/mentorship framework which was the most perceived effect bottleneck, "Low achievement". The other cause of lack of guidelines as stated by respondents' was lack of understanding and skills (Table 37).

Table 37: Perceived Cause for "Lack of guidelines / laws / mentorship framework"

Causes for Lack of guidelines	N=10		N=40		Percentage of Causes for Lack of guidelines
	N	%	N	%	
No Policy / Legislation / framework / structure	4	40.0	7	17.1	57%
Lack of understanding / skills	4	40.0	9	22.0	44%
Others	1	10.0	2	4.9	50%
No Answer	1	10.0	12	29.3	8%
Poor communication / teamwork	0	0.0	3	7.3	0%
Devolution challenges	0	0.0	3	7.3	0%
Lack of commitment	0	0.0	2	4.9	0%
Inadequate resources	0	0.0	2	4.9	0%
Priority conflict	0	0.0	1	2.4	0%
	10		41		

4.14.6 Supervision and Mentorship, Service Delivery at Community level and Health Promotion

The bottlenecks in other domains such as Supervision and Mentorship, Service Delivery at Community level and Health Promotion were interrogated to understand the effects of bottleneck–causal relationship and the most perceived effect was "low community awareness/health seeking behaviour as indicated by 17.5% of the respondents. Of interviewed, 71% indicated that inadequate health promotion activities led to low community awareness.

Table 38: Perceived Bottlenecks for "Low community awareness/health seeking behavior

Bottlenecks for Low community awareness / health seeking behaviour	N=7		N=40		Percentage of Bottlenecks for Low community awareness
	N	%	N	%	
Inadequate health promotion activities	5	71.4	7	17.5	71%
Less staffing in health promotion	1	14.3	8	20	13%
Lack of capacity	1	14.3	3	7.5	33%
No county strategy / health promotion office at county level	1	14.3	2	5	50%
Inadequate funding / resources	0	0.0	8	20	0%
Language barrier / cultural beliefs and customs / religion	0	0.0	5	12.5	0%
No Answer	0	0.0	10	25	0%
	8		43		

4.15 Quality Management

The quality management bottlenecks were interrogated to understand the effects of bottleneck –causal relationship and the most perceived effect was "poor quality of services as indicated by 45% of the respondents. Of those interviewed, 33% indicated lack of skills/training while 22.2% lacked structure/team and departments that led to poor service delivery.

Table 39: Perceived Bottlenecks for "Poor quality of services" in Quality Management

Bottlenecks for Poor quality of services	N=18		N=40		Percentage of Bottlenecks for Poor service delivery
	N	%	N	%	
Lack of skills / training	6	33.3	8	20	75%
Lack of structures / team / department	4	22.2	6	15	67%
Lack of policy / guidelines / SOP / tools	3	16.7	4	10	75%
Lack of quality assurance of service given	3	16.7	6	15	50%
Inadequate resources	2	11.1	3	7.5	67%
Staff shortage (including specialists)	1	5.6	5	12.5	20%
Poor communication	0	0.0	1	2.5	0%
Low morale	0	0.0	1	2.5	0%
No Answer	0	0.0	8	20	0%
	19		42		

4.16 Commodity Procurement and Management

The bottlenecks in Commodity Procurement and Management were interrogated to understand the effects of bottleneck –causal relationship. Lack of knowledge and skills was a bottleneck in commodity procurement and management as indicated by 15% of respondents. Lack of knowledge and skills influenced frequent stock-outs as indicated by 10% of respondents.

Table 40: Lack of knowledge / skills" as Cause in Commodity Procurement and Management

Bottlenecks	N=9		N=40		Percentage of "Lack of skills"
	N	%	N	%	
Lack of skills	6	15	7	17.5	86%
Frequent stock-out	4	10	6	15	57%
Long-time procurement / centralized procurement	3	7.5	8	20	43%
Budget constraint	2	5	7	17.5	29%
Erratic supply	2	5	3	7.5	29%
Lack of departmental involvement in procurement	0	0	3	7.5	0%
Low staffing	0	0	1	2.5	0%
Speed in service delivery	0	0	1	2.5	0%
No Answer	0	0	9	22.5	0%
	17		45		

4.17 Slow/Uncoordinated responses as a bottleneck

The bottlenecks in other domains such as Infrastructure Management and Emergency Preparedness were interrogated to understand the effects of bottleneck –causal relationship. The most perceived effect of the bottlenecks was "slow/uncoordinated response as indicated by 35% of respondents. Of respondents interviewed, 28.6% indicated that weak/delayed response and implementation of plan caused slow uncoordinated responses.

Table 41: Perceived Bottlenecks for "Slow / uncoordinated response"

Bottlenecks for Slow / uncoordinated response	N=14		N=40		Percentage of Bottlenecks for Slow / uncoordinated response
	N	%	N	%	
weak / delayed response / implementation of plan	4	28.6	5	12.5	80%
Lack of emergency preparedness plan	3	21.4	8	20	38%
Lack of emergency preparedness team	3	21.4	5	12.5	60%
Lack of skills / knowledge / training	2	14.3	13	32.5	15%
Lack of fund / resources	2	14.3	6	15	33%
Inadequate means of referral	1	7.1	2	5	50%
Staff shortage	0	0.0	4	10	0%
Lack of equipment	0	0.0	4	10	0%
No Answer	0	0.0	5	12.5	0%
	18		52		

4.18 Lack of Skills and Training as a Bottleneck

The bottlenecks in other domains such as Strategic Planning, Budgeting and Overall Financial Management, Overall Monitoring and Evaluation, Intra-departmental Coordination, Project/ Program Management, Organizational Human Resource Management, Strategic Human Resource Development Planning, Negotiation and Conflict Resolution were interrogated. "Lack of skills/training" was indicated by 55.6% and lack of policy and guidelines by 44.4% of respondents caused a lack of confidence among CDH.

Table 42: "Lack of skills / training" as Cause of bottlenecks as perceived by 9 CDHs

Bottlenecks	N=9		N=40		Percentage of "Lack of skills"
	N	%	N	%	
Lack of skills / knowledge / training	5	55.6	8	20	63%
Lack of policy / guidelines	4	44.4	4	10	100%
Unclear mechanism	1	11.1	1	2.5	100%
Poor communication / consultation	0	0.0	2	5	0%
Political interference	0	0.0	2	5	0%
Ethical / integrity issues	0	0.0	1	2.5	0%
No Answer	0	0.0	24	60	0%
	10		42		

4.19 Availability of County HRD and CPD plans

The assessment set out to find out if counties had County HRD Plan. The HRH Development plans were rated on 5 scale that covered: Plan covers 5 years and a section of the County Health Strategy plan, including an annual work plan and budget of the CDoH, performance appraisal plans, in-service training schedule and post-basic/or post graduate training. The study found that out of 44 CHMT who responded, only 14 (31.8%) counties had county human resources development plans. These counties were: Homabay, Uasin Gishu, Kakamega, Kisii, Bungoma, Murang'a, Isiolo, Kajiado, Kitui, Makueni, Marsabit, Kwale, Mombasa and Lamu. In relation to the quality of the HRD plan, only 8 County HRD plans were part of the County Health strategic Plan that had the annual work plan and the CDoH budget. Of those, (6) County HRD work plans had Performance Appraisals while 4 included short course training schedules while only (3 had post-basic/or postgraduate trainings. Information contained in these plans included name of the training, participants and budget.

In terms of quality of County HRD Plan, the HRD plans were scored in a ranking of maximum five (5) marks meaning they covered all criteria. Homabay, Lamu and Bungoma scored maximum followed by Makueni, Kakamega,Mombasa,Uasin Gishu and Kisii.

The study sought to establish counties that had County Continuous Professional Development (CPD). These plans were available at the counties and among the 44 CHMT interviewed, 7 (15.9%) counties namely: Homabay, Kisii, Bungoma, Makueni, Bomet, Mombasa and Lamu had CPD plans. Of the counties interviewed, (32 did not have while 4 counties left the questionnaire blank. The enumerators confirmed that 6 counties namely: Homabay, Kisii, Bungoma, Tana River, Makueni and Lamu had CPD plans by looking at documentation. The (6) counties indicated that CPD plans included CPD coordinators and CPD organizer/providers. Five (5) indicated that their CPD plans also included the names or the course, and number of the participants.

In terms of quality, the CPD plans were ranked from a low of (1) to high of (3). In this ranking, Homabay, Kisii, Bungoma, Tana River and Lamu scored the maximum followed by Makueni at 2. The average score of the quality of the CPD plans was 2.8

In terms of training committees, (33) counties namely: Homabay, Trans Nzoia, West Pokot, Uasin Gishu, Migori, Kisii, Vihiga, Bungoma, Elgeyo Marakuwet, Nandi, Nyamira, Busia, Turkana, Mandera, Garissa, Murang'a, Embu, Meru, Nairobi, Samburu, Nyeri, Narok, Isiolo, Kajiado, Kitui, Makueni, Marsabit, Laikipia, Kericho, Kwale, Mombasa, Lamu and Machakos had functional training committees, 8 counties did not have functional committees while 3 counties left their questionnaires blank.

Only (5) counties namely: Homabay, West Pokot, Migori, Bungoma and Kericho had training committees trained on conducting a TNA. Twenty six (26) counties interviewed, indicated not having been on the conduct of a TNA while 2 counties did not respond to question.

Among the forty-four (44) counties where CHMTs were interviewed, 13 (39%) out of (19) counties namely: Homabay, Uasin Gishu, Kisii, Bungoma, Murang'a, Isiolo, Kajiado, Kitui, Makueni, Marsabit, Kwale, Mombasa, Lamu had County HRD Plans while 18.2% (n=6) out of 24 counties namely: Homabay, Kisii, Bungoma, Makueni, Mombasa, Lamu had a CPD plan.

4.20 Equality of In-service training to Healthcare workers with disabilities

During the TNA, CDoH and Medical Superintendents were interviewed on health workers with disability and identify those who have attended in-service training opportunities from 2012-2014. This was in line with the objective of the TNA in determining the equality of training for staff with disability and female staff. Out of the 116 staff members with disabilities, 89% (n=104) had attended trainings implying that the short course trainings for health workers with disabilities were equitably distributed.

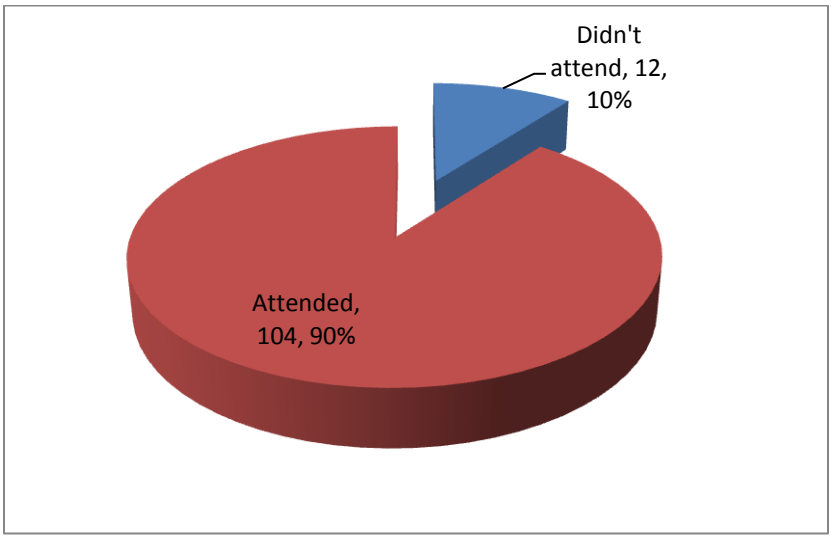

Figure 18: Percentage of staff with disability who attended an In-Service training programme

This assessment aimed at establishing if health workers have access to internet. This question was important to understand the possibility of scaling up alternative methods of training that includes e-Learning. The assessment established that 77% of the respondents had no access to wireless internet (WiFi).

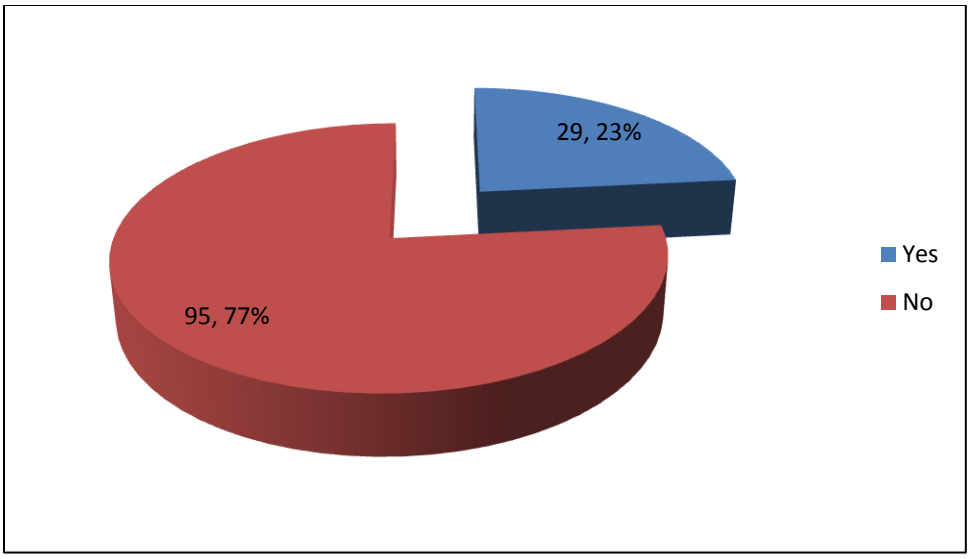

Figure 19: Percentage of staff having access to wireless internet

Chapter 5

5.1 Discussion

This TNA study will help the Ministry of Health and its partners in playing the decisive and proactive coordinative roles to realize a significant number of training interventions as a matter of urgency and setting the trend for years to come. This section discusses the skills gaps in specialist, training needs of the clinical staff, the CDoH staff and the CHMT/SCHMT.

5.1.1 Skill gaps in specialist

Skill gaps in health work force should be an exclusive focus on the numbers of healthcare workers. Additionally, equal importance should be given to the accessibility, acceptability and quality of the services provided. This TNA has considered only the number of the health workers required for effective service delivery by assessing the gap between the need for a health workforce, actual supply and the population's demand for health services. In December 2012, the United Nations General Assembly adopted resolution A/RES/63/33, giving further political impetus to universal health coverage and recognizing the need for an "adequate, skilled, well trained and motivated workforce". However, *the World Health Report 2006 - Working together for health* and several other reports since then have highlighted unacceptable variations in availability, distribution, capacity and performance of human resources for health and identified countries below a critical threshold of health workers, deemed to be generally necessary to achieve high coverage of essential health services.

The Kenya Health Sector Strategic and Investment Plan (KHSSP) 2013 – 2017 has called for prioritization of a minimum number of health workers in each facility, based on expected services to be delivered as defined in the KEPH. A staffing norm has been defined for each level, to outline the minimum health workers, by cadre, needed to assure provision of the KEPH. The KHSSP outlines Human Resources for Health Norms and Standards as one of its supporting documents that will facilitate guidance of its implementation.

Comparing the number of staff employed and the ideal numbers of staff per county as per the human resource for health norms and standards guidelines reveals that Kenya is one of the countries below a critical threshold of health workers, deemed to be generally necessary to achieve high coverage of essential health services. The assessment reveals that there exist a skills gaps in the health workforce with the number of health workers employed by the CDoH, public health facilities and FBO/private-for-profit health facilities being 31,412 (22.7%) of the recommended health work force of 138,266 as per norms and standards guidelines.

As per the norms and standards, three (3) counties namely: Kakamega, Kitui and Kisii require high numbers of healthcare workers for effective service delivery as currently they have 1,376, 1,138 and 1,168 health care workers against the ideal 6,256, 6,169 and 5,982 respectively. Nurses 19,735 (62.8 %), are the bulk of the health workforce employed by the CDoH followed by Clinical Officers 1,878 (5.97%) and Medical Officers of Health/General Practitioners 1,719 (5.47%). With the current population of Kenya at 44 million people, these findings translate to Nurses: population ratio at 4.28 per 10,000 people and 0.46 doctors per 10,000 people against the recommended 23 per 10,000 people.

This calls for a paradigm shift in the training of these Specialists and adoption of residence training and innovation of technology assisted trainings. There are gaps in Specialists at all cadres that need to be trained in order to turn around health indicators in Kenya.

5.1.2 Priority In-Service training to respond to KEPHS interventions

Health service delivery in Kenya has rapidly been expanding in scope and complexity over the last two decades. Several new interventions have been introduced in the health sector during this period, in addition to the existing interventions. The Kenya Health Strategic and Investment Plan 2013 – 2018 brings together the full range of expected interventions to be provided, by level of care, into the KEPH. This TNA analyzed the in -service training needs as per the KEPH package being provided at the different levels of care.

The findings on the KEPH's intervention reveal that the top ten in-service training needs are: emergency obstetric and neonatal care (15.1%); HIV testing and counseling, ARV prophylaxis for children born of HIV+ mothers (14.0%); Management of abnormal pregnancies (12.3%); HIV testing and counselling using new algorithm (11%); Integrated Management of Childhood Illness (IMCI) (6.7%); Health education on appropriate maternal, infant and young child feeding (6.1%); basic life support (5.8%); cervical cancer screening for all women of reproductive health age group (4.8%); facility disaster response planning (3.8%); and event based surveillance (3.7%). The respondents showed a low attitude towards attending training in x-ray (0%), followed by medical conditions management (0%), and ultra sound scan (0%).

5.1.3 Training needs of CDoH/CHMTs

From the findings in the management section, it is evident that there are major training gaps at the CDoH. High priority short course trainings for the CDoH staff are: Leadership and Management (24%); Senior Management training on health (17%); supervisory skills management (8%); and Strategic Planning leadership (7%). Other short course trainings are: Human resource management (7%); Computer/ICT Literacy (7%); financial management (7%); planning and budgeting (7%); and Monitoring and Evaluation (4%). According to the CDH on

the domains enquired,, intradepartmental coordination (within CDoH) and service delivery at Hospital (levels 4-5) had the highest satisfaction in performance of the CHMT at (50%) and (43.6%) followed by health research at (42.5%). CDH were dissatisfied with the performance of CHMT. In most of the domain areas the CDH were averagely satisfied with their CHMT performance. Other domain areas that the CDH had little satisfaction according to the findings were: planning & budgeting, monitoring & evaluation, human resource development and PPPs. These domains require trainings to improve on the performance of the staff.

From the foregoing, out of 46 counties only five (5) CDH and eleven (11) CHMT reported satisfaction and experience in the various management domains. Other CDH and CHMT were either less experienced or less satisfied in management of the CDoH. This may indicate that most CDoH management are struggling daily running of the departments. Urgent intervention to facilitate more efficiency as transition into the devolved system of governance continues. These findings are similar to the Second National Assessment on Leadership, Management and Government in Kenya Leadership (2015) that stated that transition to a devolved governance system has not been smooth and the challenges are far from over.

These are in line with other studies that have been done before in health systems management. The Kenya Service Provision Assessment (KSPA) report of 2010 and 2013 equally identified several prevailing constraints, namely:

1) Declining health sector expenditure
2) Weak management support practices
3) Inadequate management skills at the district level
4) Over-centralized decision making
5) Worsening poverty levels
6) Increased burden of disease

In particular, the 2010 KSPA report revealed that while 66% of the surveyed health facilities had routine management committee meetings, only 32% documented a recent meeting. This information presents an uncertainty of the leadership and management practices in place to address these constraints while Byl et al (2013) in a report by KPMG on devolution of healthcare services in Kenya also highlights two key issues: the importance of systematic capacity building for national and sub-national levels in preparation for the new responsibilities in management and governance and putting in place mechanisms to prevent fraud and corruption at all levels in order for devolution to succeed.

The Second Leadership, Management and Governance (LMG) assessment (2015) noted the LMG capacity gaps in the health sector to include: team building, planning tools including the

budgeting process, supervisory functions, monitoring and evaluation, stakeholder engagement (especially communities) in planning and monitoring of health interventions, motivation of health workforce by Governors as gaps in management and leadership competencies, weak governance practices among committees and facility boards. The assessment noted that the ability to conduct research and use findings to inform decision making and policy is gaining prominence in most pre-service training institutions and that may explain the relatively low percentage of 46%, that increases slightly to 60% at the workplace. This is similar to the findings in this study where the CHMT indicated that they had less confidence and the CDH indicated that they had less satisfaction in CHMT performance in health research respectively.

In relation to the level of confidence in management domain, of the domains enquired of, the CDH had the highest level of confidence in Leadership and Guidance (66.7%) followed by Intra-departmental Coordination (50%). Some confidence in Human resource management (47.4%) and strategic planning (46.2%) was reported that fell below average. This is consistent with the findings in their experience level where Intra-departmental Coordination and Strategic Plan are the leading domains. Other domains that CDH had little confidence and were areas of concern include: Organizational Human Resource Development (37.1%); Budget and Financial Management (23.7%); Negotiation and Conflict Resolution and Project/Program Management (15.2%).

According to the study findings, the level of experience of the CHMT, on the key domain areas questioned, Health Information Management (45.5%) and Intra-departmental Coordination (within CDoH) (46.5%) are the domains reported to have highest level of experience yet still fell below average.

In relation to the level of confidence of the CHMT in key domain areas of management questioned, most of the CHMT had no confidence in carrying out their duties as only 41.5% indicated being confident in health promotion while 40.9% were confident in communication. Majority of the CHMT reported to have less confidence, a little confidence or no confidence at all in most of the management domains as follows: Human Resource Development (82.9%); Planning and Budgeting (70%); Monitoring and Evaluation (63%); Intra-departmental coordination with other sectors (59.1%); and Human Resource Management (52.4%). This is implies that majority of CHMT are not able to effectively deliver on mandates. Capacity building is required for the CHMT in all the 46 counties according to this study.

In relation to findings above, there is consistency in the CHMT's levels of experience and confidence. The findings showed that the CHMT had poor experience in all the other domains of management such as: Human Resource Development, Financial Management, PPPs,

Infrastructure Management and Quality Management. Threshold in most management domain areas that are related to clinical and service delivery such as Service Delivery at Primary Health Care facility level (Level 2-3), Service Delivery at Hospital level (Level 4-5) was met and implies a need for capacity building interventions to incorporate a component of hands-on training such as on the job Training (OJT) or follow-up mentorship.

Kenya has made significant progress, including scaling up the recruitment of additional health workers, reviewing health worker salaries, benefits, strengthening human resource policies and practices. Nevertheless, there are several health workforce challenges such as: inadequate and inequitable distribution of health workers; high staff turnover; weak development, planning and management of the health workforce; deficient information systems; high migration; and an inadequate performance management framework at all levels.

The Third Global Forum on Human Resources for Health held in Recife, Brazil in 2013 recognized, as one of its resolutions, "Investment in HRH remains low; fundamental discrepancies exist between health worker supply and demand; HRH planning is often weakened by uncoordinated interventions on single issues, focusing on an individual cadre or illness and not on prevention; and the adoption and implementation of effective policies remains uneven". (Resolution # 6, Recife Declaration on HRH, 2013). Investment in leadership, management, and governance practices across the human resources for health should bolster effective performance of the workforce and health system.

In the Second Leadership Management and Governance assessment, a significant proportion of respondents were either well or very well prepared for their current positions in health management as confirmed by73.8% of survey and 87.1% key informant guide respondents. Middle level managers (55%) indicated that competencies in leading, managing and governing were mainly acquired through in service training and to some extent this built on those acquired at pre-service training (45%). Assessment of the short course training covered several senior management courses relevant to health services management. However, in the analysis these were lumped together and not distinguished by target group or sponsor others. Generally, a slightly proportion of senior and middle level managers were exposed to management and leadership training compared to governance. From a study by GIZ the CHMT in Vihiga, Kwale and Kisumu had been over trained. The findings above contradict the findings of the TNA in relation to the confidence of CDH and CHMT. This raises the following questions: Are Middle-level management more competent compared to their Senior-level counterparts? Are the Health Officers at the counties eligible for these trainings? Is the training content appropriate for the management needs on the counties?

5.1.4 Bottlenecks, causes and effects Lack of knowledge, skills and capacity leading to poor service delivery

From the study findings, lack of adherence to strategic plan and lack of knowledge, skills and capacity in planning and budgeting have adverse effect on the performance of CHMT in the CDoH. The effects of these bottlenecks have resulted into poor service delivery, poor project planning and budgeting. These findings are similar to those found in response to M& E (Table 33). The lack of skills among Management in M&E has resulted to poor service delivery.

In the Health Information Management, poor data quality was found as the leading bottleneck, while in commodity procurement and management, lack of knowledge and skills recurred as bottlenecks that influenced frequent stock out.

In Quality Management, lacks of skills/training, as well as lack of structure/team in the departments were perceived as the causes of poor service delivery.

The bottlenecks in other domains such as: Strategic Planning, Budgeting and Overall Financial Management, Overall Monitoring and Evaluation, Intra-departmental Coordination, Project/Program Management, Organizational Human Resource Management, Strategic Human Resource Development Planning, Negotiation and Conflict Resolution were interrogated and "lack of skills/training (55.6%)" and lack of policy and guidelines (44.4%) caused a lack of confidence among CDH.

From the foregoing, lack of knowledge, skills and training, rather than lack of budget and others, has been identified as major bottlenecks in the management of CDoH as stated by CHMT and CDH. There is urgent need to build capacity of the CDH and CHMT to enable effective performance of managerial duties and provision of quality service.

5.1.5 Low Achievement, Low Community awareness, slow/uncoordinated response, weak/delayed response.

The other bottlenecks that have been raised from the findings include low achievement, low community awareness, poor coordination, lack of guidelines/law and mentorship framework finding in the following domains; Health Research, Financial Management, Human Resource Management, Human Resource Development, Communication and intra-departmental Coordination (within CDoH) indicate that the leading bottleneck is poor coordination due to unclear structures and frameworks.

In the Public Private Partnerships, domain the leading bottlenecks are lack of guidelines/law and mentorship framework. Lack of policy, legislation and framework structure are perceived as the cause of "Lack of guidelines / laws / mentorship framework".

From these findings, various bottlenecks have hindered management by the CDH and CHMT. This has resulted in the slow progress towards quality and effective service delivery at the CDoH and eventual Universal Health Coverage by 2030 as stipulated in The Vision 2030. There is an urgent need to intervene in this situation and stakeholders should rally behind the Government of Kenya, Ministry of Health to come up with solutions. Training in the various management domains is a starting point, but coordination of the training processes that meet required needs and standards is very critical. This avoids duplications and overlapping by various players.

Other areas of capacity building may require strategic planning and structuring by the CDoH management systems, post trainings follow up, mentoring and supportive supervision. Literature shows that weak post training follow up strategies may explain in part the reason behind HSM graduates not sustaining some of quick wins notably soon after training. Notable LMG capacity gaps include: team building, planning tools including the budgeting process, supervisory functions, monitoring and evaluation, stakeholder engagement (especially communities) in planning and monitoring of health interventions, motivation of health workforce by the Governors as gaps in management and leadership competencies, weak governance practices among committees and facility boards. The ability to conduct research and use findings to inform decision making and policy is gaining prominence in most pre-service training institutions and that may explain the relatively low proportion (46%) that increases slightly to 60% at the workplace. This suggests that training institutions need to monitor the market and demand for HSS competencies more closely effectively.

Chapter 6

6.1 Introduction

The Third Global Forum on Human Resources for Health[16] provided an opportunity for an inclusive dialogue with many stakeholders involved in efforts to develop human resources in countries and globally. The Forum shed light on the meaning of universal health coverage in relation to human resources for health by stating that universal health coverage is not a distant dream; it is feasible journey, it is wanted and many countries, including Kenya, are progressing towards this goal. This TNA is therefore a step in the right direction, as it constitutes the basis for the universal health coverage.

6.2 Specialists

From these findings, the focus on the training of Specialists should be: Cardio-surgeons, Neuro-surgeons, Oncologists, Nephrologists, lung and skin Clinical Officers and Anaesthetics Clinical Officers; Cardiology Nurses, Forensic Nurses, Dental Nurses, Accident and Emergency Nurses and Oncology Nurses. This calls for a paradigm shift in the training of these Specialist groups to address the gaps. These training approaches may include, residence training and employment of technology assisted training.

6.3 In-Service Trainings

As per the TNA findings, 8,199 health workers need training to deliver KEPH. Additionally, training should be need based and focus on the priority areas to deliver KEPH. The top priorities include: emergency obstetric and neonatal care, HIV testing and counseling, ARV prophylaxis for children born of HIV+ mothers, management of abnormal pregnancies, Integrated Management of Childhood Illness (IMCI), Health education on appropriate maternal, infant and young child feeding, basic life support, cervical cancer screening for all women of reproductive age group, facility disaster response planning and event based surveillance.

6.4 Leadership, Management and Governance

CDoH need to build capacity of CHMT to address the following priority areas for in-service training: Leadership and Management, Senior Management training on health, supervisory skills management, strategic planning leadership, human resource management, Computer/ICT Literacy, Financial management, planning & budgeting and Monitoring & Evaluation.

The findings of this TNA reveal that there is equality and equity of in-service training for staff with disability and female staff. There needs to be urgent intervention to enable CDH be more efficient as they transition to the devolved system of governance.

[16] Report of the Third Global Forum on Human Resources for Health, 10-13 November 2013 | Recife, Brazil

The bottleneck analysis implies that the strategic plan formulation, work plan formulation, budgeting, implementation and monitoring are fragmented. Practical integration of these management works should be well emphasized in capacity building interventions. The foregoing is an indication that comprehensive training curriculum is necessary to tackle broad aspects of each Management domain.

There are skill gaps have slowed progress towards quality and effective service delivery of the CDoH and eventual universal coverage by 2030 as stipulated in The Vision 2030. There is an urgent need to intervene in this situation and for stakeholders to rally behind the Government of Kenya, Ministry of Health to come up with solutions. Training in the various management domains and coordination of the training processes to ensure needs and standards are met. Lack of continuing professional education also affects choices made by potential new recruits. The MoH, urges all stakeholders to actively participate in the realisation of the In-Service training plans in the Ministry.

6.5 Conclusions

Key highlights from the training needs assessment reveal that health care workers employed in the County Departments of Health according to the County Directors of Health stands at 23% compared to the norms and standard guidelines. This means that delivering Kenya Essential Package for Health (KEPH) is jeopardized due to inadequate staffing levels where counties such as Turkana, Uasin Gishu, Wajir, Kajiado and Garissa operate at staffing levels below 10%. Even though West Pokot had a staffing level of 98% there are only 2 Obstetric Gynaecologists employed and there are no other Specialist Surgeons. There are no Cardiologists, Oncologists, Nephrologists employed in the Counties. Clinical Officers are least employed in Samburu, Nairobi, Wajir, Bomet and Lamu Counties. Nurses specialized in Forensics, Dentistry, Accident and Emergency are the fewest in the Counties. There is no nurse specialized in Oncology.

Assessment of in-service training required to deliver KEPH identified top 10 priority areas for short course as: Emergency Obstetric and Neonatal Care; HIV testing and counselling/ARV prophylaxis for children born with HIV; Management of abnormal pregnancies; HIV counselling and testing (using new algorithm); Integrated Management of Childhood Illness; Health Education on appropriate maternal, infant and young child feeding; Basic Life Support; Cervical cancer screening for all women of reproductive age; Facility disaster response planning; and Event based surveillance. Training courses in x-ray, medical conditions management and ultra sound were rarely reported among respondents interviewed during the TNA.

The TNA identified the top 5 current and desired skills in leadership and management for CHMT and CDoH as follows: Leadership and management; Senior management training on health; Supervisory skills management; ICT skills; and Human resource management. It was identified

that shortage of some skill sets was not due to staffing but lack of capacity building and structures in some areas such as M&E and Standards, Quality Assurance & Regulations as highlighted in the TNA report. There are 10 Counties lacking staff in Administration and Management.

Assessment of the capacity of the CDH, CHMT and SCHMT revealed that few County Directors of Health were satisfied with the CHMT performance. Health research recorded a lack of satisfaction at all. A little satisfaction was reported in Human resource development and Public private partnerships. The County Directors of Health reported being sometimes satisfied by scoring the following the best: Communication; Quality management; and M& E. Half of the County Directors of Health were more satisfied with Inter-departmental coordination within CDoH and this is validated by the frequency of degree of satisfaction about CHMT work as perceived by County Directors of Health. In terms of experience of County Directors of Health, Intra-departmental coordination and leadership & guidance were ranked highest whereas budget management, negotiation & conflict resolution and project/program management were ranked the least. CHMT respondents reported more experience and confidence in Intra-departmental Coordination and Health Information Management whereas less experience and confidence was reported in financial management, public private partnerships, health research, quality management, human resource development, planning & budgeting, monitoring & evaluation and emergency preparedness & response. Counties and Health Inter-agency Coordination Committee in 9 clusters were colour-coded in maps of Kenya and performance tabulated to demonstrate and levels of confidence and satisfaction tabulated as reported by County Directors of Health.

It was established that there is equitable distribution of in-service training to healthcare workers with disabilities as 90% reported attendance of short course trainings.

6.6 Recommendations

There is an urgent need to hire healthcare workers to bridge the gaps especially the Specialists that are lacking in the Counties. This hiring process should target non-Specialist healthcare workers to enable the delivery of KEPH. Task shifting has been recommended in resource limited settings as temporary measure as long term solutions are sought. Staff will require training in areas that they are less skilled in for better outcomes.

In-service training needs identified and mapped by County should be addressed to ensure that healthcare workers are equipped to optimally deliver KEPH. There are short courses that can organized using the cluster based system where lead trainers would be sent to train trainers who will be entrusted transfer these skills to other healthcare workers in the Counties. These

trainings need to be budgeted at the County levels. Other thoughts for bridging the health workers gaps in the short term include development of *e/m*-learning (use of distance learning) methods as an innovative approach to In-Service Long and Short Course training. In the midterm a review and development of core In-Service and pre-service curricula guidelines, strengthening of continuous professional development (CPD) accreditation systems as well as strengthen the human resources management (HRM) systems among others. Counties without HRD and CPD plans can learn from Counties with already established plans to avoid re-inventing the wheel.

Some of the strategies for the long term bridging of the gaps are the linkage between new policies and the training institutions and regulatory bodies that need to develop the workforce to carry out those new policies. There is also need to optimize and structure or standardize the curricula for healthcare In Service and pre-service training to deliver on national priorities such as KEPH.

There is need for in service training in the various management domains to be addressing the gaps identified in order for CHMT and the CDoH to actualize health in devolved system of governance.

The TNA findings indicate the need for a comprehensive training curriculum is to tackle broad aspects of each of the management domains

The following are recommendations in relation to the Health Systems Management;

- There is need for the CHMT and CDoH to routinely collect data on the total size of the health workforce with extensive data reporting system. The lack of reliable, up-to-date information would greatly restrict the ability of policy-makers at national levels to develop evidence based In-Service training strategies.
- There are already existing curriculums for Health Systems Management training by various service providers. It is necessary to compare the content of these curriculums with the findings of the Training Needs assessment to see if they address the county needs or if they need review to conform to the current county situations.
- Considering that there is a situation analysis on the core functions of CDoH currently going on, other assessments are required to establish the training skills against the clarified core functions of the CDoH.
- Management courses should be introduced in health related courses within the various training of healthcare professionals.
- Sharing of best practices by Counties utilizing the 9 clusters as identified by HRH ICC

Annexes

Annex 1: Number of ideal and employed health workers per county

County	Nutritionists		Dental staff		Diagnostics and Imaging staff		Medical Engineering Staff		Other specialist at Post-Basic and postgraduate level		Medical Laboratory Scientists	
	Ideal as per CDH	Employed	Ideal as per CDH	Employed	Ideal as per CDH	Employed	Ideal as per CDH	Employed	Ideal as per CDH	Employed	Ideal as per CDH	Employed
Bomet	22	1	14	3	7	2	7	4	52	12	40	5
Bungoma	15	4	32	9	26	4	43	14	2	0	44	14
Busia	17	6	28	3	29	5	23	4	0	14	47	22
Elgeyo Marakwet	25	7	14	5	34	9	15	6	6	2	11	9
Embu	30	8	27	5	44	7	22	9	40	12	44	23
Garissa	12	8	8	7	35	7	13	3	0	0	25	20
Homa Bay	24	2	24	4	18	8	15	4	66	17	9	19
Isiolo	20	5	12	3	20	3	20	5	8	0	31	18
Kajiado	4	1	6	4	4	2	9	2	57	38	3	2
Kakamega	10	3	27	6	32	6	11	8	268	162	49	18
Kericho	15	6	20	10	29	10	16	8	8	8	26	17
Kilifi	59	13	44	8	43	5	54	14	644	49	79	24
Kirinyaga	17	7	9	10	14	5	21	8	2	2	38	25
Kisii	43	10	34	11	26	9	24	12	0	0	60	32
Kisumu	43	2	25	11	50	14	41	9	12	15	62	20
Kitui	30	4	22	8	10	4	18	7	0	0	32	21
Kwale	20	2	20	4	26	2	22	3	28	19	23	19
Laikipia	8	4	15	6	13	3	6	6	0	2	20	20
Lamu	6	2	11	3	14	3	13	6	0	0	11	9
Machakos	41	5	33	18	28	8	22	10	0	0	59	29
Makueni	19	4	28	7	28	4	17	8	40	11	21	13
Mandera	55	10	15	3	28	3	23	4	0	0	30	8
Marsabit	10	7	12	2	20	4	8	4	40	12	15	12
Meru	27	6	31	9	64	10	34	9	17	3	44	21
Migori	60	3	38	5	18	3	22	2	16	6	68	15
Mombasa	6	1	9	4	6	2	7	1	105	61	12	10
Murang'a	20	7	12	6	28	4	17	11	0	0	24	14
Nairobi	3	5	13	6	21	8	9	3	0	0	20	15
Nakuru	49	14	30	18	29	11	28	15	135	113	52	10
Nandi	17	4	14	4	18	4	23	13	0	0	30	20
Narok	17	4	17	11	33	7	9	3	11	2	46	22
Nyamira	26	2	17	1	32	2	19	2	0	0	26	12
Nyandarua	22	2	14	4	7	4	7	3	0	4	40	13

County	Nutritionists		Dental staff		Diagnostics and Imaging staff		Medical Engineering Staff		Other specialist at Post-Basic and postgraduate level		Medical Laboratory Scientists	
	Ideal as per CDH	Employed	Ideal as per CDH	Employed	Ideal as per CDH	Employed	Ideal as per CDH	Employed	Ideal as per CDH	Employed	Ideal as per CDH	Employed
Nyeri	13	3	17	9	38	10	17	11	52	32	36	16
Samburu	10	2	8	2	14	3	7	1	0	0	9	6
Siaya	8	2	5	1	38	3	10	2	0	0	14	4
Taita Taveta	16	3	14	6	16	6	15	5	151	54	23	16
Tana River	30	4	12	4	12	0	20	4	8	12	20	16
Tharaka Nithi	27	6	31	4	32	5	18	6	0	0	43	21
Trans Nzoia	11	3	10	5	8	5	13	6	0	0	8	11
Turkana	8	6	15	8	4	0	17	6	52	28	0	0
Uasin Gishu	11	3	20	0	17	0	8	1	0	0	38	8
Vihiga	27	2	28	5	37	2	21	4	60	10	38	12
Wajir	78	17	28	6	32	3	24	6	0	0	30	10
West Pokot	6	3	0	4	0	2	15	4	0	2	15	9
Grand Total	**1037**	**223**	**863**	**272**	**1082**	**221**	**823**	**276**	**1880**	**702**	**1415**	**680**

Annex 2: Top ten priority In-service training needs-per county to deliver KEPH

S/No.	County	Priority In Service Short Course Training Needs
1	Bomet	Cervical cancer screening for all women in the RH age group
		Dialysis
		Basic life support
		Integrated Management of Childhood Illness (IMCI)
		Advanced life support (level 5 hospitals only)
		Emergency Obstetric and Neonatal Care
		Health education on appropriate maternal, infant and young child feeding
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal fun
		HIV Counseling and Testing (using New Algorithm)
		Breast cancer screening for all women over 18 years (level 5 hospitals only)
2	Bungoma	Ultra sound scan
		HIV Counseling and Testing (using New Algorithm)
		Integrated treatment of common ailments
		Facility disaster response planning
		Basic life support
		Evacuation Services for Injuries
		Management of medical emergencies
		Management of pregnancy complications
		Integrated Management of Acute Malnutrition(IMAM)
		Pelvic Inflammatory Disease management
3	Busia	HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Disaster management
		Food safety & quality control
		Facility disaster response planning
		Cervical cancer screening for all women in the RH age group
		Infectious disease control
		insect, vector and vermin control
		Integrated Management of Childhood Illness (IMCI)
		Basic life support
		Management of surgical emergencies (including trauma care)
4	Elgeyo Marakwet	Medical conditions management
		Management of paediatric in patients
		Emergency Obstetric and Neonatal Care
		Integrated Management of Childhood Illness (IMCI)
		Cervical cancer screening for all women in the RH age group
		Respiratory conditions management
		care for the new born
		Management of abnormal pregnancies
		Facility disaster response planning
		Tuberculosis management
5	Embu	HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary

S/No.	County	Priority In Service Short Course Training Needs
		feeding practices in HIV
		Dialysis
		Advanced life support (level 5 hospitals only)
		Emergency Obstetric and Neonatal Care
		Screening for drug resistant TB (level 5 hospitals only)
		Management of medical emergencies
		Paediatric conditions management
		Post Exposure Prophylaxis
		HIV Counseling and Testing (using New Algorithm)
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal fun
6	Garissa	Outbreak investigation
		Emergency Obstetric and Neonatal Care
		Advanced life support (level 5 hospitals only)
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal fun
		Management of paediatric in patients
		Basic life support
		Cervical cancer screening for all women in the RH age group
		Management of gynaecological conditions in patients
		Integrated Management of Childhood Illness (IMCI)
		-injection safety, medical waste mgt, Laboratory biosafety & biosecurity
7	Homa Bay	x-ray
		Evacuation Services for Injuries
		Emergency Obstetric and Neonatal Care
		Disaster risk reduction interventions
		Ultra sound scan
		Disaster management
		Management of medical emergencies
		Medical conditions management
		Basic life support
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal fun
8	Isiolo	Ear Nose and Throat conditions management
		HIV/AIDS management
		Dialysis
		Tuberculosis management
		Cervical cancer screening for all women in the RH age group
		palliative care
		Management of gynaecological conditions
		Breast cancer screening for all women over 18 years (level 5 hospitals only)
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal fun
		Peadiatrics conditions management

S/No.	County	Priority In Service Short Course Training Needs
9	Kajiado	Management of medical emergencies
		Facility disaster response planning
		Occupational health and safety
		Emergency Obstetric and Neonatal Care
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Event based surveillance
		Evacuation Services for Injuries
		Disaster management
		Integrated Management of Childhood Illness (IMCI)
		Management of pregnancy complications
10	Kakamega	Dialysis
		Basic life support
		Emergency Obstetric and Neonatal Care
		Advanced life support (level 5 hospitals only)
		x-ray
		Facility disaster response planning
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal fun
		Ultra sound scan
		Chemotherapy
		Tuberculosis management
11	Kericho	Management of medical emergencies
		Disaster management
		Emergency Obstetric and Neonatal Care
		Management of pregnancy complications
		Facility disaster response planning
		Breast cancer screening for all women over 18 years (level 5 hospitals only)
		palliative care
		annual prostate examination
		Dialysis
		Basic life support
		Cervical cancer screening for all women in the RH age group
12	Kiambu	Management of surgical emergencies (including trauma care)
		Basic life support
		Evacuation Services for Injuries
		Advanced life support (level 5 hospitals only)
		Disaster management
		Management of medical emergencies
		Outpatient management of minor injuries
		management of surgical inpatients
		Integrated treatment of common ailments
		Disaster risk reduction interventions
13	Kilifi	Cervical cancer screening for all women in the RH age group
		Communicating with, and counseling patients on substance abuse (tobacco, alcohol, cocaine,

S/No.	County	Priority In Service Short Course Training Needs
		Heroine, glue, khat, etc)
		HIV Counseling and Testing (using New Algorithm)
		Management of abnormal pregnancies
		Disaster management
		Basic life support
		Outpatient management of minor injuries
		Management of surgical emergencies (including trauma care)
		Emergency Obstetric and Neonatal Care
		Management of gynaecology in patients
14	Kirinyaga	Facility disaster response planning
		Disaster management
		Emergency Obstetric and Neonatal Care
		Focused Antenatal Care
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Integrated Management of Childhood Illness (IMCI)
		Management of pre-term labour
		Management of medical emergencies
		Integrated Management of Acute Malnutrition(IMAM)
		Management of surgical emergencies (including trauma care)
15	Kisii	Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
		Emergency Obstetric and Neonatal Care
		HIV Counseling and Testing (using New Algorithm)
		Microbiology diagnostic tests (virology, bacteriology, parasitology
		Management of pregnancy complications
		Lipid profiling
		Advanced life support (level 5 hospitals only)
		Management of medical emergencies
		Screening for drug resistant TB (level 5 hospitals only)
		Integrated Management of Childhood Illness (IMCI)
16	Kisumu	Disaster management
		Evacuation Services for Injuries
		Facility disaster response planning
		Emergency Obstetric and Neonatal Care
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
		Disaster risk reduction interventions
		Management of medical in patients
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV

S/No.	County	Priority In Service Short Course Training Needs
		Management of surgical emergencies (including trauma care)
		Cervical cancer screening for all women in the RH age group
17	Kitui	Management of paediatric in patients
		Basic life support
		Emergency Obstetric and Neonatal Care
		Management of surgical in patients
		Advanced life support (level 5 hospitals only)
		Management of medical emergencies
		Caesarean section
		Endoscopy
		HIV/AIDS management
		Management of abnormal pregnancies
18	Kwale	Emergency Obstetric and Neonatal Care
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Basic life support
		Management of medical emergencies
		Screening for Animal Transmitted Conditions
		Management of pregnancy complications
		Management of surgical emergencies (including trauma care)
		Integrated Management of Childhood Illness (IMCI)
		Management of gynaecology in patients
		Management of abnormal pregnancies
19	Laikipia	HIV Counseling and Testing (using New Algorithm)
		Disaster management
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Basic life support
		Cervical cancer screening for all women in the RH age group
		Emergency Obstetric and Neonatal Care
		Breast cancer screening for all women over 18 years (level 5 hospitals only)
		Ultra sound scan
		Integrated Management of Childhood Illness (IMCI)
		Endoscopy
20	Lamu	HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Management of pregnancy complications
		Pelvic Inflammatory Disease management
		Management of surgical emergencies (including trauma care)
		Integrated treatment of common ailments
		Disaster management
		Care for the newborn
		Integrated Management of Acute Malnutrition(IMAM)

S/No.	County	Priority In Service Short Course Training Needs
		Management of gynaecology in patients
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
21	Machakos	Emergency Obstetric and Neonatal Care
		Basic life support
		Management of abnormal pregnancies
		Integrated Management of Childhood Illness (IMCI)
		Cervical cancer screening for all women in the RH age group
		Management of surgical emergencies (including trauma care)
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Management of medical emergencies
		Breast cancer screening for all women over 18 years (level 5 hospitals only)
		HIV/AIDS management
22	Makueni	Focused Antenatal Care
		Event based surveillance
		Cervical cancer screening for all women in the RH age group
		Emergency Obstetric and Neonatal Care
		Post Exposure Prophylaxis
		Management of pregnancy complications
		Management of medical emergencies
		Facility disaster response planning
		Integrated Management of Childhood Illness (IMCI)
		Screening for drug resistant TB (level 5 hospitals only)
23	Mandera	Emergency Obstetric and Neonatal Care
		Focused Antenatal Care
		Management of surgical in patients
		Screening for drug resistant TB (level 5 hospitals only)
		Management of medical in patients
		Integrated Management of Childhood Illness (IMCI)
		Advanced life support (level 5 hospitals only)
		Paediatric conditions management
		Management of surgical emergencies (including trauma care)
		Disaster risk reduction interventions
24	Marsabit	Emergency Obstetric and Neonatal Care
		Screening for drug resistant TB (level 5 hospitals only)
		Communicating with, and counseling patients on substance abuse (tobacco, alcohol, cocaine, Heroine, glue, khat, etc)
		Disaster management
		Basic life support
		Disaster risk reduction interventions
		Cervical cancer screening for all women in the RH age group
		Management of medical emergencies

S/No.	County	Priority In Service Short Course Training Needs
		Advanced life support (level 5 hospitals only)
		HIV Counseling and Testing (using New Algorithm)
25	Meru	Integrated Management of Childhood Illness (IMCI)
		Integrated Management of Acute Malnutrition(IMAM)
		Infection prevention
		Event based surveillance
		HIV Counseling and Testing (using New Algorithm)
		Disaster management
		Lung Function Testing
		Basic life support
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Management of medical emergencies
26	Migori	Cervical cancer screening for all women in the RH age group
		Occupational health and safety
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Integrated treatment of common ailments
		Emergency Obstetric and Neonatal Care
		-injection safety, medical waste mgt, Laboratory biosafety & biosecurity
		Screening for sickle cell anaemia
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
		Caesarean section
		Communicating with, and counseling patients on substance abuse (tobacco, alcohol, cocaine, Heroine, glue, khat, etc)
27	Mombasa	Basic life support
		Integrated treatment of common ailments
		Emergency Obstetric and Neonatal Care
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
		Management of medical emergencies
		Focused Antenatal Care
		Paediatric conditions management
		Basic life support
		Facility disaster response planning
		Management of surgical emergencies (including trauma care)
28	Murang'a	Infection prevention
		Occupational health and safety
		Health education on appropriate maternal, infant and young child feeding
		HIV Counseling and Testing (using New Algorithm)

S/No.	County	Priority In Service Short Course Training Needs
		Management of medical emergencies
		Post Exposure Prophylaxis
		Management of STI
		Cervical cancer screening for all women in the RH age group
		Annual prostate examination for all men over 50 years
		Emergency Obstetric and Neonatal Care
29	Nairobi	Disaster management
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		HIV Counseling and Testing (using New Algorithm)
		Integrated treatment of common ailments
		Facility disaster response planning
		Breast cancer screening for all women over 18 years (level 5 hospitals only)
		Screening for drug resistant TB (level 5 hospitals only)
		Annual prostate examination for all men over 50 years
		Disaster risk reduction interventions
		Cervical cancer screening for all women in the RH age group
30	Nakuru	Management of surgical emergencies (including trauma care)
		Post Exposure Prophylaxis
		Screening for drug resistant TB (level 5 hospitals only)
		Surgical conditions management
		Facility disaster response planning
		Cervical cancer screening for all women in the RH age group
		Management of medical emergencies
		Management of pregnancy complications
		Post-partum care
		Integrated treatment of common ailments
31	Nandi	Dialysis
		Integrated Management of Acute Malnutrition(IMAM)
		Emergency Obstetric and Neonatal Care
		Management of surgical emergencies (including trauma care)
		HIV/AIDS management
		Cervical cancer screening for all women in the RH age group
		Management of medical emergencies
		Disaster management
		Focused Antenatal Care
		Advanced life support (level 5 hospitals only)
32	Narok	Respiratory conditions management
		Cervical cancer screening for all women in the RH age group
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Basic life support
		Lung Function Testing
		Integrated Management of Childhood Illness (IMCI)

S/No.	County	Priority In Service Short Course Training Needs
		Disaster management
		Breast cancer screening for all women over 18 years (level 5 hospitals only)
		Skin conditions management
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
33	Nyamira	HIV Counseling and Testing (using New Algorithm)
		Cervical cancer screening for all women in the RH age group
		Screening for drug resistant TB (level 5 hospitals only)
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Annual prostate examination for all men over 50 years
		Management of pregnancy complications
		Integrated Management of Childhood Illness (IMCI)
		Behaviour change communication
		Nutrition and HIV&TB
		Management of medical emergencies
34	Nyandarua	Facility disaster response planning
		Basic life support
		Eye conditions management
		Care for the newborn
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
		Management of paediatric in patients
		Management of medical emergencies
		Screening for drug resistant TB (level 5 hospitals only)
		Speech and hearing therapy
		Paediatric conditions management
35	Nyeri	Screening for Animal Transmitted Conditions
		Chemotherapy
		Male circumcision
		Screening for sickle cell anaemia
		Radiotherapy
		Management of STI
		Disaster management
		Post-partum care
		Evacuation Services for Injuries
		Pelvic Inflammatory Disease management
36	Samburu	HIV Counseling and Testing (using New Algorithm)
		Basic life support
		Cervical cancer screening for all women in the RH age group
		Disaster management
		Integrated Management of Childhood Illness (IMCI)

S/No.	County	Priority In Service Short Course Training Needs
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
		Advanced life support (level 5 hospitals only)
		Breast cancer screening for all women over 18 years (level 5 hospitals only)
		Emergency Obstetric and Neonatal Care
37	Siaya	Disaster management
		Focused Antenatal Care
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Basic life support
		Emergency Obstetric and Neonatal Care
		HIV/AIDS management
		Integrated Management of Childhood Illness (IMCI)
		Paediatric conditions management
		Management of surgical emergencies (including trauma care)
		Facility disaster response planning
38	Taita Taveta	Infectious disease control
		Respiratory conditions management
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Cervical cancer screening for all women in the RH age group
		Food safety & quality control
		Nutrition and HIV&TB
		Skin conditions management
		Management of STI
		Emergency Obstetric and Neonatal Care
		Insect, vector and vermin control
39	Tana River	HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Management of pregnancy complications
		HIV Counseling and Testing (using New Algorithm)
		Cervical cancer screening for all women in the RH age group
		Care for the newborn
		Facility disaster response planning
		Basic life support
		Integrated Management of Childhood Illness (IMCI)
		Advanced life support (level 5 hospitals only)
		Management of surgical emergencies (including trauma care)
40	Tharaka	Emergency Obstetric and Neonatal Care

S/No.	County	Priority In Service Short Course Training Needs
	Nithi	Integrated Management of Childhood Illness (IMCI)
		Health education on appropriate maternal, infant and young child feeding
		Cardiovascular conditions management
		Integrated Management of Acute Malnutrition(IMAM)
		Management of surgical emergencies (including trauma care)
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Communicating with, and counseling patients on substance abuse (tobacco, alcohol, cocaine, Heroine, glue, khat, etc)
		Lipid profiling
		Management of abnormal pregnancies
41	Trans Nzoia	Disaster management
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Integrated treatment of common ailments
		HIV/AIDS management
		Integrated Management of Acute Malnutrition(IMAM)
		Management of medical emergencies
		Breast cancer screening for all women over 18 years (level 5 hospitals only)
		Emergency Obstetric and Neonatal Care
		Management of pregnancy complications
		Skin conditions management
42	Turkana	Emergency Obstetric and Neonatal Care
		Post Exposure Prophylaxis
		Management of abnormal pregnancies
		HIV Counseling and Testing (using New Algorithm)
		Post-partum care
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Management of pregnancy complications
		Management of STI
		Outbreak investigation
		Screening for drug resistant TB (level 5 hospitals only)
43	Uasin Gishu	Evacuation Services for Injuries
		Integrated treatment of common ailments
		Infection prevention
		Medical conditions management
		Disaster management
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Tuberculosis management
		Dialysis
		Basic life support

S/No.	County	Priority In Service Short Course Training Needs
		Outpatient management of minor injuries
44	Vihiga	Integrated treatment of common ailments
		Advanced life support (level 5 hospitals only)
		HIV Testing and Counselling, ARV prophylaxis for children born of HIV+ mothers, Highly Active ART , Cotrimoxazole prophylaxis, Counselling on best breastfeeding and complementary feeding practices in HIV
		Integrated Management of Childhood Illness (IMCI)
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
		Evacuation Services for Injuries
		Cervical cancer screening for all women in the RH age group
		Integrated Management of Acute Malnutrition(IMAM)
		Ultra sound scan
		Integrated treatment of common ailments
45	Wajir	Disaster management
		Basic life support
		Integrated Management of Childhood Illness (IMCI)
		Advanced life support (level 5 hospitals only)
		Integrated Management of Acute Malnutrition(IMAM)
		Emergency Obstetric and Neonatal Care
		Care for the newborn
		Surgical conditions management
		Screening for drug resistant TB (level 5 hospitals only)
		Eye conditions management
46	West Pokot	Basic life support
		Emergency Obstetric and Neonatal Care
		Advanced life support (level 5 hospitals only)
		Cervical cancer screening for all women in the RH age group
		Disaster management
		Haematology (Hb, RBC/WBC counts, hematocrit, peripheral film), bleeding and coagulation time, blood grouping with Rh factors, parasitology, Hepatitis B and C, Bacteriology, ELISA tests, Widal , CD 4 count, Agglutination, liver function tests, renal function tests, cholesterol, blood cultures, semen analysis, Micro nutrient test, Cerebro Spinal Fluid analysis (culture, biochemistry, cytology)
		Dialysis
		Annual prostate examination for all men over 50 years
		X – ray
		Post Exposure Prophylaxis

Annex 3: Training Needs Assessment Technical Steering Committee Members

No.	Name	Designation	Organisation/Affiliation
a.	Anne Murianki	Assistant Director-HRD	MOH-HRD
b.	Wilder Muturi	HRD Officer	MOH-HRD
c.	Jenovefa Njoroge	Assistant Director-HRD	MOH-HRD
d.	Mr. John Kabanya	Head-CPD Unit	MOH- Department of Health Standards Quality Assurance and Regulation
e.	Dr. Maalim Mohammed	Member	Transitional Authority (TA)
f.	Dr. Hazel Mumbo	Training Coordination Specialist	JICA
g.	Take Naoki	Economist	JICA
h.	Peter Milo	Assistant Director-Regional Strategy	USAID FUNZOKenya
i.	Josephine Mbiyu	Deputy Chief of Party/Technical Director	USAID FUNZOKenya
j.	Dr. Dirk De Coeyere	Health Advisor	DANIDA

Annex 4: Training Needs Assessment Report Reviewers

No.	Name	Designation	Organisation/Affiliation
a.	Dr. Carol Karutu	Chief of Party	USAID FUNZOKenya
b.	Stephen Mbaabu	Assistant Director-Monitoring & Evaluation	USAID FUNZOKenya
c.	Isaac Munene	Senior Manager Sytems Strengthening	USAID FUNZOKenya

Annex 5: MoH Letter to County Executive Members of Health

MINISTRY OF HEALTH

Telephone: Nairobi 254-020-2717077
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Email: ps@health.go.ke

AFYA HOUSE
CATHEDRAL ROAD
P.O Box 30016-00100
NAIROBI

Ref: MOH/HR/5/1/2/2 VOL. I (15) **27th February, 2015**

Chairman,
County Executive Committee Members for Health

Thro'

The Chairman
Council of Governors

RE: TRAINING NEEDS ASSESMENT EXERCISE

Reference is made to the aforementioned subject. This is to inform you that the Ministry is planning to carry out the training needs assessment exercise in the forty seven (47) counties.

The purpose of this letter is to request you to nominate two (2) enumerators from each county to assist in data collection during the exercise.

Kindly forward the names and telephone contacts to the following email address Jenovefanjoroge@yahoo.com/ Contact Jenovefa Tel. 0722155577 by 9th March, 2015.

This will enable the Ministry to train enumerators and commence the exercise by 16th March, 2015.

Thank you for your continuous support.

Njoroge J
For: Principal Secretary

Annex 6: MoH Letter of Introduction for Supervisors and Enumerators for TNA Exercise

MINISTRY OF HEALTH

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NAIROBI

Ref: MOH/HR/5/1/2/2 VOL. I (16)

8th April 2015

To
All Chief Officer of Health

RE: INTRODUCTION LETTER

This is further to the Ministry of Health letter Ref.MOH/HR/5/1/2/2 VOL. I (15) dated 27th February 2015 on Training Needs Assessment exercise.

This is to inform you that the Ministry has finalized all arrangements necessary to undertake the training needs assessment in all Counties. For the success of the same, the following officers will be responsible in their respective counties as supervisors and enumerators (list attached).

Kindly accord them the necessary assistance.

Njoroge D.K
For: Principal Secretary

Annex 7: Questionnaire for County Chief Officer of Health, CHMT members, Medical Superintendents of hospitals and Health Facility Managers

Name of Interviewer: _____ **Date: _____**

Tool code: PM_____ **Name of Respondent: _____**

[A1] Code of Facility: _____ [A2] County Code: _____

[A3] Ownership of facility: ☐Public ☐Private ☐Faith based ☐ other (check as appropriate)

1. **[A4] Number of workers in County /health Facility/Organization/, by cadre including specialist:**

CADRE	NUMBER(#)
A .Physicians	
I. General Practitioners(GP)	
II. Anesthetics	
III. Pharmacists	
IV. Neurosurgeons	
V. Obstetrics &Gynecologist	
VI. Ophthalmologist	
VII. Pediatricians	
VIII. Dentists	
IX. Renal Specialists/urologists	
X. Pathologist	
XI. Psychiatrists	
XII. Radiologist	
XIII. Oncologists	
XIV. Chest specialist	
XV. Dermatologists	
a. Nurses	
b. Medical Lab Technologists/Technicians	
c. Clinical Officers (CO)	
d. Pharm. Techs.	
e. Public Health/Environmental Health Officers/Technicians	
f. Nutritionists	
g. Health Records Information Officers/technicians	
h. Others (Please specify) _____ _____ _____	

2. **[A5] The following are some of the key service delivery and training need areas. Please put an "X" by the top <u>five</u> for which you think training is most critically needed at your county/ health facility**

KEY TRAINING AREA	CRITICAL? "X"=YES, BLANK =NOT AT THIS TIME	KEY TRAINING AREA	CRITICAL? "X"=YES, BLANK =NOT AT THIS TIME
HIV/AIDS		**Family planning**	
PMTCT		Long acting & Reversible methods of Family Planning	
Pediatric HIV care		Cervical Cancer Screening	
Adult ART		Sexual Gender Based violence(SGBV)	
HIV Counseling and Testing using New Algorithm		Malaria Case Management	
Pediatric Tuberculosis(TB)		Integrated Commodity Management(HIV,FP, etc)	
TB Management (Microscopy)		M&E – use of MOH tools for monitoring	
MDR TB Management		**Leadership and Management**	
Nutrition and HIV&TB		Supportive supervision	
MNCH		Effective communication and giving feedback	
Focused Antenatal Care (FANC)		Budgeting and budget control	
Emergency Maternal Obstetric and Neonatal Care(EmONC)		Hospital Administration	
Newborn Care		Human Resource management	
Maternal Infant and young child feeding (MIYCF)		**Others:** Please specify	
Integrated Management of Childhood Illness (IMCI)			
Integrated Management of Acute Malnutrition (IMAM)			

3. **[A6] For each of the priority areas identified in NO. 2 , please indicate a) how many of your staff (health workers have had training in the last 12 months and b) how many still need to be trained?**

PRIORITY AREA/CADRE	A)NUMBER OF HEALTH WORKERS TRAINED IN LAST 12 MONTHS	B) NUMBER OF HEALTH WORKERS WHO STILL NEED TO BE TRAINED
Priority Area #1 (Description)		
Priority Area #2 (Description**)**		
Priority Area #3 (Description)		
Priority Area #4 (Description)		
Priority Area #5 (Description)		

4. **[A7] Who usually provides training for your staff/health workers?** (please check all that apply)
   ☐MOH Trainers ☐Trainers from our own staff
   ☐Training Institutions ☐ Consulting Firms
   ☐ National Organizations (NASCOP, etc.) ☐ Other (please specify in the space below)_____

5. **[A8] How do you usually pay for training for your staff/health workers?**

   ☐ Training budget provided through the Ministry of Health
   ☐ Separate training budget provided by our organization/facility
   ☐ Staff pays for their own training
   ☐ Donor funding (please provide name:……
   ☐ Other (please specify)…….

6. **[A9] Do you have a robust (well structured, coordinated, on schedule and well attended) Continuous medical education (CME) run in your county/facility?**

   ☐Yes ☐No

7. **[A10] Do you have a functional training committee in your county/facility that coordinates training of health workers in regard to identifying training needs, nominating staff for training and providing post training follow up as required?**

   ☐Yes ☐No

8. **[A11] Where is training usually provide for your staff?**

   ☐MOH facility nearby (please name: _____)
   ☐In-house training room/facility
   ☐ Hotel
   ☐ Other training facility (please name: _____)

9. **[A12] Do you have access to the following for training at your facility?**

COMPONENT	YES/NO	WHAT IS THE QUALITY/CONDITION OF THE EQUIPMENT/SERVICE? (4= EXCELLENT. 3= GOOD, 2=FAIR, 1=POOR)
Wired Internet		

Wireless Internet/Wifi		
Skills Lab		
Others (please specify)		

10. **[A13] What equipment, teaching aids and resources do you have** that can be utilized while facilitating trainings for health workers in your location (County/Health Facility etc.)?

TYPE OF EQUIPMENT AND TITLE OF REFERENCE MATERIALS	NUMBER AVAILABLE (ONLY COUNT EQUIPMENT THAT IS FUNCTIONAL & AVAILABLE FOR TRAINING)
a. Whiteboard	
b. Computer (Desktop)	
c. Computer (Laptop)	
d. Demonstration equipment-e.g. Complete package for Mankins for EmONC, FP etc	
e. Flip chart stands	
f. Over head projector	
g. Other (please specify)	

11. **[A14] Is there any additional information you would want us to know in regard to training in your county/Health facility?**

_____

_____

_____

Annex 8: Training Needs Assessment (TNA): MOH Technical Departmental and Divisional

Name of Interviewer: _____ Date: _____
Tool code: DD#_____ Name of Respondent: _____
[A3] County Code: _____
[A4] Ownership/Type of organization: ☐Public ☐Private ☐Faith Based ☐ Other (check as appropriate)

12. **[A5] The following are some of the key service delivery and training need areas. Please put an "X" by the top five for which you think training is most critically needed by service providers to improve service delivery in Kenya.**

KEY TRAINING AREA	CRITICAL? "X"=YES, BLANK =NOT AT THIS TIME.	KEY TRAINING AREA	CRITICAL? "X"=YES, BLANK =NOT AT THIS TIME.
HIV/AIDS		**Family planning**	
PMTCT		Long acting & Reversible methods of Family Planning	
Pediatric HIV care		Cervical Cancer Screening	
Adult ART		Sexual Gender Based violence(SGBV)	
HIV Counseling and Testing using New Algorithm		Malaria Case Management	
Pediatric Tuberculosis(TB)		Integrated Commodity Management(HIV,FP, etc)	
The Harmonized HIV Curriculum			
TB Management (Microscopy)		M&E – use of MOH tools for monitoring	
MDR TB Management		**Leadership and Management**	
Nutrition and HIV&TB		Supportive supervision	
MNCH		Effective communication and giving feedback	
Focused Antenatal Care (FANC)		Budgeting and budget control	
Emergency Maternal Obstetric and Neonatal Care(EmONC)		Hospital Administration	
Newborn Care		Human Resource management	
Maternal Infant and young child feeding (MIYCF)		**Others:** Please specify	
Integrated Management of Childhood Illness (IMCI)			
Integrated Management of Acute Malnutrition(IMAM)			

13. **[A7] For each of the priority areas, please indicate the number of service providers that have been trained in the last 12 months and how many more needs to be trained in the next 24 months(2years)**

PRIORITY AREA	NUMBER TRAINED IN LAST 12 MONTHS	PLEASE INDICATE COUNTIES FROM IN THE LAST 12 MONTHS	NUMBERS THAT NEED TO BE TRAINED IN THE NEXT 24 MONTHS	PLEASE INDICATE COUNTIES FOR NEXT 24 MONTHS

Priority Area #1 (Description)				
Priority Area #2 (Description**)**				
Priority Area #3 (Description)				
Priority Area #4 (Description)				
Priority Area #5 (Description)				

14. **[A18] For each of these priority areas, how many trainers of trainers (TOTS) have you trained and updated in the last 24 months (Also obtain a list)**

PRIORITY AREA	# OF TOTS BY LOCATION							
	County ____	County ____	County ____	County ____	County ____	County ____	County ____	County ____
Priority Area #1 (Description)								
Priority Area #2 (Description**)**								
Priority Area #3 (Description)								
Priority Area #4 (Description)								
Priority Area #5 (Description)								

15. **[A8] How do you usually support training for health workers in the key priority areas?**

☐ Training budget provided through the Ministry of Health-GOK
☐ Separate training budget provided by our organization/Division
☐ Health workers pay for their own training
☐ Donor funding (please provide name:……
☐ Other (please specify)…….

16. **[A12] Where do you provide the trainings you support?**

☐MOH facility nearby (please name: _____)
☐In-house training room/facility
☐ Hotel
☐ Other training facility (please name: _____)

17. **[A19] In which Counties in Kenya does the department/division have other training centers/facilities?**

COUNTY	# OF FACILITIES	TOWN WHERE FACILITIES ARE LOCATED (PLEASE LIST)	TOTAL CAPACITY OF FACILITIES (# OF PEOPLE THAT CAN BE TRAINED AT ONE TIME)

18. **[A13] Has your department/Division offered some of your trainings via eLearning to service providers?**

    ☐Yes ☐No. If yes which ones?.....

19. **Do you have a functional Training Database and available in the division and outside the division?** ☐Yes ☐ No.

    If Yes, Which one, please select as may apply; ☐ TRAINSMART ☐ iHRIS ☐ Others, Please specify…….

20. **Do you have working collaboration with Training institutions and Universities (Local/International) in regard to integrating some of your in-service courses to pre-service curriculum?**

    ☐Yes ☐ No
    If Yes, Which ones?..... and Name type of collaboration:
    ☐ Curriculum Development ☐ Faculty Development ☐ Content conversion to eLeaning
    ☐ Others: please specify…….

21. **[A17] Is there any additional information you would want us to know?**

    _____
    _____
    _____
    _____

Annex 9: Questionnaire for Service Provider working in County Referral Hospital, Sub-county and Health facility

Name of Interviewer: _____ Date: _____
Tool code: PM_____ Name of Respondent: _____
[A1] Code of Facility: _____ [A2] County Code: _____

[A3] Ownership of facility: ☐Public ☐Private ☐Faith based ☐ other (check as appropriate)
(A4) What section of the Hospital are you working (Please check all that apply)

☐OPD ☐Maternity ☐in-patient ☐Casualty/accident and Emergency ☐Comprehensive care centre ☐ Operating theatre ☐ Pharmacy☐ Lab & Blood Bank ☐ Radiology ☐ Orthopedics ☐Ophthalmology ☐Dental ☐ Pediatrics ☐ Health Records ☐ Physiotherapy ☐ Medical Engineering & Maintenance ☐ Public Health ☐ Others: Please Specify…….

2. **[A4] What is your cadre?(please check in the table below)**

CADRE	(✓)
A .Physicians *I. General Practitioners(GP)*	
II. Anesthetics	
III. Pharmacists	
IV. Neurosurgeons	
V. Obstetrics &Gynecologist	
VI. Ophthalmologist	
VII. Pediatricians	
VIII. Dentists	
IX. Renal Specialists/urologists	
X. Pathologist	
XI. Psychiatrists	
XII. Radiologist	
XIII. Oncologists	
XIV. Chest specialist	
XV. Dermatologists	
a. Nurses	
b. Medical Lab Technologists/Technicians	
c. Clinical Officers (CO)	
d. Pharm. Techs.	
e. Public Health/Environmental Health Officers/Technicians	
f. Nutritionists	
g. Health Records Information Officers/technicians	
h. Others (Please specify) _____ _____ _____	

22. **[A5] The following are some of the key service delivery and training need areas. Please put an "X" by the top <u>five</u> for which you think training is most critically needed by you in your service delivery point in your facility**

KEY TRAINING AREA	CRITICAL?	KEY TRAINING AREA	CRITICAL?

	"X"=YES, BLANK =NOT AT THIS TIME.		"X"=YES, BLANK =NOT AT THIS TIME.
HIV/AIDS		**Family planning**	
PMTCT		Long acting & Reversible methods of Family Planning	
Pediatric HIV care		Cervical Cancer Screening	
Adult ART		Sexual Gender Based violence(SGBV)	
HIV Counseling and Testing using New Algorithm		Malaria Case Management	
Pediatric Tuberculosis(TB)		Integrated Commodity Management(HIV,FP, etc)	
TB Management (Microscopy)		M&E – use of MOH tools for monitoring	
MDR TB Management		**Leadership and Management**	
Nutrition and HIV&TB		Supportive supervision	
MNCH		Effective communication and giving feedback	
Focused Antenatal Care (FANC)		Budgeting and budget control	
Emergency Maternal Obstetric and Neonatal Care(EmONC)		Hospital Administration	
Newborn Care		Human Resource management	
Maternal Infant and young child feeding (MIYCF)		**Others:** Please specify	
Integrated Management of Childhood Illness (IMCI)			
Integrated Management of Acute Malnutrition(IMAM)			

23. **[A5] The following are some of the key service delivery and training need areas. Please put an "X" by the top <u>five</u> for which you think training is most critically needed by you in your service delivery point in your facility**

KEY TRAINING AREA	CRITICAL? "X"=YES, BLANK =NOT AT THIS TIME.	KEY TRAINING AREA	CRITICAL? "X"=YES, BLANK =NOT AT THIS TIME.
HIV/AIDS		**Family planning**	
PMTCT		Long acting & Reversible methods of Family Planning	
Pediatric HIV care		Cervical Cancer Screening	
Adult ART		Sexual Gender Based violence(SGBV)	
HIV Counseling and Testing using New Algorithm		Malaria Case Management	
Pediatric Tuberculosis(TB)		Integrated Commodity Management(HIV,FP, etc)	
TB Management (Microscopy)		M&E – use of MOH tools for monitoring	
MDR TB Management		**Leadership and Management**	
Nutrition and HIV&TB		Supportive supervision	
MNCH		Effective communication and giving feedback	
Focused Antenatal Care		Budgeting and budget control	

(FANC)			
Emergency Maternal Obstetric and Neonatal Care(EmONC)		Hospital Administration	
Newborn Care		Human Resource management	
Maternal Infant and young child feeding (MIYCF)		**Others:** Please specify	
Integrated Management of Childhood Illness (IMCI)			
Integrated Management of Acute Malnutrition(IMAM)			

24. **[A4] The following are some of the key service delivery and training need areas. Please put an "X" to training(s) you have undertaken in the last 24 months as part of building your capacity to effective service delivery.**

KEY TRAINING AREA	"X"=YES, BLANK =NO TRAINING	KEY TRAINING AREA	"X"=YES, BLANK =NO TRAINING
HIV/AIDS		**Family planning**	
PMTCT		Long acting & Reversible methods of Family Planning	
Pediatric HIV care		Cervical Cancer Screening	
Adult ART		Sexual Gender Based violence(SGBV)	
HIV Counseling and Testing using New Algorithm		Malaria Case Management	
Pediatric Tuberculosis(TB)		Integrated Commodity Management (HIV, FP, etc)	
TB Management (Microscopy)		M&E – use of MOH tools for monitoring	
MDR TB Management		**Leadership and Management**	
Nutrition and HIV&TB		Supportive supervision	
MNCH		Effective communication and giving feedback	
Focused Antenatal Care (FANC)		Budgeting and budget control	
Emergency Maternal Obstetric and Neonatal Care(EmONC)		Hospital Administration	
Newborn Care		Human Resource management	
Maternal Infant and young child feeding (MIYCF)		**Others:** Please specify	
Integrated Management of Childhood Illness (IMCI)			
Integrated Management of Acute Malnutrition (IMAM)			

25. **[A7] Who usually provides training for your?** (please check all that apply)
☐MOH Trainers ☐Trainers from our own staff
☐Training Institutions ☐ Consulting Firms
☐ National Organizations (NASCOP, etc.) ☐ Other (please specify in the space below)_____

26. **[A8] How do you usually pay for your training?**

☐ Training budget provided through the Ministry of Health
☐ Separate training budget provided by our organization/facility
☐ Staff pays for their own training

☐ Donor funding (please provide name:……
☐ Other (please specify)…….

27. **[A9] Do you have a robust (well structured, coordinated, on schedule and well attended) Continuous medical education (CME) run in your county/facility?**

☐Yes ☐No

28. **[A10] Are you aware of a functional training committee in your health facility that coordinates training of health workers in regard to identifying training needs, nominating staff for training and providing post training follow up as required?**

☐Yes ☐No

29. **[A11] Where do you attend training provide to you ?**

☐MOH facility nearby (please name: _____)
☐In-house training room/facility
☐ Hotel
☐ Other training facility (please name: _____)

30. **[A12] Do you have access to the following facilities for training at your facility?**

COMPONENT	YES/NO	WHAT IS THE QUALITY/CONDITION OF THE EQUIPMENT/SERVICE? (4= EXCELLENT. 3= GOOD, 2=FAIR, 1=POOR)
Wired Internet		
Wireless Internet/Wifi		
Skills Lab		
Others (please specify)		

31. **[A13] What equipment, teaching aids and resources do you have access to for learning in your facility?**

TYPE OF EQUIPMENT AND TITLE OF REFERENCE MATERIALS	NUMBER AVAILABLE (ONLY COUNT EQUIPMENT THAT IS FUNCTIONAL & AVAILABLE FOR TRAINING)
a. Whiteboard	
b. Computer (Desktop)	
c. Computer (Laptop)	
d. Demonstration equipment-e.g. Complete package for Mankins for EmONC, Family planning etc	
e. Flip chart stands	
f. Over head projector/LCD	
g. Other (please specify)	

32. **[A14] Is there any additional information you would want us to know in regard to your training that leads to improved service delivery ?**

_____

Annex 10: Training Needs Assessment (TNA) for Regulatory Authorities

Name of Interviewer: _____ Date: _____

Tool code: RA_____ Name of Respondent: _____
County Code: _____

[B1] Please check the regulatory body?

- ☐Kenya Medical Practitioners and Dentists Board (KMPDB)
- ☐ Nursing Council of Kenya (NCK)
- ☐ Kenya Pharmacy and Poisons Board (KPPB)
- ☐ Kenya Medical Laboratory and Technicians Board (KMLTTB)
- ☐ Kenya Clinical Officers Council (COC)
- ☐ Kenya Nutritionist and Dietician Council (KNDC)

1. **[A1] How many members do you have from the following cadres including specialists?**

CADRE	NUMBER
A .Physicians *I. General Practitioners(GP)*	
II. Anesthetics	
III. Pharmacists	
IV. Neurosurgeons	
V. Obstetrics &Gynecologist	
VI. Ophthalmologist	
VII. Pediatricians	
VIII. Dentists	
IX. Renal Specialists/urologists	
X. Pathologist	
XI. Psychiatrists	
XII. Radiologist	
XIII. Oncologists	
XIV. Chest specialist	
XV. Dermatologists	

2. **[A2] In the last one year, how many of your professional members attained training standards for re-license and were thus re-licensed (please fill in the appropriate column in the table below)**

CADRE	NUMBER	PERCENTAGE OF TOTAL REGISTERED MEMBERS
a. Medical Officers (MO)		
b. Nurses		
c. Medical Lab Technologists/Technicians		
d. Clinical Officers (CO)		
e. Pharmacists/Pharm. Techs.		
f. Public Health/Environmental Health Officers/Technicians		
g. Nutritionists		
h. Health Record Information Officers		
i. Others (Please specify)		

3. **[A23] Please describe the type of performance needs assessment the regulatory body conducts to determine what training health workers need.**

_____
_____

4. **[A24] Do you have any performance needs assessment tools that you can share with us?**

☐ Yes ☐ No

5. **[A25] What post training support do you provide to in-service trainees (please check as appropriate)?**

a.	Follow up by trainers (mentoring, coaching, etc.)	☐ Yes	☐ No
b.	Sending of updates/manuals	☐ Yes	☐ No
c.	website where learners can get more information	☐ Yes	☐ No
d.	Other (please specify)		

_____

6. **[A26] In your opinion, how effective is the level of post-training support you provide to in-service health workers?**

☐ Not at all effective ☐ somewhat effective ☐ Very effective

7. **[A27] What type of post training support do you provide to training institutions?**

_____

_____

8. **[A28] In your opinion, how effective is the level of post-training support you provide to training institutions?**

☐ Not at all effective ☐ somewhat effective ☐ Very effective

9. **[A30] What methods of evaluation do you utilize to determine the effectiveness of training?**

_____

_____

10. **[A17] Is there any additional informational you would like us to know?**

_____

_____

Annex 11: MoH Invitation Letter to County Directors of Health to TNA Validation Workshop

MINISTRY OF HEALTH

OFFICE OF THE PRINCIPAL SECRETARY

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NAIROBI

Ref.MOH/HR/5/2/ VOL. I (28)

29th October, 2015

All County Directors of Health

Thro'

Chairman
Council of Governors

INVITATION FOR TRAINING NEEDS ASSESSMENT (TNA) VALIDATION WORKSHOP 19TH -20TH NOVEMBER, 2015

As you are aware, this Ministry carried out a comprehensive Training Needs Assessment for the Counties (other than Baringo County) in the month of May and June.

The draft Training Needs Assessment report is now ready and we now seek your input to enable us validate and finalize the report.

This is therefore to request you to attend the above workshop which will be held at the **Silver Springs Hotel** on 19th and 20th **November, 2015.**

The respective County government are requested to facilitate their Directors of Health to attend the validation exercise.

Dr. Khadijah Kasachoon
PRINCIPAL SECRETARY

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