Report of the Performance Needs Assessment of the Kenya Health Training System

August 2011

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Elizabeth Makokha - Nazareth College of Nursing/Kenya Episcopal Conference
Mary Nyamboki, Evangeline Mugoh -Nursing Council of Kenya
Dr. Julius Rogena, David Njoroge and Titus Waita – Ministry of Public Health and Sanitation
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Dr. Francis M. Kimani, MB.ChB, MMed.
Director of Medical Services

Dr. Shaanaz Sharif,OGW,MBChB,M.Med, DLSTMH,MSc.
Director of Public Health and Sanitation

LIST OF ACRONYMS

CHW	Community Health Worker
CHE	Commission for Higher Education
CHEW	Community Health Extension Worker
CHAK	Christian Health Association of Kenya
CM	Case Management
CPD	Continuing professional development
FP	Family Planning
FBO	Faith-based organization
FGD	Focus Group Discussion
GoK	Government of Kenya
HRH	Human Resources for Health
HCT	HIV Counseling and Testing
ICT	Information and Communications Technology
IMCI	Integrated Management Childhood Illnesses
IST	In-service (post-basic) Training
KEC	Kenya Episcopal Conference
KEN	Kenya Enrolled Nurse
KECN	Kenya Enrolled Community Nurse
KII	Key Informant Interview
KEPH	Kenya Essential Package for Health
KRN	Kenya Registered Nurse
KRCHN	Kenya Registered Community Health Nurse
MNCH	Maternal, Neonatal, and Child Health
MOHEST	Ministry of Higher Education, Science and Technology
MoH	Ministry of Health
MoMS	Ministry of Medical Services
MoPHS	Ministry of Public Health and Sanitation
NCK	Nursing Council of Kenya
NGO	Non-governmental organization
NHSSPII	National Health Sector Strategic Plan
PIA	Performance Improvement Approach
PHO	Public Health Officer
PHT	Public Health Technician#
PNA	Performance Needs Assessment
PST	Pre-service training
RH	Reproductive Health
TNAs	Training Needs Assessments
TB	Tuberculosis
TWG	Technical Working Group
USAID	United States Agency for International Development
WHO	World Health Organization

FOREWORD

The Ministry of Medical Services and the Ministry of Public Health and Sanitation are committed to reforming the health sector, towards achieving the Kenya Vision 2030 and Millennium Development Goals and meet the overall health sector goal of providing accessible, affordable and quality health care to all Kenyans. The quality of the health service delivery is, to a large extent, dependent on the availability and performance of a well trained, qualified and, properly managed health workforce. The Ministries recognize the role of public, private and faith based organizations in the training and development of health workers in this country. We are therefore focused on strengthening systems for training health workers at the pre-service, in-service and continuing professional development levels, in order to improve their competencies and ensure improved health outcomes for the people of Kenya.

This report of the performance needs assessment (PNA) of the health training systems has highlighted important strengths and weaknesses in the way services outlined in the Kenya Essential Package for Health are delivered by various cadres in health care. It has also given useful insights on how the training system for middle and tertiary level health workers is performing, while acknowledging its complex nature. The PNA was a critical step in the process of identifying pragmatic solutions to address not only health worker competency gaps in service delivery but also those associated with the health training system in general.

We are pleased to note that the recommendations made by this study have provided an opportunity for the Ministries of Health to harness resources, support interventions to deliver the Kenya Essential Package for Health and improve the health training system. There is no doubt that stakeholder participation has significantly informed the PNA process. However, a more comprehensive stakeholder engagement will still be required in future in order to provide insight on specific contributions from partner organizations towards building the momentum for sustaining efforts to implement the medium to long term recommendations.

We will continue to provide the necessary leadership and support to partner efforts and provide the enabling environment for strengthening the development and management of human resources for health in Kenya. We welcome partner organizations to synchronize their efforts with our reform agenda as we implement the national health priorities in the context of the new constitutional order.

We are grateful to the USAID Capacity Kenya Project and all stakeholders that were involved in undertaking this study.

Ms Mary W. Ngari, CBS
Permanent Secretary
Ministry of Medical Services

Mr. Mark K Bor, CBS
Permanent Secretary
Ministry of Public Health and Sanitation

EXECUTIVE SUMMARY

Background

The Government of Kenya (GoK) is committed to improving access and equity of essential health care services and has set critical and ambitious targets in providing health services to its population. In order to achieve these national goals and objectives, provision of an optimum and well-managed health workforce with appropriate skills, equitably distributed across the country, is critical. As in most developing countries, the human resources for health (HRH) challenges in Kenya have continued to impede health sector planning, service delivery, and achievement of expected national health outcomes. Understanding and addressing challenges in the health training system can ultimately increase health workforce entry and re-entry; decrease missed days; lead to higher productivity and greater satisfaction; higher retention; a larger pool of students, faculty, and matriculated health workers; and a more robust health workforce to meet Kenya's health challenges.

Education and training is one key input into the performance of health workers and the delivery of health services. Training is not the only input into health production; many other factors contribute to performance, such as the availability of essential supplies and medicines, management and supervision, work environment, and motivation among others. Nevertheless, at its core, health service delivery requires people to provide services to clients and inadequately trained health workers can perpetuate a cycle of continual re-training.

Understanding the performance of a training system requires considerations of many factors that influence performance, not merely provision of knowledge and skills. Utilizing a "systems" approach to training involves understanding the sum total of procedures, methods, resources, practices, policies, curricula, regulation and licensure of health workers, linkages with ministries of education, gender disparities, and other factors that influence performance of the trained health workers. Training systems need to be able to adapt to changes in standards and health service regulations, health systems strategic directions, and advances in science and protocols. A well-functioning training system must have the ability to capture and disseminate information on training effectiveness, health worker performance, and emerging issues in service delivery. The system must also incorporate feedback from stakeholders and (re)shape components of training programs in order to address the realities of service delivery and respond to the health needs of the population.

Many actors are engaged in the training of health workers in Kenya including Ministries of Health (mainly through the Kenya Medical College training system), the Ministry of Higher Education Science and Technology (MOHEST) (through the public university system), the Ministry of Labor and Human Resource Development, the Ministry of Agriculture, private and faith-based universities and training colleges, regulatory bodies, placement sites, international bodies, and donor organizations. Moreover, the Ministries of Health are both producers, for example through the Kenya Medical Training College system, as well as major employers of health workers, among others. Coordination among these actors is critical to a well-functioning

system. It is envisaged that enhanced and better coordinated training systems will go a long way toward improving the performance of health workers.

Assessment Questions

It is within this context that a performance needs assessment of the health training systems was conducted in two phases, from 2009-2010. Phase I focused on answering the following:

- What are the existing competency gaps among health workers at select sites?
- What are the perceived factors (intrinsic and other) that impede health worker performance?
- What support do regulatory bodies provide (e.g., professionally-oriented experiences such as continuing professional development (CPD) training, registration, certification/licensure) to ensure requisite competencies are met among health workers?
- The second phase of the performance needs assessment aimed to answer the following:
- How well is the pre-service training system performing against the standards selected by the stakeholder group? What gaps exist and what could be done to fill them?
- How well is the in-service training (IST) system performing against the standards selected by the stakeholder group? What gaps exist and what could be done to fill them?
- How well is the CPD system performing against the standards selected by the stakeholder group? What gaps exist and what could be done to fill them?
- What role do gender issues play in the performance of the pre-service, in-service, and CPD training systems respectively?

Methods

The mixed methods (qualitative and quantitative), cross-sectional methodology was utilized, surveying health workers [medical doctors, clinical officers, nurses, midwives, medical laboratory technologists/technicians, public health officers (PHO)/environmental officers, public health technicians (PHT), nutritionists, and community health workers (CWH)] at 98 facilities in 16 districts in phase I, and from faculty and students at 42 middle and tertiary health training institutions, as well as 34 hospitals and rural health clinics attached to these training institutions. Assessment of performance of training institutions was based on the nine World Health Organization (WHO) Guidelines for Evaluating Basic Nursing and Midwifery Education and Training Programs in the African Region, and standards for health worker performance were developed in consultation with the Stakeholder Technical Working Group (TWG) and the Ministries of Health.

Summary Findings – Phase I

In Phase I, health workers were surveyed regarding their perceptions about both general and specific (technical) competencies. Overall, most health workers felt comfortable with their skills and abilities in order to perform the duties required of them. Health workers were also observed delivering family planning (FP), integrated management of childhood illness (IMCI), and HIV

counseling and testing (HCT), and were queried on malaria case management and laboratory diagnosis. Observational findings suggest that health workers participating in the survey were not performing to the level desired by the Ministries of Health in of performance in many of these areas, with the exception of HCT.

Health workers also responded to questions about their job, supervision received, and other aspects related to work. The data revealed some seemingly contradictory information. For example, although most health workers surveyed reported having a clear job expectation, a smaller percentage reported having a written job description. Qualitative data indicate that health workers were less clear about their roles, a situation that is further challenged by staff shortages, which was also cited as a barrier to performance. Regarding supervision, a high percentage of respondents reported receiving informal supervision often, and that supervision is of "good" quality. However, qualitative findings indicate that health workers suffer from burn out due to, among other factors, staff shortages and lack of supervisory support, which in some instances has led to health workers taking on multiple roles or duties and leading sometimes to health workers taking less time with patients or even taking short cuts.

Summary Findings – Phase II

Faculty and student respondents associated with both tertiary and middle-level institutions were generally in agreement around curriculum sufficiency. However, qualitative data indicate that there is an over-reliance on theory-based learning and a lack of connection between theory and practice. Lessons are mostly theoretical, and many facilities do not conduct practical sessions. Qualitative data from interviews with clinical instructors and student focus groups, as well as data from open-ended questions, reinforce concerns regarding an existing disconnect between classroom training and clinical/practical training. Specific concerns included too many students to mentor and not enough staff to mentor them, a lack of learning objectives to inform the clinical rotation, poor integration of the institution's syllabus and the student clinical rotation, heavy clinical workloads that prevent appropriate supervision of students, and poor linkages between clinical instructors and faculty members from training institutions.

The majority of respondents (75% and up) agreed that training curricula are aligned with national health priorities. Despite this, an average of 26% of respondents at training institutions were "not sure" the curriculum prepared students could adequately deliver the Kenya Essential Package for Health (KEPH), suggesting that there is a lack of understanding of what the Essential Package is and how students should be prepared at training institutions in order to deliver these services at health facilities. Respondents were less confident that the curriculum reflects the current standards developed by appropriate regulatory bodies and the Ministries of Health.

Regarding the updating and renewal of curricula, findings indicate that 46% of faculty surveyed at the middle-level institutions were not sure or disagreed that their institution had a policy that gave them the autonomy to renew their curriculum. In addition, according to respondents participating in this study, many of the institutions in the health care training system lack sufficient resources, especially in the areas of infrastructure and information and communications technology (ICT).

Finally, qualitative data indicate that equal opportunity for education, occupation, and employment are constrained by gender in the health training system in Kenya, including some clear forms of gender-based discrimination, such as male students being given greater opportunity to learn more complex procedures than female students. Distribution of faculty among 20 nursing schools indicates a higher number of male faculty (285) than female (173) in the institutions surveyed.

Key Recommendations

Based on the results of this assessment, the Performance Needs Assessment (PNA) Stakeholders TWG recommends the following:

- A more detailed assessment of the supervisory process may be warranted to understand in greater detail the extent to which it is supporting staff, contributing to better health service delivery, and improving access to and quality of care, among other issues. Capacity Kenya or another organization, in collaboration with the Ministries of Health and key stakeholders, should conduct this assessment in the near term.
- The National health training policy should be enacted and an advisory board established that will create a mechanism of coordination of health care training mechanism to strengthen linkages, reduce duplication, increase standardization, and increase efficiency in the system. In addition, training institutions should engage their respective stakeholders in updating their vision/mission/objectives to ensure alignment with national priorities and evaluate educational programs against national policies and goals.
- There is need to increase resources for the health training system, specifically to utilize information and communication technologies to improve availability and access to (electronic) educational materials, and foster educational learning networks and local and regional public/private partnerships to share resources and information.
- In the short run, updating curricula by establishing curriculum committees in institutions where they do not exist ensuring appropriate representation from faculty and students, and link these committees to regulatory bodies and other stakeholders. In the medium term, regulatory bodies should establish standardized curricula for each cadre that cuts across training institutions and training levels. In addition, curricula should be harmonized across cadres to reflect the KEPH (and other national health goals) and to ensure students understand their roles in providing care and, to the extent possible, experience training as a team. Capacity Kenya is prepared to actively support the coordinating committee, regulatory bodies, and training institutions with these initiatives.
- Improve clinical placement sites by strengthening linkages between faculty and clinical preceptors to improve student supervision and broadening the selection and expanding the number of sites to ensure greater exposure to the community and levels two and three, especially in rural and underserved areas.

- The Ministries of Health and Education should undertake a situational analysis to identify existing equal opportunity policies, and, if they exist, create sector-wide awareness and work with regulatory bodies and training institution leaders to reach consensus on how equal opportunity and non-discrimination can be integrated into the health training system. The Ministries of Health should also convene a task force to develop a plan and implement non-discrimination and equal opportunity policies. Additional research may be needed to document the forms and severity of sexual harassment, family responsibility, and pregnancy discrimination.

INTRODUCTION

Background

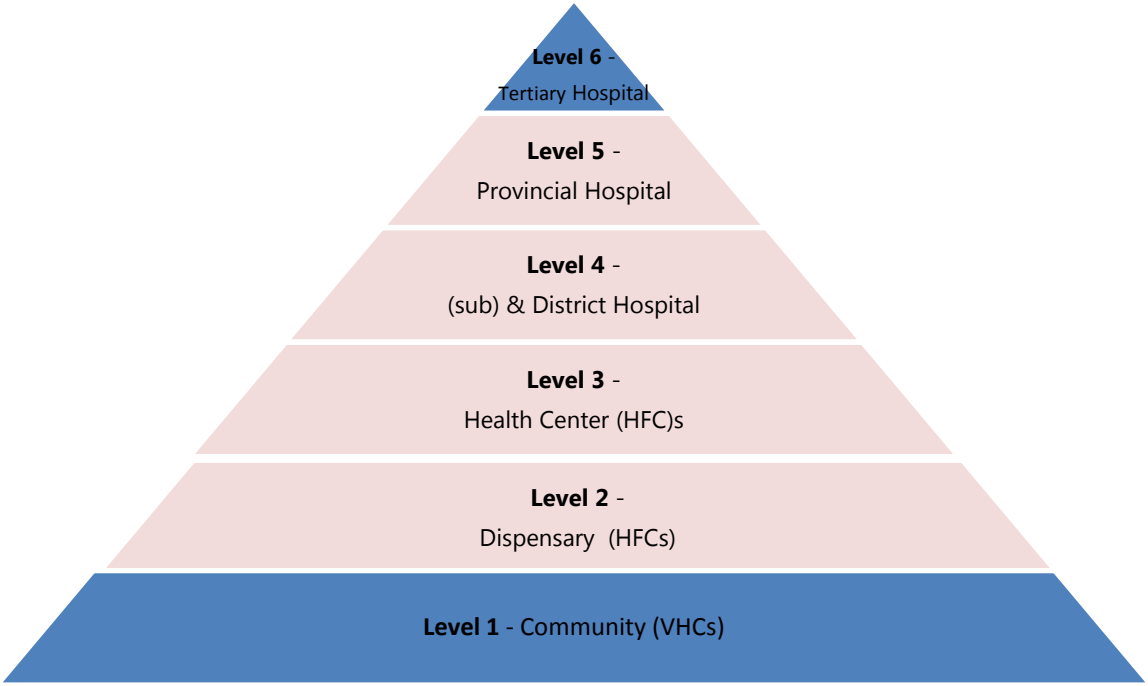
Health care and the health training system

The GoK is committed to improving access and equity of essential health care services. As such, Kenya has critical and ambitious targets in providing health services to its population, as set forth in Kenya Vision 2030, the Kenya National Policy framework (1994-2010), the National Health Sector Strategic Plan (NHSSP) II (2005-2010), the KEPH (2005-2010), Health Ministries Strategic Plans (2008-2012), Ministerial Annual Operation Plans, the Employment Act of 2007, the United Nations Millennium Development Goals (2015), and other key policies and plans. In addition, the NHSSP II (2005-2010) identified gender, education, and poverty as key hindrances to achieving national health sector goals of reducing health inequalities and improving health outcome indicators. One of the objectives of Kenya's National Gender and Development Policy is to "enhance the enrolment and retention of women in technical training institutions" in "women and men-friendly institutions[1]."

In order to achieve these national goals and objectives, provision of an optimum and well-managed health workforce with appropriate skills equitably distributed across the country is critical. As in most developing countries, the HRH challenges in Kenya have continued to impede health sector planning, service delivery, and achievement of expected national health outcomes. Understanding and addressing inequality of opportunity and access in the health training system can ultimately increase health workforce entry and re-entry, decrease missed days, lead to higher productivity and greater satisfaction, higher retention, a larger pool of students, faculty and matriculated health workers, and a more robust health workforce to meet Kenya's health challenges. To address the HRH challenges, the Ministry of Medical Services (MoMS) and the Ministry of Public Health and Sanitation (MoPHS) developed the National Human Resources for Health Strategic Plan (2009-2012) which spells out both short and medium term strategies that are envisaged to effectively improve health services delivery and reverse declining health outcomes. To achieve these strategies, all health cadres must be well prepared to perform on the job and adapt to changing situations in the workplace and at the various levels of service outlined in the KEPH and shown below in Figure 1.

1 Republic of Kenya National Gender and Development Policy, Ministry of Gender, Sports, Culture and Social Services. November 2000, p.4 and 24

Figure 1. Levels of service delivery under KEPH[2]



Education and training is a key input into the performance of health workers and the delivery of health services. Moreover, inadequately trained health workers perpetuate a cycle of continual retraining. Training is not the only input into health production; many other factors contribute to performance, such as the availability of essential supplies and medicines. However, supplies and equipment are of little value if there are no trained health workers to utilize these resources. Other assessments, such as the Kenya Service Provision Assessments, offer a comprehensive look at health facilities and the equipment and resources available to deliver health care (see, for example, NACPD and Opinion Research Corporation Macro, 2006).

While Kenya's various health policy documents describe the vision for addressing health and HRH goals, they fail to articulate a vision for addressing the health training system required to achieve these goals. Understanding the performance of a training system requires considerations of many factors that influence performance, not merely provision of knowledge and skills. Taking a "systems" approach to training involves understanding the sum total of procedures, methods, resources, practices, policies, curricula, regulation, and licensure of health workers, linkages with ministries of education, gender disparities, and other factors that influence performance of the trained health workers. Training systems need to be able to adapt to changes in standards and health service regulations, health systems strategic directions, and advances in science and protocols. A well-functioning training system must have the ability to capture and disseminate information on training effectiveness, health worker performance, and emerging issues in service delivery. The system must also incorporate feedback from

2 National HRH Strategic Plan 2008 – 2012 (MoMs & MoPHS)

stakeholders and (re)shape components of training programs in order to address the realities of service delivery and respond to the health needs of the population. For example, curricula must be revised periodically to reflect national health priorities and goals, the latest developments and practices, emerging diseases, and teaching approaches need to be updated to reflect best practices and capitalize on developments in ICT necessary for provision of education to diverse body of learners. Furthermore, the Ministries of Health, in collaboration with partners including the Ministry of Education, must assure adequate allocation, efficient and effective utilization of resources to strengthen the health training system to meet targets and goals. In Kenya, this allocation and utilization may become even more challenging in the face of decentralization outlined in the new Constitution. Interventions in the health care training system therefore require the support of multiple actors and will likely be multi-faceted.

Many actors engage in the training of health workers in Kenya including, among others, Ministries of Health (mainly through the Kenya Medical College training system), the MOHEST (through the public university system), the Ministry of Labor and Human Resource Development, the Ministry of Agriculture, private and faith-based universities and training colleges, regulatory bodies, placement sites, international bodies, and donor organizations. Moreover, the Ministries of Health are both producers, for example through the Kenya Medical Training College system, as well as major employers of health workers. Coordination among these actors is key to a well-functioning system. At present, however, the pre-service training (PST), IST, and CPD systems for all health workers in Kenya are not well coordinated and anecdotal information indicates that the quality of training of health workers is being compromised[3]. In line with the health sector plans, there is need to better understand gaps in the capacity and performance of current health worker training systems in order to facilitate the design of appropriate interventions for coordinating and implementing training in the country (National Human Resources for Health Strategic Plan 2009-2012). It is envisaged that enhanced training systems will go a long way toward improving the performance of health workers.

Understanding how health training is delivered at all levels is critical to understanding the performance of the system overall. Training not only occurs in the classroom but also at placement sites as required by the regulatory bodies that accredit pre-service training institutions. Often, these placement sites are located at large training hospitals. Yet, a large proportion of primary health care services are delivered in health centers, community settings, dispensaries, and health clinics. There are no expectations that all students receive training at these sites during their pre-service education and where it occurs, training is uncoordinated and unstructured. This lack of experience during pre-service training can be challenging for new health workers, especially when they are placed at level two and three facilities, as they may be left to learn on the job the realities of service delivery in very remote and low resource environments. Coupled with this is the challenge of coordinating supervision of training at placement sites, as well as the competencies, roles and mandates of clinical preceptors, and instructors in the training system.

[3]Kenya PNA stakeholders meeting, March 2010.

Obtaining data to support planning, training and development initiatives for HRH in Kenya has also been a challenge; the health sector has not conducted a nation-wide performance needs assessment for medical doctors, nurses, clinical officers, medical laboratory personnel, pharmaceutical personnel, public health personnel, nutritionists, and CHWs. Training at PST, IST, and CPD levels is therefore conducted without clear information on actual gaps or demands for service. This is especially true for HIV; FP; tuberculosis and maternal, neonatal, and child health (MNCH) service areas in which indicators are worsening (MoMS & MoPHS Strategic Plans 2008-2012). In 2007, the NHSSP II Mid-Term review report stated, "there is a need for improved information on pre-service training, IST, and CPD in order to assess the capacity and quality of the HRD [human resource development] system to meet current and future demands" (NHSSP II, 2007; p. 25).

The importance of gender equity and opportunity in health training

The NHSSP II (2005-2010) identified gender, education, and poverty as key hindrances to achieving national health sector goals of reducing health inequalities and improving health outcome indicators. The GoK is committed to improving accessibility and equity of essential health care services. In 2000, the Ministry of Gender, Sports, Culture and Social Services established a national gender and development policy to eliminate gender inequality. This policy establishes clear expectations regarding enrollment and retention in "women and men-friendly institutions" (Republic of Kenya 2000: 4, 24). There is also a supportive, evidence-based policy environment in the labor sector. Kenya has ratified the International Labour Organization conventions on equal opportunity and non-discrimination in employment and occupation (C.111), human resources development (C.142), and equal remuneration (C.100); it also may soon ratify conventions related to maternity protection (C.183) and family responsibilities (C.156) (International Labour Organization).

Increasing access to education, occupations, and employment will facilitate individual or institutional progress and achievement[4]. Understanding and addressing equality of opportunity and access in the health training system will ultimately increase health workforce entry and re-entry into health delivery systems; decrease missed days; lead to higher productivity and greater satisfaction; higher retention; a fuller pool of students, faculty, and matriculated health workers; and ultimately a more robust health workforce to meet Kenya's health challenges.

Purpose of the PNA

With this background and understanding, the MoMS and the MoPHS in collaboration with Christian Health Association of Kenya (CHAK), Kenya Episcopal Conference (KEC), and other stakeholders, as part of the Stakeholder TWG, with support from the Capacity Kenya program funded by the United States Agency for International Development (USAID), conducted the PNA that is the subject of this report. The purpose of the PNA was twofold:

4 Anti-Discrimination Commission. Queensland, Australia. Direct and Indirect Discrimination. January 2007.

1. First, to assess the competencies of health workers to deliver the KEPH at levels one through five of the health system (Figure 1) in order to determine whether, in fact, gaps exist that could be closed by a stronger health training systems.
2. Second, to determine the capacity and gaps, including gaps in gender equality with respect to opportunity and access, in the current PST, IST, and CPD systems, including in public, private, and faith-based organizations (FBOs), responsible for training health care workers to deliver quality care and to deliver the KEPH.

For the purposes of this study, PST is formalized training developed to prepare future health workers and includes degree, diploma, and certificate programs offered at universities and colleges. IST is formalized training that helps update the skills of current health workers who already have basic training. The World Federation of Medical Education (2003) considers CPD as self-directed and practice-based learning activities conducted without supervision by a health worker. CPD is meant to further develop competencies "essential for meeting changing patients and the health care delivery system, responding to new challenges from scientific development in medicine, and meeting the evolving requirements of licensing bodies and society" (World Federation of Medical Education, 2003). Responsibility for CPD training usually lies with a specific professional body and the individual health worker. Craft (2000) uses IST and CPD interchangeably and states that in-service is intended training. While some institutions focus on just one level of training, many institutions in Kenya offer PST, IST, and CPD to various cadres of health workers. Meeting both purposes of the PNA required that the PNA be conducted in phases II and I, respectively.

Other studies on PNA

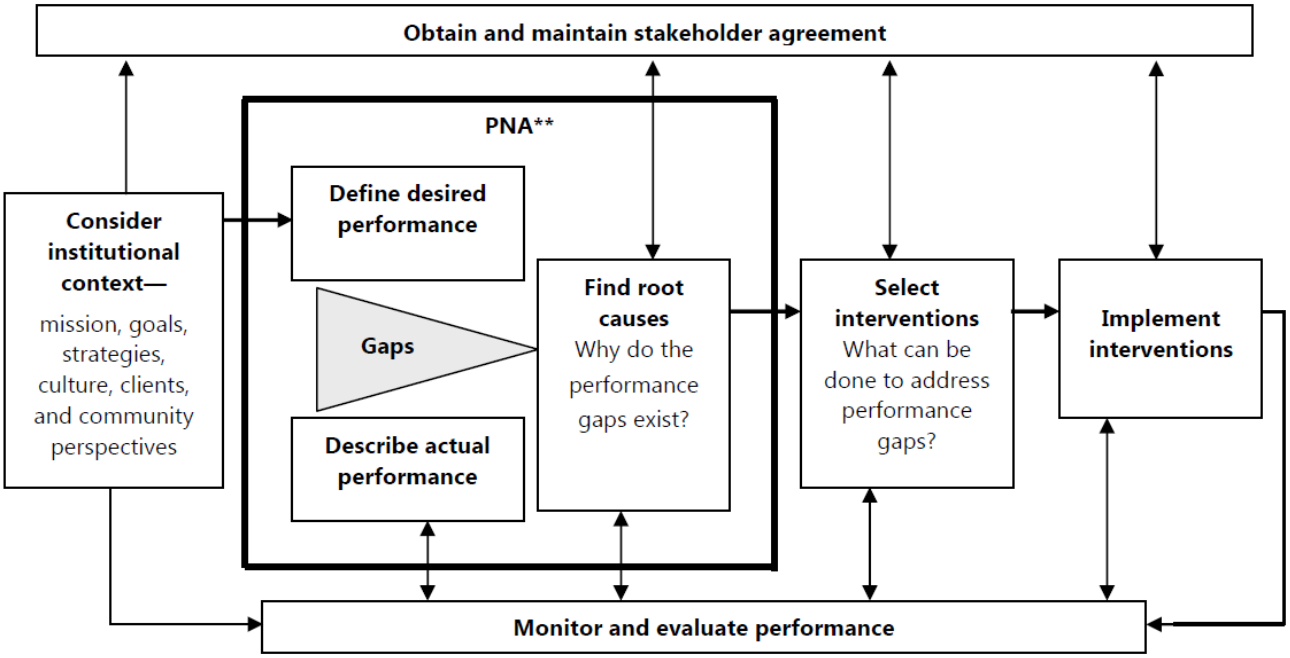
A search in literature using search engines such as PubMed, Hinari, Boston Medical Journal, and others, covering as far back as the year 2000 shows that PNAs have been conducted before but on small scales and often in the form of training needs assessments (TNAs) or learning needs. These kinds of assessments (PNAs and TNAs) have been conducted for specific health services or health cadres. Examples include: Lin, Y. and Tavrow, P. (2000); Lutalo, I.M., Schneider, G., *et al* (2009); Bakari, E. *et al,* (2003); Combary, P., Sebikali, B., *et al* (2003); Perera, J., (2009); Ministry of Health and Family welfare, India, (2005); Dierdorff, E. and Surface, E. (2008); Janet, G. (2002), Hadley, J. *et al* (2007); ACQUIRE Rwanda Project (2005); Christiane, H., Anna, V., *et al* (2009); Margaret, A.P, Pistella, C. *et al* (2000); and Ndetei, P. (2006). These PNAs/TNAs focus on identifying gaps in one area of performance (e.g., IMCI, FP, retention of health workers, or identifying training needs of a cadre of health workers such as doctors, nurses, and CHWs). The literature review does not indicate that a PNA of this magnitude, national scope, performance of multiple cadres and assessing the capacity of PST, IST, and CPD systems of ten cadres of health workers (medical doctors, nurses, medical laboratory technologists/technicians, clinical officers, pharmacists, pharmaceutical technologists, public health officers/environmental health officers, nutritionists, community health extension workers (CHEWs), and CHWs), has been conducted elsewhere.

Conceptual Framework

PNA and performance improvement

The PNA is a cross-sectional, mixed methods study, utilizing both quantitative and qualitative data collection. The assessment focused on two key concepts: assessment of performance to identify needs and to conduct performance improvement as a means of addressing gaps. Conducting a PNA is an important step in the Performance Improvement Approach (PIA) as described by Luoma (2002). The PIA helps and empowers users to look beyond causes of job problems that they can do little or nothing about and to look for opportunities for improving services. Performance improvement engages all people in an organization to look for improvement as they work together. The PIA is comprehensive and inclusive and it begins with research and ends with evaluation of solutions identified by stakeholders. It is implemented in eight inter-related processes.

Figure 2. The intersection of PNA and Performance Improvement



****The bold line comprises steps that can be considered to be PNA processes**

Figure 2 above summarizes the processes as follows:

- Consider the institutional context of the performance problem and foster agreement on the objectives of the PI process
- Define desired performance
- Describe actual performance
- Measure or describe the performance gap

- Find the root causes of the performance gap and link them to performance factors, such as incentives or knowledge and skills
- Select interventions that address the root causes
- Implement interventions
- Monitor and evaluate performance.

PNA methodology is founded on the following principles:

- A holistic approach in the assessment is useful with a systems' perspective to performance
- Stakeholder participation is key for ownership of inputs, processes, and outcomes
- Data is essential for guiding decision making in taking appropriate actions
- Collaborative approach is important in order to maximize implementation of interventions.

In both phases of the PNA, Capacity Kenya held several meetings with the stakeholders for buy-in and agreement on inputs, processes, and implementation aspects of the study. The Project worked closely with a working group of stakeholders, including the Ministry of Health (MoH), to develop a set of instruments designed to address the stated research objectives in each phase of the study. The Stakeholder TWG consisted of 25 members representing 16 organizations (see appendix A for a complete list of members). The TWG met throughout the PNA process from August 2009 through September 2010 to provide leadership and guidance for PNA process. Data collection and analysis for the PNA addressed steps one through four of the PIA described above. Once preliminary results were analyzed from both phases, the Stakeholder TWG met again to complete steps five and six of the PIA process. Recommended interventions are included in the discussion section below. Steps seven through eight will be completed when stakeholders select priority action plans for implementation.

Copies of the data collection tools and question list for PNA II are included on the Capacity Kenya website at www.capacitykenya.org. A list of the tools available is included in Appendix E. Research protocols for both phases of the PNA are available from Capacity Kenya or IntraHealth International.

Study Objectives

To assess the strengths and weaknesses of the training system in Kenya and its ability to produce health workers capable of delivering against KEPH, the PNA Stakeholder group identified nine important objectives for this assessment, divided into two phases:

Phase I: Health worker performance

- Identify competency gaps of health workers at select sites
- Assess health worker views of their performance and perceived barriers or challenges
- Identify key determinants of health worker performance

- Establish perceived level of support that regulatory bodies provide to health workers.

Phase II: Training systems performance

- Identify actual performance of pre-service, in-service, and CPD training systems
- Identify performance gaps in training systems
- Assess perceptions of key actors, including students, school directors, training coordinators, faculty heads, clinical preceptors, MoH personnel, chief executive officers (CEOs) of regulatory bodies, and clients on factors that contribute to or hinder performance of pre-service, in-service, and CPD training systems
- Assess gender disparities in recruitment, admissions, advancement, and retention of students in pre-service, in-service, and CPD training institutions and among the faculty
- Identify best practices as potential interventions to improve the performance of training systems.

Research Questions

The research questions established by the Stakeholder TWG are:

Phase I

- What are the existing competency gaps among health workers at select sites?
- What are the perceived factors (intrinsic and other) that impede health worker performance?
- What support do regulatory bodies provide professionally-oriented experiences (e.g., CPD training, registration, certification/licensure) to ensure requisite competencies are met among health workers?

Phase II

- How well is the PST system performing against the standards selected by the stakeholder group? What gaps exist and what could be done to fill them?
- How well is the IST system performing against the standards selected by the stakeholder group? What gaps exist and what could be done to fill them?
- How well is the CPD system performing against the standards selected by the stakeholder group? What gaps exist and what could be done to fill them?
- What role do gender issues play in the performance of the PS, IS and CPD training systems respectively?

METHODS

The PNA is a cross-sectional, mixed methods study utilizing both quantitative and qualitative data collection. Capacity Kenya worked closely with the PNA Stakeholder TWG, including the Ministries of Health, to develop a set of instruments designed to address the stated research objectives. The methodology for each phase is reported in separate sections below.

Phase I

Study design

In phase I, Capacity Kenya reviewed existing schemes of service from each of six clinical cadres and the Ministries' observation checklists for assessing case management (CM) in specific areas (e.g., FP, VCT, malaria laboratory diagnosis). This information was used to determine competencies against which to evaluate health care workers. Capacity Kenya and the Stakeholder TWG delineated the competencies into technical and overarching competencies. Technical competencies pertain to specific job functions while overarching competencies, such as problem solving and critical thinking, apply to all cadres. Health workers were assessed on their knowledge of malaria case management using a checklist that the Ministries of Health utilize during supervisory visits. In order to determine the acceptable threshold performance of health workers in each CM, the checklists were weighted (scored). The Ministries of Health validated these competencies prior to data collection and weighting of instruments prior to data analysis.

Phase I, conducted in December 2009, gathered data on health worker performance. Due to practical considerations, the initial phase prioritized collecting information from the following cadres of health workers:

- Medical doctors
- Clinical officers
- Nurses
- Midwives
- Medical laboratory technologists/technicians
- Pharmacists and pharmaceutical technologists.

At the request of the MOPHS, a supplementary data collection was conducted for several additional cadres of public health workers in June 2010. Using the same method to delineate technical competencies, Capacity Kenya worked with the MOPHS to incorporate the perspectives of the following four additional cadres to in the study:

- Public health/ environmental health officers
- Nutritionists

- Public health technicians and enrolled community health nurses designated as CHEWs.
- CHWs as community owned resource persons.

Data collection instruments

Capacity Kenya developed a set of instruments designed to address the Phase I research objectives. The PNA Stakeholder TWG validated the instruments. Qualitative data collection approaches included key informant interviews (KII) and focus group discussions (FGD). Quantitative data were collected using several instruments, including a survey of health providers, a health facility survey, observational checklists for service delivery, and surveys on specific areas for service delivery. Data collection instruments were linked to research questions as shown in Table 1 below.

Table 1. Research Questions Linked to Data Collection Instruments

Research Questions	Data Collection Tools	Justification (why that tool for that question?)
1. What are the existing competency gaps among health workers at select sites?	Health Provider Tool	This tool allowed the team to assess technical, behavioural, and overarching competency gaps as known and perceived by selected health care providers in health facilities.
	Facility Checklist (audit tool)	This tool assisted in triangulation of data collected through the health provider tool and observation checklist by assessing health facility capacity (infrastructural and resource-based) to support provision of services in key clinical management areas (FP/reproductive health (RH); MNCH – IMCI; VCT; Malaria; Tuberculosis).
	Observation Checklists	These tools were used to assess health worker performance in CM skills using unobtrusive observations and a checklist based on national CM guidelines in the following areas: IMCI, FP/RH, and VCT.
2. What are the perceived factors (intrinsic and other) that impede health worker performance?	Focus Group Discussion Guide	This tool aimed at gathering group opinion and perceptions of factors that hinder demonstration of competencies by health providers including CHWs.
	Key Informant Interview Guide	This tool was intended to assess from the managerial perspective (Facility In Charge, Medical Superintendent, etc.) what factors hinder health workers from demonstrating competencies at work.
3. What support do regulatory bodies provide to ensure improved competency among health workers?	Health Provider Survey	This tool assessed what technical support regulatory bodies provide to improve on health worker competency.
	Key Informant Interview and FGD Guides	These tools were intended to assess in more detail the perceptions of health workers regarding the support given to health providers by the regulatory bodies.

As part of these data collection instruments, health providers were asked to self assess their competencies, including overarching competencies that contribute to successful service delivery, as well as specific competencies that relate to service provision by their respective cadre. Observational and survey tools of specific service delivery areas included FP, RH, HCT, VCT, the

IMCI, and malaria laboratory diagnosis. In addition, health workers' knowledge of malaria CM was assessed. FGD and KII tools were used to examine perceived barriers to service delivery by health workers, and key informants were also queried about the support received from regulatory bodies. Specific information regarding survey instruments and analytical methods are discussed under each research question. Copies of all data collection instruments are included on the Capacity Kenya website: http://www.capacitykenya.org.

Sampling approach

Due to resource constraints and logistical limitations, 16 districts, two from each province, were randomly selected. See Appendix D for a detailed list of the districts and health facilities sampled[5]. The PNA stakeholder TWG and Capacity Kenya team sought to ensure that health providers surveyed were drawn from a variety of facilities from each of the provinces in order to capture the views of a diverse group of respondents.

Table 2. Respondent Sample by Level of Health Facility

Respondent Type	Level 5	Level 4	Level 3	Level 2	Total
Medical Doctor	11	26	1	0	38
Clinical Officer	20	28	17	0	65
Kenya Registered Nurse (KRN)/ Kenya Registered Community Nurse (KRCHN)	39	146	26	6	217
Kenya Enrolled Nurse (KEN)/ Kenya Enrolled Community Nurse (KECN)	32	98	31	13	174
Midwife	3	17	3	3	26
Pharmacist/Pharm. Technologist	28	44	4	1	77
Med. Lab Technologist	24	44	4	2	77
Nutritionist	14	32	1	0	47
Pub. Health Officer	10	28	9	0	47
Pub. Health Technician	10	31	1	0	42
Comm. Health Workers-Level 1	NA				29

The total number of participants to be included in the health provider survey in Phase I was guided by the sampling process for facility surveys developed by Measure Evaluation[6]. In this sampling method, it is recommended that all health workers be selected in facilities with four or fewer workers, and three health workers in facilities with more than four workers[2]. Health workers were randomly selected at the health facility by the data collection team upon arrival. In order to reach sample sufficiency for Phase I, the PNA team needed to survey 116 institutions as outlined below:

5 Please note: the sampling methodology is not designed to be representative at the district or provincial level.
6 Sampling Manual for Facility Surveys for Population, Maternal Health, Child Health and STD Programs in Developing Countries. MEASURE Evaluation Manual Series, No. 3. MEASURE Evaluation. Carolina Population Center, University of North Carolina at Chapel Hill. July 2001.
[2] Ibid, p. 57.

$$n = z^2_{(\alpha/2)} \bullet ((1-\rho)/\rho) \bullet f/v^2$$

where $z_{(\alpha/2)}$ is the confidence interval, ρ is set at 50%, f is the design effect, and is set to 1.2 based on recommendation from *Measure*, and v^2 is the relative variance, set at 0.2.

$$n = 1.96^2 \bullet (0.5/0.5) \bullet 1.2/(0.2)^2, \text{ n=116}$$

A total of 835 health workers were interviewed as part of the main survey; additional health workers participated in observations of specific competency areas; table 2 shows the sample size for health workers by facility in Phase I.

Phase I also conducted observations of service provision in three areas: FP, HCT, and IMCI. Malaria CM questionnaires were also administered to health workers. The data collection team intended to conduct 603 observations and complete 132 interviews with health providers. The reason for the low completion rate of observations was due, in part, to the length of time required to observe the service, the availability of the service, and the presence of clients seeking that service at the time the observations were conducted. Table 3 details the sample sizes by service area and level of facility (see below).

Table 3. Sample Size of Client Observations by Service Area

Service Area	Sample
FP/ RH	62
HIV Counseling & Testing	58
IMCI	80
Subtotal # of Client Observations	*200*
Malaria CM	111
Total	**311**

Data collection

Prior to data collection, all teams attended a week long training to review all instruments, on how to administer instruments, procedures for ensuring quality control of data and data entry in *EPI Surveyor*, the intent of the various questions, pre-testing of the instruments in the field, and extensive training on conducting KIIs and FGDs. The training was conducted by PNA experts from IntraHealth and AMREF. The supervisors received additional training on how to lead a team in the field, supervise the collection of data, ensure data quality, and were oriented to the Field Manual. In Phase I, Capacity Kenya conducted a total of 835 surveys of health workers at a total of 96 facilities across levels two through five, distributed in 16 districts and eight provinces in Kenya; 514 surveys were conducted in Phase IA and 321 surveys in Phase IB, of which 832 out of 835 health workers provided data on their current cadre. A total of 67 health facilities were visited in Phase IA and 41 facilities in Phase 1B; ten facilities from Phase 1A were re-visited during Phase 1B, a total of 98 facilities in all. Due to fewer staff being available for interviews than listed per the staffing establishment, data collection teams augmented the number of facilities surveyed.

Data collection occurred in December 2009 (Phase IA), with a supplemental data collection for several additional cadres from June to July 2010 (Phase IB). A total of five teams collected Phase IA data and seven teams completed the remaining Phase IB data collection in 16 districts. Each team was comprised of approximately seven members, including five research assistants, one team manager, and one supervisor.

Survey instruments included health provider questionnaires, observational checklists for specific service delivery areas, a facility audit tool, FGDs, and KII guides for each of the cadres. For community level data collection, a separate questionnaire and FGD guide were used with community members.

Data was collected using paper forms and uploaded through cell phones using *Epi Surveyor* and transmitted to the IntraHealth office in Nairobi. As many research assistants were new to using smart phone technology for data collection, data was also collected via paper forms. Data from FGDs in Phase I were recorded via audiotape and note taking. All quantitative data was transferred from *Epi Surveyor* into SPSS version 17 for further analysis.

Table 4. Phase I Focus Group Discussions

District/Province	FBO/Private	Public	Clinical Officers	Nurses
Bungoma/Western	4	4	4	4
Machakos/Eastern	4	4	4	4
Taita Taveta/Coast	4	4	4	4
TOTAL	24		24	

Focus group discussions. FGDs were conducted in three districts drawn from three purposively selected provinces. The districts of Bungoma (Western Province), Machakos (Eastern Province), and Taita Taveta (Coast Province) were purposively selected. The FGD targeted two cadres: clinical officers and nurses. Within each district, a total of eight FGD were conducted, four with nurses and four with clinical officers. The FGD were then split equally among GOK and FBO/private facilities. The nursing cadre was further divided into registered and enrolled nurses, with one FGD conducted for each group in the two types of facilities (GOK, FBO/Private). Participants were randomly selected from the pool of health workers interviewed using the health provider survey.

Key informant interviews. KIIs were conducted in the three selected districts: Bungoma, Machakos, and Taita Taveta. The following participants were targeted for interviews:

- Medical superintendents
- District medical officers of health
- District medical lab technologists
- District public health nurses
- District pharmacists

- District clinical officers
- District pharmaceutical technologists
- Nursing officer in-charge.

Of the 24 planned KIIs, 20 interviews were conducted, three with participants in Bungoma, seven in Machakos, and ten in Taita Taveta Districts.

Observation of service delivery. Observation checklists for specific service areas were administered to selected health workers. Registered and enrolled nurses and voluntary counselors were observed providing VCT services. Medical doctors, clinical officers and nurses were observed providing IMCI while nurses and clinical officers were observed providing RH/FP services. A minimum of three cases for each health worker in each service area were planned to be observed. A questionnaire was administered to medical doctors, clinical officers and nurses to assess their knowledge of malaria CM. Of the planned 132 malaria CM surveys, 111 were completed. Two hundred of the 603 planned client observations were completed for FP/RH, VCT and IMCI. The reason for the low completion rate was due, in part, to the length of time required to observe the service, the availability of the service, and the presence of clients seeking that service at the time the observations were conducted.

Facility audits. A facility audit was designed to assess compliance of the facility with national norms and standards to deliver KEPH in all the levels of the health system. The audit assessed Staffing in terms of cadres, physical and basic infrastructure, room designation, medical equipment and supplies, laboratory equipment and supply of drugs. Out of 67 health facilities, 63 of the facilities were audited.

Data analysis

Quantitative data. Quantitative data were reviewed for quality, cleaned, and analyzed using SPSS, unless otherwise noted, by the assessment teams in Nairobi and Chapel Hill. Most data analysis utilized descriptive statistics. Where appropriate, results of multivariate regression analysis are also presented, and results are shown in Appendix H.

Data quality checks

Data quality control checks were conducted in a similar approach for both Phase I and phase II data. Six data clerks were employed to check the accuracy of data entry into Epi Info. Data clerks performed a 100% check of the hard copy surveys against data entered into the database. The quality control process entailed four steps:

1. The total number of hard copy surveys for each type of respondent was compared against the total number of database records. This was performed to ensure there was no duplication or omission of records.

2. Data was checked to ensure the hard copy surveys matched the data in the database. This work was done in teams of two; one clerk read aloud the hard copy data and one clerk checked against the database.
3. Identification of data entry errors
4. Database errors were checked against the corresponding hard copy survey to determine if the error was from the recording on the paper survey or in data entry.

Data quality reports were generated for each subset of survey tools. Finally, the re-entry of correct values was performed by the data clerks. To minimize the chance of error, data clerks did not correct the errors on the same tools on which they performed the data quality checks. Corrections were entered directly into the data set and highlighted in yellow to indicate specific fields where data was corrected.

Qualitative data. The overall aim of the qualitative data was to provide in-depth insights regarding factors that facilitate or hinder competencies of health workers as perceived by health workers and managers. Data collected also examined perceptions of support given by professional bodies, as well as the perceptions of community members regarding the quality of services provided by CHWs. Qualitative data from FGDs and KIIs were analyzed using *Nvivo v.8*. A coding framework for qualitative data was developed following themes that had been identified in the analysis plan and used as broad categories for data indexing. A conceptually driven thematic framework was developed that articulated key dimensions of issues raised by respondents during FGDs and in-depth interviews. Data was coded following this framework, to a point of saturation. Emerging issues were subjected to thorough querying, iterative comparison in order to develop further insights into the strengths and weaknesses of health worker competencies. Analysis reports were developed under each dimension of key themes according to study objectives before a detailed layered analysis was performed.

Study limitations

The selection of facilities for study in Phase I was conducted via random sampling procedures. The number of participants was limited by resources and other constraints such as fewer respondents present on site and fewer clients especially for CM during the period of assessment. Individual health providers could not be selected at random *a priori*, therefore their responses and the observations of service delivery are a convenience sample based on availability of staff at the facility on the day when the team arrived to conduct the survey. Difficulties in conducting client observations in FP, VCT, and IMCI substantially reduced the size of this sub-sample in Phase I. As different survey instruments and approaches were used to address specific research questions, further limitations are discussed under each research question.

Ethical considerations and human subjects protection

All field managers and supervisors leading the data collection exercise completed an online course from National Institute of Health on human subject's protection training course[7], and all data collectors were trained in human subjects' protection by IntraHealth as part of the training

[7] http://phrp.nihtraining.com/users/login.php

and preparation for data collection. In addition, field managers were trained on adequate safeguards to ensure the confidentiality of participants' private information during the study, especially during CM observations.

All study protocols and instruments were reviewed and amended by the PNA TWG and by IntraHealth's Monitoring and Evaluation team based in Chapel Hill, North Carolina. The Ministries of Health reviewed and approved the protocol for Phase I of the PNA.

All respondents were provided with information on the PNA, including its purpose, objectives, and the plans for dissemination of results. Prospective respondents were instructed that participation was entirely voluntary, and that every effort would be made to ensure confidentiality. Informed consent was obtained from all participants prior to beginning the assessment.

Phase II

Overall study design

To conduct phase II, the Stakeholder TWG needed to adopt a performance criteria or standards (WHO, 2007) against which to measure the performance of the health care training system. Kenya lacks a harmonized strategy or advisory body to provide such training and education standards for various health cadres and the current mechanisms to enforce standards and compliance with regulations are inadequate (ref). This is attributed in part to the fact that training of health workers is regulated at different levels and by different agencies or institutions.

At the MoH level, the Directors at MoMS and MoPHS provide oversight in the training and regulation of health training. The registrars and staff that form various committees of regulatory bodies are MoH personnel and are appointed by the directors. The Commission for Higher Education (CHE) is a body corporate of the MOHEST mandated to accredit university education in Kenya. It assesses, for example, whether a potential university has adequate physical, human, library, and financial resources; viable academic programs; and a sound structure of governance. CHE also equates education in Kenyan universities with that of foreign universities so as to facilitate the transfer of credits between institutions and quality of education within and outside Kenya. Health professional regulatory bodies regulate training and practices of targeted health workers in this study. These include the Nursing Council of Kenya (NCK), the Pharmacy and Poisons Board, the Medical Practitioners and Dentists Board, the Clinical Officers Council, the Medical Laboratory Technologists and Technicians Board, and the Nutritionists and Dieticians Council. These bodies regulate training and practice of targeted health workers in this study. At the time data was being collected, there were no regulatory bodies specifically for PHOs, PHTs (designated as CHEWs), or CHWs. These health workers are regulated by the Public Health Act of Kenya (Cap 242 of the Laws of Kenya).

Selection of performance criteria. In consideration of this context, in its March 11, 2010 meeting, the TWG discussed how to best establish the performance standards for the PNA. Prior

to the March 2010 TWG meeting, the NCK adapted the *Guidelines for Evaluating Basic Nursing and Midwifery Education and Training in the African Region* [*WHO Guidelines*] (WHO, 2007) and established a set of training standards for nurse education in Kenya which are also in line with the guidelines of International Council of Nursing. The WHO Guidelines that the NCK adapted are used to "propose a process and content for evaluating existing basic and midwifery education programs so as to identify the changes needed" (WHO, 2007, p. 1) in nine standard areas of focus:

- Mission, philosophy and objectives
- Educational program
- Assessment of students
- Students issues
- Academic staff/faculty
- Educational resources
- Program evaluation
- Governance and administration (leadership, management, and administration)
- Continuous renewal.

Under each of these standard areas the WHO Guidelines also suggest a number of sub-standards that an institution must meet to attain the basic level and might meet to reach the quality level standard. Furthermore, the WHO Guidelines also discuss the content of and suggest a process for conducting evaluations to help assess institutions and identify them as potential candidates for accreditation.

An evaluation of training programs using the WHO Guidelines seeks to ensure that these programs:

- Are consistent with the health needs of the community in terms of professional competence, ethical behavior, cost effectiveness, accessibility, promotion of public health, and benefit to the community, among others
- Meet the quality requirements of the school
- Having the necessary human, material, physical (infrastructure) and financial resources, in both quantity and quality
- The process of staff recruitment, development, and retention
- A curriculum that is dynamic and responsive to community needs and enables the achievement of the learning objectives
- A system of student and teacher evaluation
- A mechanism for monitoring the implementation and review of the curriculum (WHO, 2007, p. 5)

- Furthermore, in an established accreditation cycle, the four stages suggested for the evaluation process are:
- Planning for the evaluation of the institution
- Performing internal/self-evaluation of the institution
- Conducting an external evaluation
- Consideration of the evaluation reports (p. 5).

Given the congruence between the goals of the WHO Guidelines and the overall goal of Phase II of the PNA, and the flexibility of the WHO Guidelines to be adapted to various national and local contexts, the TWG agreed to utilize the WHO Guidelines (2007) to establish performance standards for phase II of the PNA. Both the content of the standards and the process of evaluation suggested in the WHO Guidelines were adapted to meet the needs of the PNA as described below.

Guideline adaptation. The research team, in conjunction with the TWG, adapted the content and the process of the WHO Guidelines for use in the PNA as follows:

Refocusing to the systems level

The WHO Guidelines are normally used to evaluate the performance of individual institutions in order to identify areas of concern and/or assist in making accreditation decisions. Utilizing the WHO Guidelines to evaluate the performance of the health training system requires aggregating results and then analyzing data to look for broad gaps. To accomplish this, the research team standardized questions across respondent groups for ease of comparison, aggregated results, and then analyzed data according to level of institution, location, ownership, and gender of respondent.

Reorienting the process to a compressed time frame

The WHO Guidelines suggest that the overall internal and external evaluation process for an institution will likely last four to six months (p. 6) after an institution has made a decision to participate in an evaluation. Within the compressed time frame of the PNA, it was not possible to carry out all four stages of the evaluation process described above, including a self-evaluation by each institution. The research team therefore adjusted the process and roles such that:

- In lieu of self-evaluation, institutional participants (school directors, training coordinators, faculty members, clinical preceptors, and students) provided input by completing self-administered questionnaires regarding their perceptions of performance. Select respondents also participated in interviews and focus groups. Training coordinators also assisted with a facility audit at each institution.
- This data was supplemented by data gathered from MoH, regulatory bodies, professional associations, and clients of health care centers. The Capacity Kenya research team served as both the internal and external data gathering team, working in concert

with school directors and administrators to organize respondents. The research team wrote the preliminary report identifying major gaps.

- The TWG provided input throughout the process and also met to consider and validate the preliminary findings and make recommendations.

Additional information on the data gathering process is provided below.

Identifying areas of concern

In the process of self-evaluation under the WHO Guidelines, review committees at each individual institution are responsible for assessing how well the institution meets each standard and then providing evidence for each standard's evaluation. The standards under the WHO Guidelines are not in wide use in Kenya and therefore a standardized system of grading was not in place to use in the PNA. The research team chose 75% (the same level used in Phase IA and B) as a quantitative threshold level against which to identify areas of concern for phase II. If 74% or fewer of the respondents answering a particular item identified that item as not meeting a standard (i.e., the institution involves stakeholders in updating its mission), then the item was flagged for concern. Additional information is provided in the data analysis section below.

Adding areas of study

In addition to studying how the health care training system was performing against the basic standards adapted from the WHO Guidelines, the TWG decided to add questions to gather data about:

- Gender equity and opportunity
- Specific content areas (HIV, Malaria, TB, etc.) in the curricula
- Students' readiness to provide health care under KEPH
- Social responsibility and community involvement of training institutions
- Linkages between the health care system, including support for training institutions provided by Ministries and regulatory bodies
- Performance management and support for faculty and clinical instructors.

The standard on governance and administration was also amended to read "Leadership, management and administration."

Table 5. Research Questions Linked to Data Collection Instruments

Research questions	Data collection tools	Justification (why that tool for that question?)
1-3. How well is the PST/IST/CPD system performing against the standards selected by the stakeholder group? What gaps exist and what could be done to fill them?	Self-administered questionnaire	This tool was used to gather participants' perceptions regarding the extent to which their institutions were meeting the basic standards and/or other contextualized areas.
	Key Informant Interview guides	This tool was used with select respondent types to gather data regarding participants' perceptions about the performance on the health training system as well as the role of gender in the health training system.
	Focus group discussion guides	This tool was used to gather student group perceptions on factors that affect the health training system.
	Institutional audit	This tool assisted in triangulation of data collected through the self-administered questionnaires, key informant interviews, and focus groups.
4. What role do gender issues play in the performance of the PS, IS, and CPD training systems?	Self-administered questionnaires	This tool was used to gather data on participants' understandings of the role of gender in health training.
	Key informant interviews	This tool was used to triangulate data gathered on self-administered questionnaires and to gain a deeper understanding of participants' perceptions and opinions.
	Focus group discussion guide	This tool was used to gather students' group opinion and perceptions of gender factors that affect the health training system.
	Institutional audit	This tool was used to gather data about the number of male and female faculty, students, and staff, as well as data about facilities to support males and females (i.e., dormitories).

Data collection instruments. In phase II of the PNA, qualitative and quantitative data were gathered through self-administered questionnaires, KIIs, focus groups, and an institutional audit for each institution visited. Quantitative and qualitative questions were primarily structured around the basic standards outlined in the adapted WHO Guidelines and contextualized for Kenya where possible (e.g., use of Kenya's specific professional bodies—regulatory and associations). Table 5 shows how the data collection instruments supported each research question.

All study protocols and instruments were reviewed and amended by the PNA TWG and by IntraHealth's Monitoring and Evaluation team based in Chapel Hill, North Carolina. The Kenya National Council for Science and Technology also reviewed and approved the protocol for Phase II.

Sampling approach

A two-stage sampling methodology was used in Phase II of the PNA whereby health training institutions were randomly sampled based on the type of institution (tertiary, middle-level, rural health training, or other). In each sampled institution, respondents were sampled or selected depending on the inclusion criteria. Health facilities used by health care institutions for clinical placements were included in the sample of health facilities.

Phase II of the PNA focused on the assessment of PS/IS/CPD training systems. There are many factors that influence the capacity of these institutions. For the purposes of this study, three factors considered and sampled for were:

- Ownership [i.e., public, private, FBO/ non-governmental organization (NGO)]
- Level of facility [i.e., middle level (colleges offering diploma or certificate training) or tertiary institutions (universities)]
- Category of training offered *(*i.e., PS/IS/CPD institution or placement site, recognizing that one institution may offer training in more than one category).

Sampling of institutions and respondents. At the time data was collected, there were 88 health training institutions approved by health professions regulatory boards and councils and classified into three strata: tertiary (14%), middle level (81%), and rural health training centers[8] (6%). Each of these institutions was further divided into multiple strata according to medical departments (programs). Each department (program) had an unspecified number of teaching staff and students. Further, each institution fell under a specific managing arm namely CHAK (13%), KEC (16%), NGO (11%), Private (16%), and Public (44%).

Table 6. Distribution of Institutional Sampling

Category	CHAK	KEC	NGO	Private	Public	Total	%
Middle level Training Institution	8	15	9	11	28	71	80%
Tertiary level Training Institution	3	0	0	3	7	13	14%
Rural Health training centers	0	0	0	0	5	5	6%
Totals	11	15	9	14	40	89	100%
%	13%	16%	11%	16%	44%	100%	

In sampling training institutions to be included in the PNA, a stratified random sampling process that would ensure a representation of each of strata and managing arm was required. The PNA planned to assess and derive performance gaps in training systems for the following health areas: medicine, nursing, clinical medicine, medical laboratory technology/science, public health, pharmacy, pharmaceutical technology, nutrition, and CHWs.

Basic sample sizes

Figure 3 provides an example of the sample size calculation for training coordinators.

[8]Rural health training centers were initially health centers but are now sub-district hospitals that are designed to offer rural health experience to students attending middle and tertiary level pre-service training schools. They are also used as CPD centers for various CPD providers.

Figure 3. Sample Size Calculation for Training Coordinators

Sample size calculation
To arrive at a minimum sample size of respondents at the training institutions, the standard formula for a simple random sample with unknown population size and unknown mean has been applied, where $Z_{\alpha/2}$represents the confidence interval, selected at 95%, ρis any relevant proportion (statistic) of the study, set at 0.5 (50%) to maximize the sample size, and ε is the maximum error of the point estimate, set at ±5%[9].Thus, the minimum sample size, $n = z^2_{(\alpha/2)} \bullet (\rho \bullet (1-\rho))/\varepsilon^2 = 384.2$.

This yields a sample size of 385 respondents to be drawn from each of the departments/programs at the institutions. And for this number to be reached then a minimum of 48 health institutions (assuming the mean number of departments/programs is eight per institution) will be included in the study.

Using the calculation above, Capacity Kenya planned to ask a minimum of 384 training coordinators to complete a self-administered questionnaire and then to add at least one additional faculty member at each institution for a maximum of 768 respondents.

Number of training institutions. As detailed in the box above, the assessment planned to target at least 384 training coordinators/faculty heads of departments/programs and for this number to be reached a minimum of 48 health institutions will be included in the study.

Table 7 below shows the planned sample size by ownership of institution.

Table 7. Institutions to be Sampled by Ownership

Category	CHAK	KEC	NGO	Private	Public	Total
Middle level training institution	4	8	5	6	15	38
Tertiary level training institution	2	0	0	2	3	7
Rural Health training centers	0	0	0	0	3	3
Totals	6	8	5	8	21	48

Other sample sizes. Other sample sizes were calculated as follows:

- Clinical placement sites. These were automatically selected based on the institution. A maximum of 48 placement sites were planned for the assessment.
- Client exit. To have a representative sample, the research team planned to interview a minimum of 384 clients/patients who would have been served by students on practicum with, at most, ten clients per health facility (placement site).
- FGDs for students. Two FGDs, one for male students and another for female students, were to be conducted at a quarter (12) of the sampled training institutions and sampled as follows:
- Four in tertiary institutions

[9] See, for example, Hogg, R. and Tanis, E. 1997. Probability and Statistical Inference (5th Edition). Prentice Hall: Upper Saddle River, NJ, pp. 326-32.

- Seven in middle-level institutions
- One in a rural-health training center.

The research team planned to include between eight and ten final year students in each focus group. Table 8 summarizes the sample for Phase II.

Data collection

The Phase II assessment of students and faculty members at training institutions, regulatory bodies and professional associations, and other key stakeholders occurred in June and July 2010. During phase II, seven teams with a total of 44 data collectors visited health care training institutions and health care facilities/clinical placements sites in Kenya. Respondents from 42 training institutions, including middle- and tertiary-level, rural health and other training centers, as well as 34 hospitals and rural health clinics attached to these training institutions, were surveyed in Phase II. The health care facilities where data was collected are shown on the map in Appendix B.

Quantitative and qualitative data were collected from school directors, training coordinators, faculty, clinical instructors, and students using self-administered questionnaires, key informant KIIs, and FGDs. Teams typically spent one-half to one day at each institution. In all, 1,329 respondents participated in the Phase II data collection process. Capacity Kenya was also able to conduct an institutional audit in all of the health care training facilities. Client exit interviews were conducted at clinical training sites to determine client satisfaction with services provided by students. Additionally, representatives from Ministries of health, regulatory bodies, and professional associations provided data through KIIs. Table 8 shows the actual number of respondents from which data was collected by type of institution while Table 9 shows the data collection methods used for each respondent group.

As in Phase I, data collectors participated in a week-long training session before collecting data. All field managers and supervisors leading the data collection exercise underwent an online human-subjects protection training course[10], and all data collectors were trained in human subjects' protection as part of the training and preparation for data collection. In addition, all data collectors were trained on adequate safeguards to ensure the confidentiality of participants' private information during the study.

[10] http://phrp.nihtraining.com/users/login.php.

Table 8. Summary of Sample Sizes (n) by Type of Data Collection Tool and Type of Training Institution

Respondent	Tertiary	Middle Level	Rural Training Centers	Other Training	Health Facilities	Other	Total
	n	n	n	n	n	n	n
# of Institutions	7	32	2	1	34	N/A	42
School/Directors - self-administered questionnaire (38) and interview (37)	7	31	1	0	N/A	N/A	39
Training Coordinators – self-administered questionnaires	22	68	0	2	N/A	N/A	92
Faculty Members – self-administered questionnaires	29	168	0	2	N/A	N/A	199
Clinical preceptor/mentor - self-administered questionnaire (57) and interview (59)	6	49	3	0	58	N/A	58
Facility audit	7	32	2	1	N/A	N/A	42
Client exit interview (10/site)	N/A	N/A	N/A	0	347	N/A	347
Student self-administered questionnaires (16/site)	86	492	0	6	N/A	N/A	584
Students – Focus Groups	5	10	0	0	N/A	N/A	15
Regulatory Bodies, Dir. of Med. Services & Prof. Assoc.	N/A	N/A	N/A	N/A	N/A	10	10

In order to improve the quality of data collection, Capacity Kenya requested thatthe Ministries of Health send letters to school directors and provincial directors of medical services and public health and sanitation describing the PNA and asking for support. The Ministries of Health were supportive in this effort. Additionally, the data collection teams:

- Called the institution in advance to inform the school director of the date and time that data collection would take place
- Attempted to visit each provincial director in advance of the data collection
- Introduced themselves to the head of hospital or health facility before interviewing clinical preceptors and clients
- Informed all subjects of the approximate time commitment involved with data collection
- Reviewed forms before letting subjects leave the data collection area
- Shared daily experiences over email so that all teams would benefit from lessons learned.

Data collected through self-administered questionnaires, KIIs, and facility audits were transported to the Capacity Kenya office for inputting. Client exit interview data were uploaded through cell phones using *Epi Surveyor* and transmitted to the IntraHealth Office in Nairobi. Data from FGDs in Phase II were summarized during FGDs as well as being recorded via audiotape and note taking. Other data was entered into *Epi Info*. All data is on file at the Nairobi office of Capacity Kenya and will also be archived at IntraHealth International, Inc. in Chapel Hill, North Carolina, USA.

Table 9. Data Collection Instruments by Respondent

Respondent Group/Data Collection Method?	Self-administered questionnaires	Key Informant Interviews	Focus group	Facility Audit
School/Institution Directors/Principals/ Deans	X	X		
Training Coordinators/Faculty Heads	X			X-with data collector
Faculty Members	X			
Clinical Instructors	X	X		
Students	X		X	
Clients of Clinical Services		X		
CEOs of Regulatory Bodies/Professional Associations (RD)	X	X		
CEOs of Professional Associations	X	X		
Directors of Medical Services (MD)	X	X		

Data analysis

The standards for quality education utilized in phase II of the PNA cover broad categories related to process, content, outcomes, and educational environments. Use of these standards is not intended to single out individual institutions or their particular deficiencies. Rather standards should function as "a lever for change and reform" (WHO, 2007, p. 3) and point to areas of concern which can be addressed by involved stakeholders. Data for Phase II of the PNA was analyzed and reported accordingly.

Quantitative data. Double-keyed entry was not initially used for data entry. Therefore, data quality checks were performed on 100% of the data collection instruments in PNA II.

Data quality checks. As in Phase I, six data clerks were employed to check the accuracy of data entry into Epi Info. Data clerks performed a 100% check of the hard copy surveys against data entered into the database. The quality control process entailed four steps:

- The total number of hard copy surveys for each type of respondent was compared against the total number of database records. This was performed to ensure there was no duplication or omission of records.
- Check to ensure the data from the hard copy surveys matches the data in the database. This work was done in teams of two; one clerk read aloud the hard copy data and one checked against the database.
- Identification of data entry errors
- Database errors were checked against the corresponding hard copy survey to determine if the error was from the recording on the paper survey or in data entry.
- Data quality reports were generated for each subset of survey tools. Finally, the re-entry of correct values was performed by the data clerks. To minimize the chance of error, data

clerks did not correct the errors on the same tools on which they performed the data quality checks. Corrections were entered directly into the data set and highlighted in yellow to indicate specific fields where data was corrected.

Quantitative data were then cleaned and analyzed using SPSS, unless otherwise noted, by the assessment teams in Nairobi and Chapel Hill. All quantitative data analysis for Phase II utilized descriptive statistics.

As mentioned above, in Phase II, 75% was utilized as the threshold to delineate areas of concern for questions related to a required standard area (see Table 10 for examples).

Table 10. Examples: Identifying Areas of Concern

Sample Question	Potential Responses	Criteria for Identifying an Area of Concern
Faculty, staff, students, and other stakeholders are represented on the curriculum committee.	Yes/ No/ I don't know	If 74% or fewer respondents answered "Yes" to this question then it is flagged as an area of concern.
The admission policy clearly states the process and procedure for selecting students.	Strongly disagree Disagree Not sure Agree Strongly agree	Unless 75% or more of the respondents answer "Agree" or "Strongly Agree" this will be flagged as an area of concern.

For questions not related to a required standard (i.e., "How often is your job performance assessed?") data are broken out and reported without highlighting areas of concern. Demographic (i.e., number and age of faculty) and resource statistics (i.e., number of computers) are reported in the aggregate and/or by type of training institution, location, or ownership level.

Qualitative data. The overall aim of the qualitative data was to provide in-depth insights regarding the performance gaps of the training system at PST, IST, and CPD level, the perception of key stakeholders on factors that facilitate or hinder performance of the training system including gender equity, and identify potential best practices that improve performance. Qualitative data from self-administered questionnaires, FGDs, and KIIs were analyzed using *N*vivo* Version 8 and manual coding techniques. A coding framework for qualitative data was developed following themes that had been identified in the analysis plan and used as broad categories for data indexing. A conceptually-driven thematic framework was developed that articulated key dimensions of issues raised by respondents during FGDs and in-depth interviews, and in response to open-ended questions on self-administered questionnaires. Data was coded following this framework to a point of saturation. Emerging issues were subjected to thorough querying, searching, and constant comparison in order to develop further insights that were used in explaining the performance gaps within the health training system and health worker competencies. For FGD and interview data, summary reports under four key themes were prepared and quotes were selected to illustrate the argument in each theme. The four key

themes are impact of gender in training, the alignment of training curriculum with the government strategy for delivering care (KEPH), the challenges facing the education program within the health training system at various levels (PST, IST and CPD), and issues relating to governance and leadership. In cases where the amount of qualitative data from open-ended questions on self-administered questionnaires was small, data were coded manually to discover emerging themes related to each specific question. Qualitative findings are reported alongside the quantitative results.

Study limitations

Reaching sample size. In phase II, data collectors also faced some difficulties reaching the intended sample size of respondents. Data was collected for approximately four weeks starting in mid-June 2010. Due to variations in exam and holiday schedules between the sampled training institutions, not all student groups were present during the planned visits of data collectors. The data collection team also encountered institutions that had closed and/or not yet started a program as advertised. In these cases, Capacity Kenya sampled respondents from similar institutions within the geographic area of the target institution. Table 8 shows the numbers of respondents by respondent type. The actual number of individual respondents from rural health training centers (n=4) and other types of facilities (n=10) is very small. Results are therefore presented primarily from tertiary and middle-level institutions. Where adding results from rural health training centers and other types of training institutions provides significant information, results are also included below.

Reporting on perceptions. One potential limitation of phase II is that much of the data gathered is based on the perceptions of participants involved in health care training rather than on specific observations of participants or institutions. For example, school directors, faculty members, and training coordinators were asked if their institution had a mission statement. Their responses were based on their individual understandings of whether or not the mission statement actually existed. Data collectors also asked during the institutional audit if a copy of the mission statement was available and marked responses on the audit accordingly. However, it was not possible in all cases to visually verify or obtain a copy of the actual statement.
In the evaluation process suggested in the WHO Guidelines, individual institutions must evaluate their own performance against the guidelines and provide evidence to substantiate the rating they give themselves. The process requires key institutional stakeholders (e.g., school directors, faculty, students) to share their individual perceptions of their institution's performance. The Capacity Kenya team recognized that having individuals report their perceptions would be a limitation in trying to ascertain exactly how many institutions meet all basic and quality standards. However, given that the PNA was trying to evaluate the training system and uncover potential broad gaps, the team also recognized that individual perceptions are important and could add meaningful data to the process. Involvement of the SWG in reviewing and validating findings helped to balance this limitation and prevent bias.

Delineating PST, IST, and CPD issues. Initially, the PNA sought to examine how PST, IST, and CPD systems perform separately and to determine which gaps exist in each system. As data from

phase II of the PNA presented in Table 11 below indicates, breaking the training system into distinct levels of PST, IST, and CPD is not as practical as first envisioned; many institutions offer multiple types of training.

Table 11. Type of Training Offered in Sampled Institutions

Type of Training Offered	PST ONLY	IST ONLY	CPD ONLY	PST-IST	PST-CPD	PST-IST-CPD	Total
# of Institutions	12	4	1	14	4	7	42

- In reviewing the data collected, delineating results by level of training institution is more informative than focusing on type of training offered. Consequently, the research questions for phase II were reframed as:
- How well is the health care training system performing against the standards selected by the PNA stakeholder group? What gaps exist and what could be done to fill them?
- What role do gender issues play in the performance of the health care training system respectively?

Ethical considerations and human subjects' protection. As described above under Phase I, all potential survey respondents were provided with information on the PNA, including its purpose, objectives, and the plans for dissemination of results. Prospective respondents were instructed that participation was entirely voluntary, and that every effort would be made to ensure confidentiality. Informed consent was obtained from all participants prior to beginning the survey. At one school the deputy principal called students to participate in the focus group by placing their names on a board. The students were concerned that their names were on the board but all were willing to participate in the study after the team explained the purpose and confidentiality of data to the students.

Findings Phase I: Health Worker Performance

Background

Phase I of the PNA seeks to identify strengths and weaknesses in technical and overarching competencies of health workers across all targeted cadres involved with delivering the KEPH at levels one through five of the health care system. The TWG determined the PNA should first ascertain to what extent health workers are performing at desired levels in order to successfully deliver the KEPH and provide the citizens of Kenya with quality health care and improved health outcomes.

The research team identified four key research objectives for the PNA: (1) to identify competency gaps of health workers at select sites, (2) to assess health worker views of their performance and perceived barriers or challenges, (3) to identify key determinants of health worker performance, and (4) to establish perceived level of support that regulatory bodies provide to health workers.

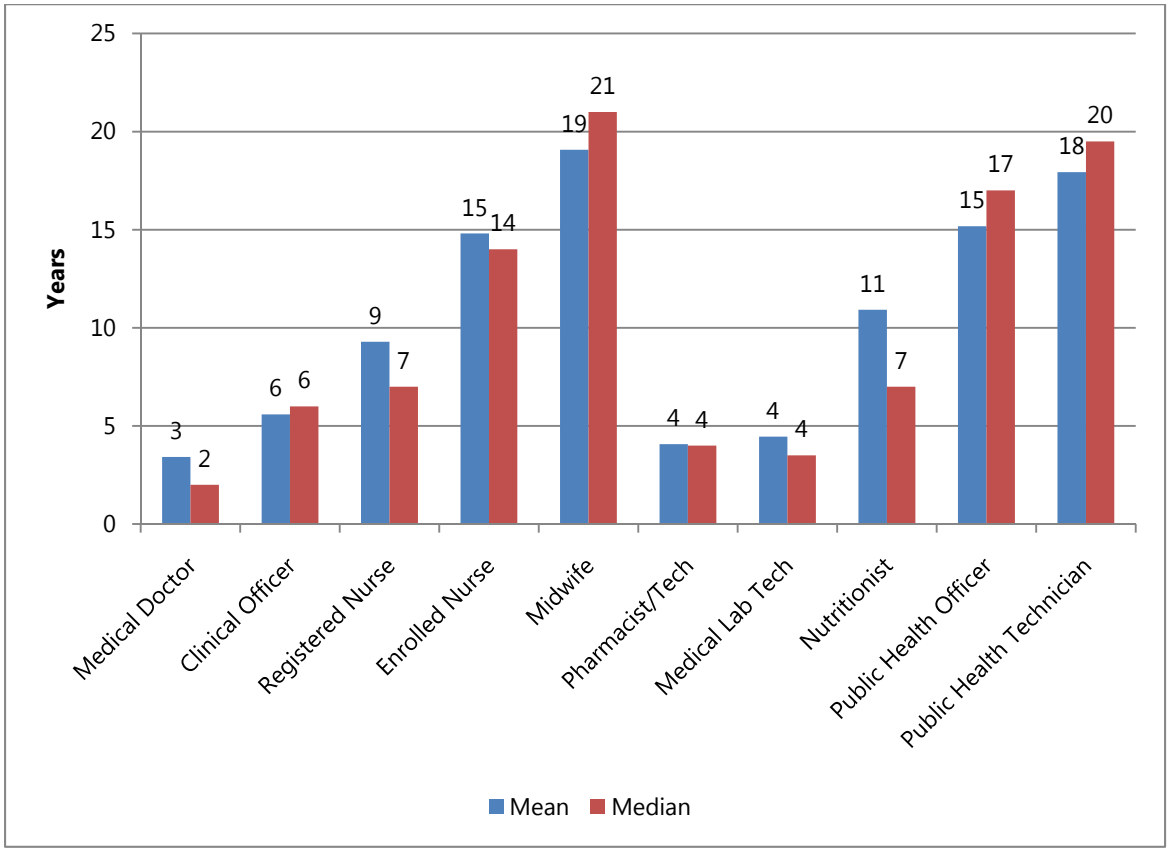
Three fundamental research questions were developed to assess the strengths and weaknesses of health workers competencies and to address the identified research objectives:

- What are the existing competency gaps among health workers at select sites?
- What are the perceived factors, intrinsic and other, that impede health worker performance?
- What support do regulatory bodies provide, such as professionally-oriented experiences including CPD training, registration, certification, and licensure, among others, to ensure requisite competencies are met among health workers?

Health worker characteristics

The PNA collected data from 835 health workers as part of the Phase I data collection. For this sample of health workers, there was substantial variation in the reported average number of years worked within their current profession by cadre. Figure 4 shows both the mean and median number of years worked in the current profession by cadre of health worker.

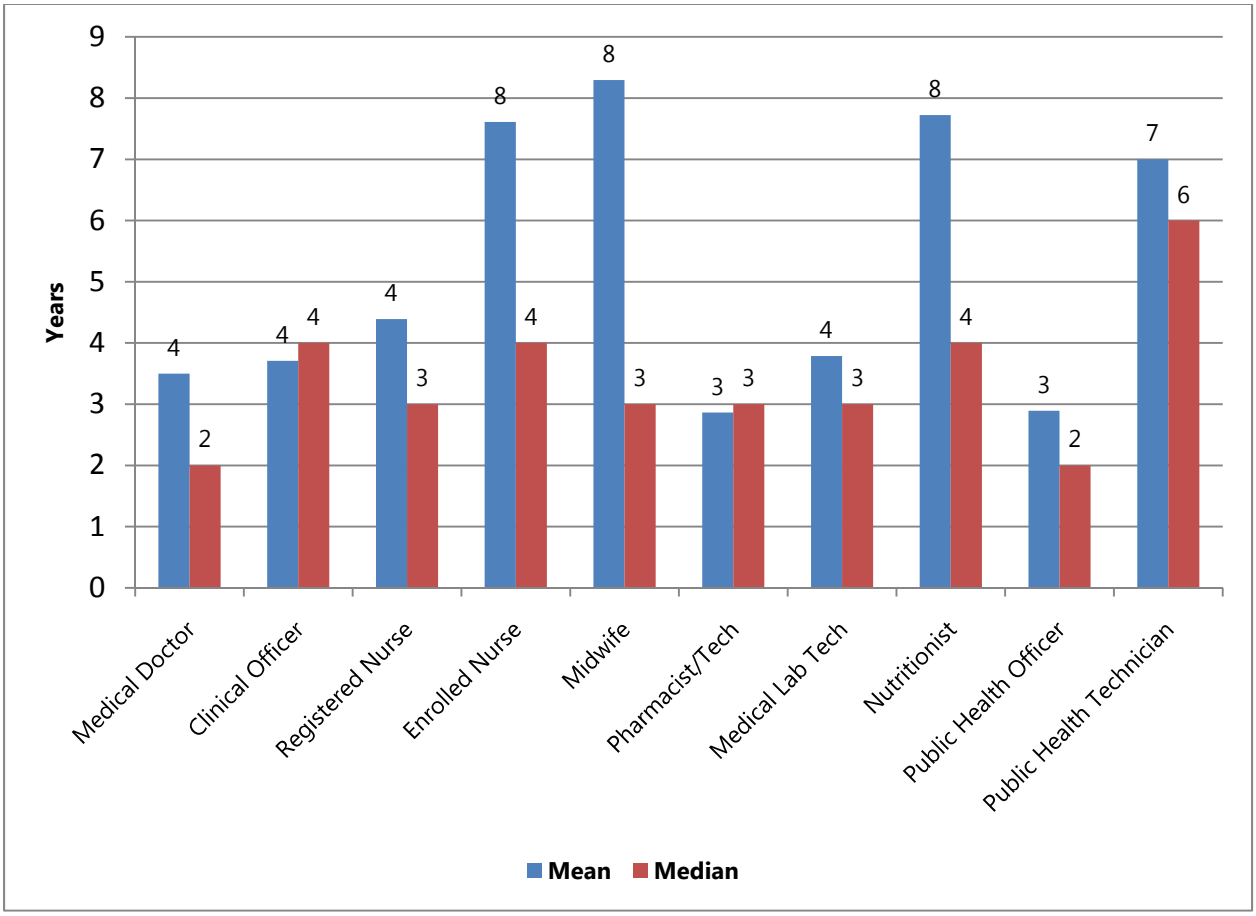
Figure 4. Average (Mean and Median) Years Worked in Health (Current Profession) by Cadre



Enrolled nurses, midwives, nutritionists, public health officers, and PHTs are characterized by a high average number of years working in their current profession, ranging from 15 to 19 (mean)

years worked in health. Medical doctors, pharmacists, pharmacist technicians, and medical laboratory technologists and technicians have the shortest average duration in health, three to four (mean) years.

Figure 5. Average (Mean and Median) Years Worked at Current Health Facility by Cadre



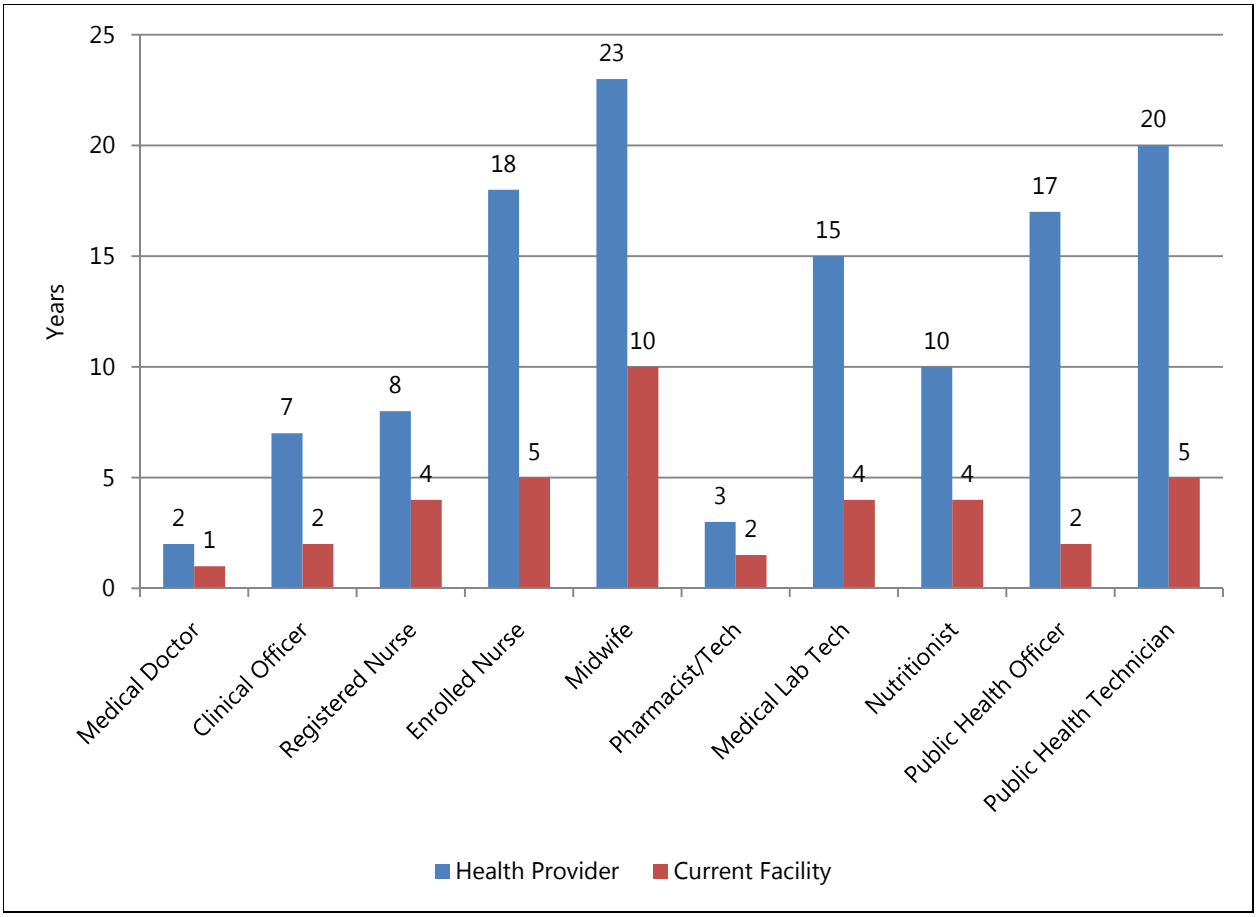
In addition to variation in the average number of years worked in their current profession, the average number of years worked in their current health facility also varied by cadre for this sample of health workers. Figure 5 shows the mean and median number of years for a health worker at their current health facility. Public health technicians reported the highest average (median) time employed at their current health facility.

Enrolled nurses, midwives and nutritionists have been working, on average eight (mean) years in their current facility, while the median time for these professions was about half, four years. This indicates that the sample of enrolled nurses, midwives and nutritionists surveyed by the PNA are characterized by a minority of staff who have been at the same facility for a longer duration, while the majority have been at the facility roughly half as long.

Comparing the median number of years worked in their current profession with the median number of years at the current facility by cadre reveals an interesting ratio (see Figure 6). The

ratio suggests, to some extent, the mobility of different cadres as represented by the health workers in this survey. For example, midwives reported a median ten years in their current facility and approximately 23 median years in their current profession. This suggests that midwives may not be as mobile as some of their counterparts, although it is not known whether this is by choice, due to limited opportunity, or influenced by the changing trend in which many nurses (KECHN and KRCHN) now also function as midwives.

Figure 6. Average (Median) Years in Health and at Current Facility by Cadre



Enrolled nurses, medical laboratory technicians and technologist, and public health officers and technicians all average (median) 15 or more years in their current profession, while the average (median) time in the current facility ranges from two to five years. These cadres appear to have some degree of mobility, especially the public health officers. Clinical officers reported an average (median) of seven years in their profession and only two years at their current facility, which could indicate that there is also degree of mobility among this cadre of health workers. Medical doctors have a relatively short reported duration in their current profession, such that it is difficult to infer anything about their potential mobility.

Existing competency gaps among health workers at select sites

Background

In order to assess how well the current training system is preparing health workers to deliver the KEPH, it is important to examine how well key services are currently being provided. In close consultation with the PNA SLG, including the MoH, Capacity Kenya developed a set of assessment tools to observe the following key service delivery areas:

- Family planning
- HIV counseling and testing
- Integrated management of childhood illness
- Malaria CM and laboratory diagnosis.

Capacity Kenya conducted 311 observations of client-health provider interactions in these areas. Health providers observed included medical doctors, clinical officers, registered nurses, enrolled nurses, and VCT counselors. The malaria CM tool posed key questions to respondents testing their knowledge of malaria CM rather than observing a client interaction. The questions covered areas of uncomplicated malaria, severe malaria, lab diagnosis, and pharmacy related questions, among others. (Note: due to missing data, the results of the laboratory diagnosis are not presented.)

The results are presented at the level of client observation; some providers were observed to provide services to more than one client. Prior to launching the assessment, the data collection team had planned not to collect multiple observations per provider; however, due to the difficulties in collecting this data, as noted above, it was difficult to obtain multiple observations by provider. As a result, this analysis does not attempt to aggregate multiple observations by the same provider. Consequently, these results should be interpreted as the percentage of clients receiving a level of service rather than the percentage of providers achieving a level of service.

Each service delivery area was observed for numerous components that comprise quality service delivery. The threshold level for the delivery of quality services within a service delivery area was set at 75% by the PNA Stakeholder TWG, which includes representation from the MoH and is validated by specific divisions in the Ministries of Health. Individual actions within a service delivery area were weighted, as determined by this group, and the threshold of 75% reflects the weighting scheme. In a few instances, nearly all actions within a service delivery area were weighted as "very important;" consequently, there was no practical difference between the weighted and un-weighted scores.

Study limitations

In addition to those limitations noted above in the introduction to Phase I, there are additional and specific limitations associated with the observation of health providers and resulting analysis. First, as noted previously, the number of planned observations fell short of the actual,

and the limited number of observations makes analysis more difficult. Second, as noted above, missing data was an issue for the observation of laboratory diagnosis of malaria, and as a result, results are not presented for the laboratory technicians and technologists. Third, the 75% threshold may not be the best benchmark for determining whether services were successfully provided to a client. Future research may wish to identify key activities that constitute effective service provision and an appropriate threshold of performance. Fourth, health providers were asked if they had ever received training in the area in which they were being observed to provide services but were not offered a definition of "training." Thus, in seeking to compare "trained" versus "not trained" health workers against performance, there is no standard definition of training. Fifth, observations do not identify what knowledge providers have about delivering care, only what they are doing when they were observed. Thus, if a provider does not perform a particular action, we cannot discern whether it is because of a gap in knowledge or because they choose not to do so (e.g., due to time constraints or because the provider has deemed the action not necessary for that particular client). Self-reported behavior and "knowledge" questions can identify potential performance, but this may not accurately reflect actual practice.

Lastly, and in part due to the constraints noted above, ordinary least squares (OLS) regression analysis was used to examine the role of training while controlling for cadre, level, and ownership of the facility. The dependent variable was the percentage of correct actions observed, or questions answered in the case of malaria CM. In order for OLS to yield unbiased parameter estimates, several assumptions must hold. Principally among these assumptions, explanatory variables must not be correlated with omitted relevant variables, often referred to as "confounders." For example, if only the most skilled health workers were sent for training, the effects of training could be overstated due to the unobserved effects of "skill." Based on the results observed, this would appear unlikely, though other confounders unknown to the stakeholder TWG cannot be ruled out. All regression analysis was computed using Stata version 5, and standard errors robust to heteroscedasticity were calculated using the "robust" command.

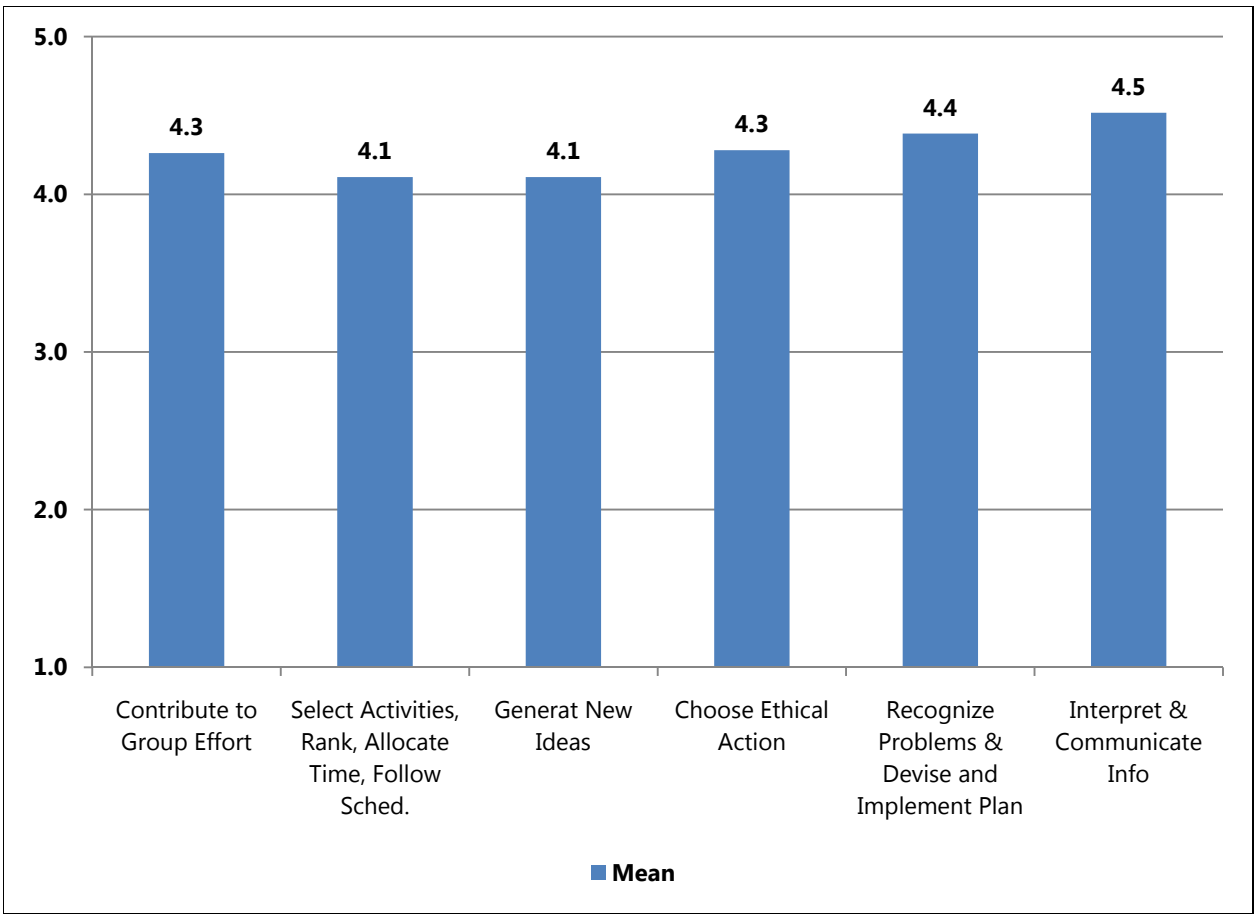
Results

Self-reported overarching competencies. Health workers need both general competencies as well as specific technical competencies in order to provide quality services and successfully deliver the KEPH. The PNA Stakeholder TWG identified six overarching competencies that were deemed essential to service delivery. Ability to:

- Contribute to group effort
- Select activities, rank them, allocate time, and follow schedules
- Generate new ideas
- Choose ethical causes of action
- Recognize problems and devise and implement a plan of action
- Interpret and communicate information.

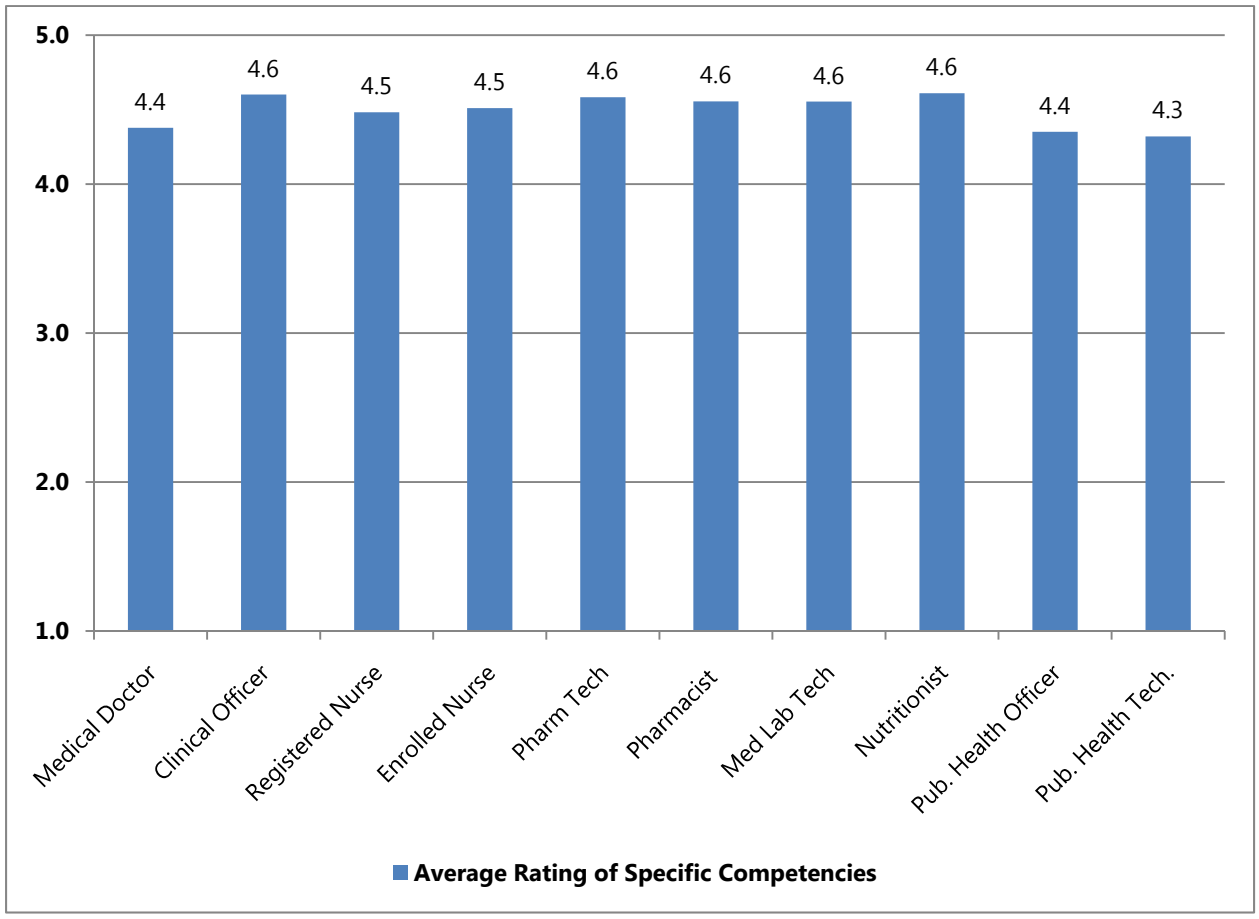
Health workers were asked a series of questions that pertain to overarching competencies. Respondents were then asked to rate their ability to demonstrate the stated competency on a five point scale, with one being the lowest and five being the highest. Overall, most respondents rated highly their ability to demonstrate these overarching competencies. Moreover, there were not substantial variations in responses by cadre. Consequently, the overall average for all health workers surveyed is reported in Figure 7. (Responses disaggregated by cadre are available upon request.)

Figure 7. Average (Mean) Self-Assessed Overarching Competencies, All Respondents



Cadre-specific self-reported competencies. Respondents were also surveyed regarding technical competencies specific to their cadre. Each cadre was asked to rate their perceived ability to perform a series of specific tasks or responsibilities. As with the overarching competencies, health workers' perceptions of their abilities in specific competency areas related to their cadre were high, with an average rating across the technical competencies ranging from 4.3 to 4.6 on a five point scale. Figure 8 below shows the mean score, averaging across all the technical competencies that were self assessed by each cadre. Note: due to the consistently high self assessment and limited variation in results, data are not reported here by specific technical competencies per cadre although these data are available upon request.

Figure 8. Average (Mean) Self-Assessed Technical Competencies by Cadre



In summary, health workers perceive they have both the overarching and technical competencies necessary to perform in their functions and to deliver the KEPH.

Observed competency—family planning. Observations of FP services were divided among new and returning clients, with the majority of clients, 76%, seeking follow up services. The checklist used to observe service delivery included areas such as assessment of the needs of the client, options available to the client, understanding side effects, choosing the right option, and implementing the choice. The checklist did vary for new versus returning clients, although many of the essential functions were the same or similar.

In the sample of clients observed, FP was performed almost entirely by registered and enrolled nurses, hence medical doctors and clinical officers are excluded from this analysis. Overall, very few registered and enrolled nurses provided FP services at the 75% threshold level. Registered nurses performed, on average, slightly better than their enrolled counterparts. However, the opposite was the case for returning clients, in which enrolled nurses performed, on average, slightly better than registered nurses. Median scores of the observed activities completed according to the checklist ranged from 49% to 61% by registered nurses for new and returning clients, and 55% by enrolled nurses for both types of clients.

Service delivery by level of facility was mixed. In comparing average (mean and median) scores, the level three and five facilities studied performed somewhat better than levels two and four. However, there was no clear trend by level of facility in terms of performance. (See Table 12 below for more detailed information.)

Table 12. Percentage Scores for Client Observations of Family Planning by Cadre and Level of Facility

Factor (1):	Mean Score	Median Score	% of Clients (2)		n
			Below 75%	75% & Above	
Cadre					
Registered Nurse					
New Client	60%	61%	75%	25%	4
Returning Client	51%	49%	89%	11%	9
Enrolled Nurse					
New Client	50%	55%	100%	0%	8
Returning Client	55%	55%	90%	10%	29
Level of Facility					
Level 2					
New Client	55%	55%	100%	0%	1
Returning Client	41%	36%	83%	17%	6
Level 3					
New Client	54%	61%	100%	0%	3
Returning Client	60%	62%	100%	0%	10
Level 4					
New Client	50%	55%	80%	20%	5
Returning Client	49%	49%	88%	12%	17
Level 5					
New Client	58%	55%	100%	0%	4
Returning Client	62%	67%	78%	22%	9

Notes:

1. All scores are weighted according to importance.

2. Scores for "Below 75%" or "75% & Above" represent the number of clients receiving the threshold for services.

Key observations of interest

Examining specific services within FP can highlight certain areas in which health workers are performing well, and those areas in which they can improve service delivery. Table 13 highlights selected service delivery aspects for both new and returning clients. New clients received many of the services, although certain information is not routinely provided, such as male and female sterilization. (Note that the sample size for new clients is small, n = 14.) The data seem to reflect that providers are offering information more consistently about methods that are readily

available, such as hormonal pills and injectables, and less frequently about methods that may not be available, for example male sterilization which is not available from health clinics.

Table 13. Select Family Planning Services Provided to New and Returning Clients

Family Planning Service	% of Clients Observed Receiving Service
New Client (n=14)	
Discussed client's personal situation	79%
Assessed client understanding of FP (benefits, barriers, eligibility criteria)	57%
Verified client's medical history	71%
Provided sufficient, accurate info on:	
Condoms	71%
Hormonal pill	86%
Intrauterine contraceptive device	86%
Injectibles	93%
Implants	71%
Female sterilization	21%
Male sterilization	14%
Lactational amenorrhea	29%
Weigh pros and cons of continuing versus switching FP methods	43%
Explore client's reason for choice	64%
Provider demonstrates respect and support for client's choice	93%
Teach how to use method	79%
Give directions for check-ups or resupply	71%
Instruct how to respond to problems	50%
Reminded client about dual protection of STI and HIV	36%
Schedule future visits or further counseling	57%
Returning Client (n=40)	
Reviewed the client's experience with FP method	88%
Assessed client's satisfaction with FP method	83%
Reviewed client's changes in FP goals	60%
Checked to see if client is using FP method correctly	60%
Reminded client about side effects of current FP method	53%
Discussed client's ability to tolerate side effects of current FP method	43%
Discussed convenience/inconvenience of current FP method	48%
Asked if client was interested in alternative FP methods and provided info	55%
Reminded client about side effects of alternative FP methods	28%
Weigh pros and cons of continuing versus switching FP methods	55%
Explore client's reason for choice	53%
Provider demonstrates respect and support for client's choice	83%
Reinforce instructions about method use	63%
Reminded client about dual protection of STI and HIV	30%
Schedule future visits or further counseling	70%

Service provision for returning FP clients indicates that health workers are routinely assessing the client's experience and satisfaction with their current method. However, there are several key components that are not provided as frequently. To some extent, these components relate, at least in part, to assessing whether or not the client should change the method currently used.

For example, half (50%) of the returning clients were asked if their goals had changed, and only 48% were asked about the convenience or inconvenience of the current method used.

Impact of training

In this sample of health workers observed providing FP/RH services, training was not correlated with improved service delivery. Multivariate analysis (OLS regression), controlling for cadre, ownership, and level of the facility did not find a statistically significant association between training for registered and enrolled nurses and improved service delivery (see Appendix H for detailed results of the multivariate analysis). It should also be noted that there was little reported training in FP by the nurses who were observed providing services.

Observed competency—HIV counseling and testing. Observations of HCT services were divided into pre-test counseling and post-test counseling. The checklist further varied for post-test counseling according to the result of the HIV test. The checklist used to observe service delivery included areas such as privacy, assessing the clients knowledge, addressing risk reduction, obtaining consent for the test, explaining how the test worked, referring HIV-positive clients for services, encouraging disclosure to partners and counseling them in positive living, and for negative clients developing risk reduction plans, among others.

In the sample of clients observed, HCT was performed almost entirely by registered nurses, enrolled nurses or VCT counselors, hence medical doctors and clinical officers are excluded from this analysis. Results are presented for both pre- and post-test counseling. (Note: due to time and other constraints, it was not possible to observe both pre-and post-test counseling for all observations. Hence, for the purpose of this analysis, these two aspects of service provision are treated separately.)

HIV pre-test counseling

Registered nurses and VCT counselors did very well in providing HIV pre-test counseling to the 75% threshold, and the median score for VCT counselors was 95%. Enrolled nurses did not perform as well in this area, with only 36% of the clients they served receiving 75% or more of the required services. Levels four and five performed better, on average, than levels two and three, and clients at these facilities were more likely to receive the 75% threshold of service delivery (see table 12 below.)

HIV post-test counseling

For post-test counseling both registered and enrolled nurses did very well in providing counseling to the 75% threshold, with registered nurses meeting the threshold level of service delivery with 89% of their clients. The median score for both groups of nurses was 88% of the observed activities completed. VCT counselors did not perform as well as they did for pre-test counseling; however, 65% of clients still received the threshold level of service delivery, and the median score was 81% of the observed activities completed.

Level two, four, and five health facilities all performed relatively well, with levels four and five meeting the threshold level with three-quarters of the clients served. Median scores at these

facilities ranged from 88% to 100% of the observed activities completed. (See Table 14 below for more detailed information.)

Table 14. Percentage Scores for Client Observations of HCT by Cadre and Level of Facility

Factor (1):	Mean Score	Median Score	% of Clients (2)		n
			Below 75%	75% & Above	
Cadre					
Registered Nurse					
Pre-Test	81%	82%	19%	81%	21
Post-Test	83%	88%	11%	89%	18
Enrolled Nurse					
Pre-Test	69%	73%	64%	36%	14
Post-Test	81%	88%	27%	73%	11
VCT Counselor (3)					
Pre-Test	93%	95%	15%	85%	20
Post-Test	76%	81%	35%	65%	20
Level of Facility					
Level 2					
Pre-Test	87%	100%	40%	60%	5
Post-Test	95%	100%	0%	100%	5
Level 3					
Pre-Test	70%	82%	44%	56%	18
Post-Test	75%	75%	35%	65%	17
Level 4					
Pre-Test	84%	91%	21%	79%	24
Post-Test	78%	88%	23%	77%	22
Level 5					
Pre-Test	93%	100%	18%	82%	11
Post-Test	84%	88%	25%	75%	8

Notes:

1. All scores are weighted according to importance.
2. Scores for "Below 75%" or "75% & Above" represent the number of clients receiving the threshold for services.
3. VCT counselors include both paid and volunteer.

Key observations of interest

Examining specific areas of interest indicate certain areas in which health workers are doing well, and those areas in which they can improve service delivery in HCT. Table 15 below highlights selected service delivery aspects for both pre- and post-test clients. Overall, clients receiving pre-test services were routinely provided with many of the key services, such as ensuring privacy and confidentiality, assessing the clients' knowledge of HIV understanding of the test results, and explaining how the test is administered. Only 48% of pre-test clients received a discussion

on referral and support systems, although it may be that some counselors are waiting to provide this information in the post-test session. Of some concern is the result that only 88% were observed to obtain the client's consent for the HIV test. However, one possible explanation is that the observer may not have perceived "consent" in the same manner as the counselor; this may be one area for further investigation.

Table 15. Select HIV Counseling and Testing Services Provided to New and Returning Clients

HIV Counseling and Testing Service[11]	% of Clients Observed Receiving Service
Pre-Test Clients (n=60)	
Ensured privacy	83%
Provided information on the benefits of being tested	72%
Expressed confidentiality to the client	78%
Established what prompted the visit	80%
Assessed the client's knowledge	75%
Assessed the client's understanding of the test results	73%
Explored the personal implications for the client	78%
Asked about the client's sexual history	53%
Provided information on risk reduction	80%
Explained how the test is administered	92%
Identified referral and support systems for the client	47%
Obtained client's consent for the test	88%
Post-Test Clients (n=62)	
Assessed client readiness	93%
Assessed client understanding of results	92%
Created a risk reduction plan	83%
Encouraged partner notification of results	68%
Discussed family planning	27%
Provided information on healthy/positive living (HIV+)	63%
Provided information on referral and support systems (HIV+)	63%
Provided information on window period and need for re-test (HIV-)	77%

Post-test clients also routinely received many of the services, including an assessment of their readiness to receive the results and their understanding of the results. In addition, 92% of clients created a risk reduction plan. For those testing HIV-positive, 63% of clients provided with information on healthy (positive) living and referral and support systems[12].

One missed opportunity appears to be the lack of discussion on FP, which was mentioned to only 27% of all post test clients, including 25% of those testing HIV-positive. For the latter group, it may be too soon to begin having a conversation about FP, but the counselors could raise the issue with all those testing HIV-negative and refer them appropriately, as needed.

[11]Note: some responses are filtered out due to missing responses, and the original sample for pre-test clients is not greater than that for post-test clients.

[12]Note: the sample size for HIV+ clients is small, n = 8, so these results must be interpreted with caution.

Impact of training

In this sample of health workers, nearly all staff reported some form of training in HCT, thus no separate analysis on the affects of training on provider performance was conducted.

Observed competency—integrated management of childhood illness. All three cadres, medical doctors, clinical officers, and nurses, were observed providing IMCI services. The checklist used to observe service delivery included areas such as assessment of the child, classifying treatment, observing therapy, and counseling the caregiver, including scheduling return visits.

Very few health workers were able to provide IMCI services at the 75% threshold. Two of the nine clients of registered nurses and one of 47 clients of clinical officers received this standard. The median score ranged from 31% (enrolled nurses) to 55% (medical doctors) of the observed activities completed.

The level of facility does not suggest any particular pattern in the provision IMCI services, though the two clients of registered nurses who did receive the threshold level were at level two facilities. Median scores at these facilities ranged from 42% to 53% of the observed activities completed. (See Table 16 below for more detailed information.)

Table 16. Percentage Scores for Client Observations of Integrated Management of Childhood Illness by Cadre and Level of Facility

Factor (1):	Mean Score	Median Score	% of Clients (2)		n
			Below 75%	75% & Above	
Cadre					
Medical Doctor	53%	55%	100%	0%	4
Clinical Officer	49%	49%	98%	2%	47
Registered Nurse	52%	46%	78%	22%	9
Enrolled Nurse	35%	31%	100%	0%	13
Level of Facility					
Level 2	47%	42%	88%	13%	16
Level 3	47%	49%	100%	0%	25
Level 4	0%	46%	96%	4%	23
Level 5	0%	53%	100%	0%	14

Notes:

1. All scores are weighted according to importance.
2. Scores for "Below 75%" or "75% & Above" represent the number of clients receiving the threshold for services.

Key observations of interest

Specific components within IMCI service delivery are presented in Table 15. Results are mixed, with some components being provided to most of the clients, while other aspects were not

routinely administered. For example, nearly three-quarters (74%) of children's caregivers were asked about diarrhea, while only one-third (34%) were asked whether there was blood in the stool. In this sample, 72% of clients were checked for breathing difficulty and 84% were asked about a cough and checked for fever, yet only 29% of clients were checked for wasting. Observations indicated that 91% of clients were identified the appropriate treatment; however, the provider only administered the first dose in 26% of the cases.

Table 15. Select IMCI Services Provided to Clients

Integrated Management of Childhood Illness Service (n = 79)	% of Clients Observed Receiving Service
Child Assessment	
Ask caregiver for history of sick child	91%
Record child's weight into mother's/ patient records card	61%
Check child for 2-3 general danger signs? (not able to drink or breast feed, convulsions, severe lethargy, vomiting everything, unconscious)?	58%
Ask for cough?	84%
Check for difficulty breathing (record respiratory rate using timer; check for chest in-drawing)?	72%
Ask for diarrhea?	74%
Ask about blood in the stool?	34%
Check for skin pinch test, sunken eyes, child very thirsty?	37%
Check for fever (measure temperature with thermometer; check for stiff-neck; irritability)?	77%
Check for anemia (check for palmar pallor/tongue/conjunctiva)?	58%
Check for ear problem (check for discharge (pus); swelling behind the ears)?	23%
Check for measles (fever, generalized rash, conjunctivitis - red eyes)?	35%
Checking the child's weight?(weigh child and record weight)	61%
Asking about the feeding (breastfeeding, supplementary feeding)?	65%
Checking for wasting?	29%
Checking for oedema (swelling) of both feet	19%
Immunization status? (review record or ask care giver – ask for child welfare card)	47%
Classification and Identification of Treatment	
Classify the child's illness	90%
Identify appropriate treatment (drug or other) for the child?	91%
Did the health provider administer the first dosage of treatment to the sick child?	26%
Caregiver Counseling	
How to administer drug to child? (provide clear instructions on how to adhere to treatment at home) – dosage, frequency (time intervals in administration) and Duration of Treatment)	58%
What signs to look for to bring child back to hospital (not able to drink or breastfeed, fast breathing, developed fever, difficult breathing, blood in stool, vomits everything, convulsions)	50%
When to return for follow up	43%
Referrals (what to do, where to go) incase the child does not show improvement, develops fever	20%

Regarding the counseling of caregivers, this appears to be an area for improvement. About three-fifths (58%) counseled the caregiver on how to administer the treatment, half of the clients were given information on recognizing potential danger signs, 43% on when to return for follow

up. If this information is not being provided due to time constraints, then it may be possible to examine the feasibility of sharing or shifting this task to lower level cadres.

Impact of training

In this sample of health workers, training for registered nurses was statistically significantly associated with an increased percentage of IMCI services provided to clients ($p<.10$). On average, clients who were seen by registered nurses reporting "training" in IMCI, were observed to receive 34% more of the services listed on the checklist, *ceteris paribus*.

However, training for enrolled nurses was statistically significantly associated with a decreased percentage of IMCI services provided to clients ($p<.01$), though the magnitude of this effect was much smaller. On average, clients who were seen by enrolled nurses reporting "training" in IMCI, were observed to receive 13% fewer services listed on the checklist, *ceteris paribus*, than those who did not report being trained. As noted previously, "training" was not differentiated by duration. See Appendix H for detailed results of the multivariate analysis (OLS regression), controlling for cadre, ownership of the facility, and the level of the facility.

Surveyed competency—malaria case management. All three cadres, medical doctors, clinical officers, and nurses, were administered with a survey tool to assess their knowledge of malaria CM. The questionnaire assessed knowledge in several areas, including uncomplicated malaria, severe malaria, lab diagnosis, malaria in pregnancy, and pharmacy specific questions.

Table 17. Percentage Scores for Health Worker Knowledge of Malaria Case Management by Cadre and Level of Facility

Factor (1):	Mean Score	Median Score	% of Knowledge (2)		N
			Below 75%	75% & Above	
Cadre					
Medical Doctor	71%	69%	56%	44%	18
Clinical Officer	67%	69%	53%	47%	34
Registered Nurse	64%	69%	63%	38%	32
Enrolled Nurse	61%	63%	70%	30%	27
Level of Facility					
Level 2	60%	63%	71%	29%	21
Level 3	65%	69%	62%	38%	42
Level 4	70%	75%	48%	52%	33
Level 5	62%	69%	67%	33%	15

Notes:

1. All scores are weighted according to importance.
2. Scores for "Below 75%" or "75% & Above" represent the percentage of questions answered correctly.

Medical doctors, clinical officers, and registered nurses scored the same median response to the malaria CM survey, 69%, with enrolled nurses scoring slightly lower, 63%. Registered nurses

were somewhat less likely to meet the threshold (38%) as surveyed than their medical doctor and clinical officer counterparts, 44% and 47%, respectively. Enrolled Nurses did not perform as well relative to the other cadres, with 30% of surveyed respondents meeting the threshold of service provision.

Of the facilities studied, Level four did perform relatively better than the other levels, with 52% of the respondents surveyed meeting the 75% threshold of service provision. Likewise, the median score at level four facilities was somewhat higher than the other levels, 75%. (See Table 17 for more detailed information.)

Key observations of interest

Analysis of specific questions included in the knowledge assessment of malaria CM highlights both strengths and gaps in health worker knowledge (see Table 16). Where multiple answers were required, respondents did not score as well. For example, 59% of respondents were correctly able to report exactly how Artemeter-Lumefantrine should be administered for uncomplicated malaria. Similarly, only 43% of respondents correctly answered that calculating the appropriate dosage required information on weight and age. Respondents answering the laboratory and pharmacy specific questions did well overall.

Table 16. Select Knowledge of Malaria Case Management

Malaria Case Management Knowledge Assessment (n = 111)	**% of Providers Responding Correctly**
Uncomplicated Malaria	
How do you calculate appropriate dosage for uncomplicated malaria? (Answer = weight- and age-based)	43%
How would you administer AL dosage or give instructions on dosage for uncomplicated malaria? (Answer = DOT/1st dose at facility, 2nd dose after 8 hours, every 12 hours for 2 days, finished after 3 days)	60%
Able to identify 5 or more symptoms of uncomplicated malaria (fever, chills, joint pain, general malaise, muscle pain, nausea/vomiting, headache, profuse sweating)	62%
Severe Malaria	
What is the preferred drug of choice for severe malaria? (Answer = Parenteral Quinine)	96%
Intermittent Presumptive Treatment in Pregnancy (IPTp)	
What is the dosing schedule for IPTp? (Answer = DOT 4 doses during pregnancy 4 weeks apart)	56%
Laboratory Specific	
How is the severity of parasitaemia reported? (Answer = +/++/+++ or mild/moderate/heavy)	79%
Pharmacy Specific	
Where do you record consumption data of AL? (Answer = AL register)	57%
Where do you report an adverse drug reaction? (Answer = District Pharmacist or Pharmacy and Poisons Board)	37%

Impact of training

In this sample of health workers, self-reported training was statistically significantly associated with increased scores for both clinical officers ($p < .05$) and registered nurses ($p < .10$). Clinical officers self-reporting training in malaria CM scored approximately 11% higher, *ceteris paribus,*

than their counterparts who did not report any training. Registered nurses who self-reported training in malaria CM scored approximately 8% higher, *ceteris paribus*, than their counterparts who did not report any training.

Self-reported training for medical doctors, as compared to their counterparts who did not report any training, was not statistically significant at conventional levels ($p < .13$); however, the magnitude of "training" was similar to that for registered nurses, *ceteris paribus*. See Appendix H for detailed results of the multivariate analysis (OLS regression), controlling for cadre, ownership of the facility, and the level of the facility.

Surveyed competency—malaria laboratory diagnosis. A total of 58 medical laboratory technologists and technicians were observed. The questionnaire assessed how well the laboratory staff conducted the diagnosis of malaria. The observation tool was weighted according to importance of each action by the chief medical laboratory technologist in charge at the MoH. Unfortunately, data collectors did not fully complete these questionnaires, and it is not possible to determine if blanks on the forms were equivalent to "no," or if the data collector simply did not fill in the section. As a result, there is a significant amount of missing data, and scores cannot be computed accurately. Therefore, it is not possible determine the percentage of clients who were provided with the 75% service threshold. A copy of the weighted observation tool is available at www.CapacityKenya.org.

Summary. When health workers were asked about their overarching competencies, they rated themselves overall "competent" in these key areas. Furthermore, health workers self assessed their technical competencies highly in specific areas related to their job functions. Observations of service delivery in HCT indicated that the majority of clients received services at or above the 75% threshold of desired performance. However, observations of service delivery in FP and IMCI showed a much lower percentage of services being provided at the 75% threshold of desired performance.

The impact of training on observed health worker performance was mixed. First, the definition of "training" referred solely to the area, but was not restricted to a specified recall period, type of training (i.e., didactic, practicum), or minimum duration. Nearly all of the health workers providing HCT were trained, and overall, these health workers performed well. Training had mixed or no effects across other cadres with respect to PF and IMCI service delivery. Health workers learn in a variety of ways, of which formal training is just one means. Hence, the effects of formal training may not be robust statistically across different cadres in a relatively small sample of health workers.

In summary, health workers observed as part of this study were not performing to the desired level of performance in two of the three key areas in which performance was examined. However, most health workers perceived they possessed the overarching and specific technical competencies to perform their functions.

Perceived Factors That Impede Health Worker Performance

Background

In order to assess the intrinsic and other factors perceived by health workers to impede their performance, both quantitative and qualitative data were collected. Health workers were surveyed regarding clarity around job expectations, overarching competencies that enable them to perform their functions, specific competencies within cadres that enable them to deliver the KEPH, supervision and feedback, including the methods used, their frequency and quality, and their perceptions regarding performance outcomes. FGDs provided an opportunity for clinical officers and enrolled and registered nurses to discuss factors that either support or hinder performance, as well as opportunity chance to discuss the support provided to CHWs.

Eight hundred twelve health workers were surveyed[13]. Quantitative results are presented by cadre, while key findings from FGDs were collated and summarized following layered analysis, which involved a more iterative approach in establishing root causes for what was shared.

Study limitations

In addition to those limitations noted in the introduction to Phase I, it is important to note that the responses to the various questions presented here reflect respondents' perceptions of the situation, and not necessarily policy or actual practice. If errors in reporting by respondents are randomly distributed, parameter estimates will not be biased, although estimates will be less precise. However, if responses given by health workers are based in a particular direction due to certain heuristics, this could bias parameter estimates. For example, the availability and familiarity heuristics suggest that participants with a more recent supervisory visit may regard the overall frequency of these visits as greater than a respondent whose last visit occurred less recently, even though the actual frequency of their supervision may be the same. Likewise, experimental evidence shows that people attach more weight to negative outcomes than to positive ones. Thus, caution must be used when interpreting these results.

Results

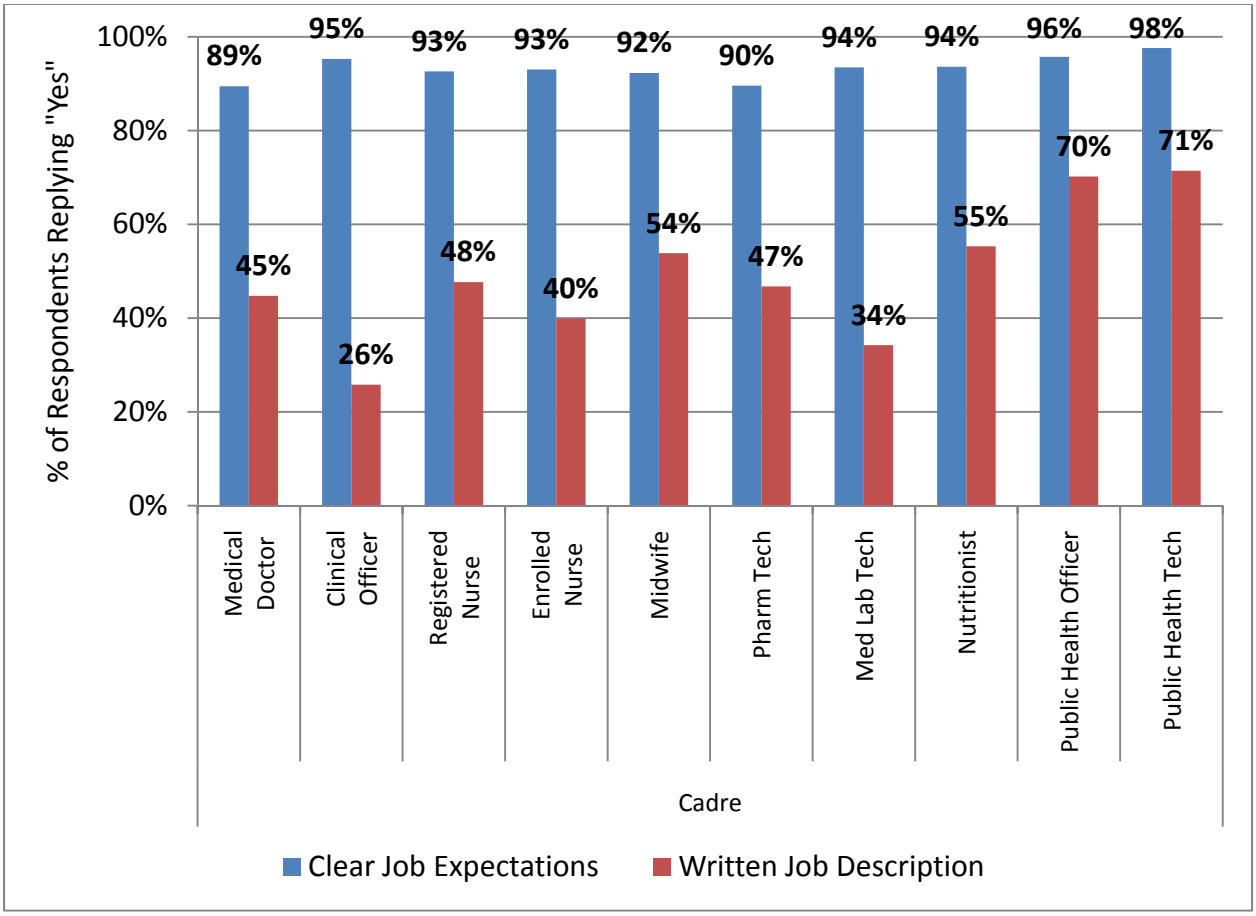
Job expectations. In order for health workers to perform, it is important for them to understand the expectations around their performance. Respondents were asked if they perceived their job expectations to be clear, and whether or not they had written job descriptions. Figure 9 demonstrates the percentage of respondents replying, "yes I have clear job expectations" and "yes, I have a written job description" by cadre.

Respondents in all the cadres felt they had clear job expectations; the percentage of respondents replying in the affirmative ranged from 89% to 98%. However, substantially fewer respondents report having a written job description. Clinical officers were the least likely to indicate they had a written job description, with only 26% answering affirmatively. Approximately 40% to 50% of respondents across most of the cadres, including medical doctors,

[13] Please note that Nutritionists and Public Health Officers and Technicians were surveyed as part of Phase IB.

registered and enrolled nurses, and pharmacists and pharmaceutical technologists, and nutritionists, reported having a written job description. Approximately 70% of public health officers and technicians reported having a written job description.

Figure 9. Clarity of Job Expectations and Written Job Description by Cadre



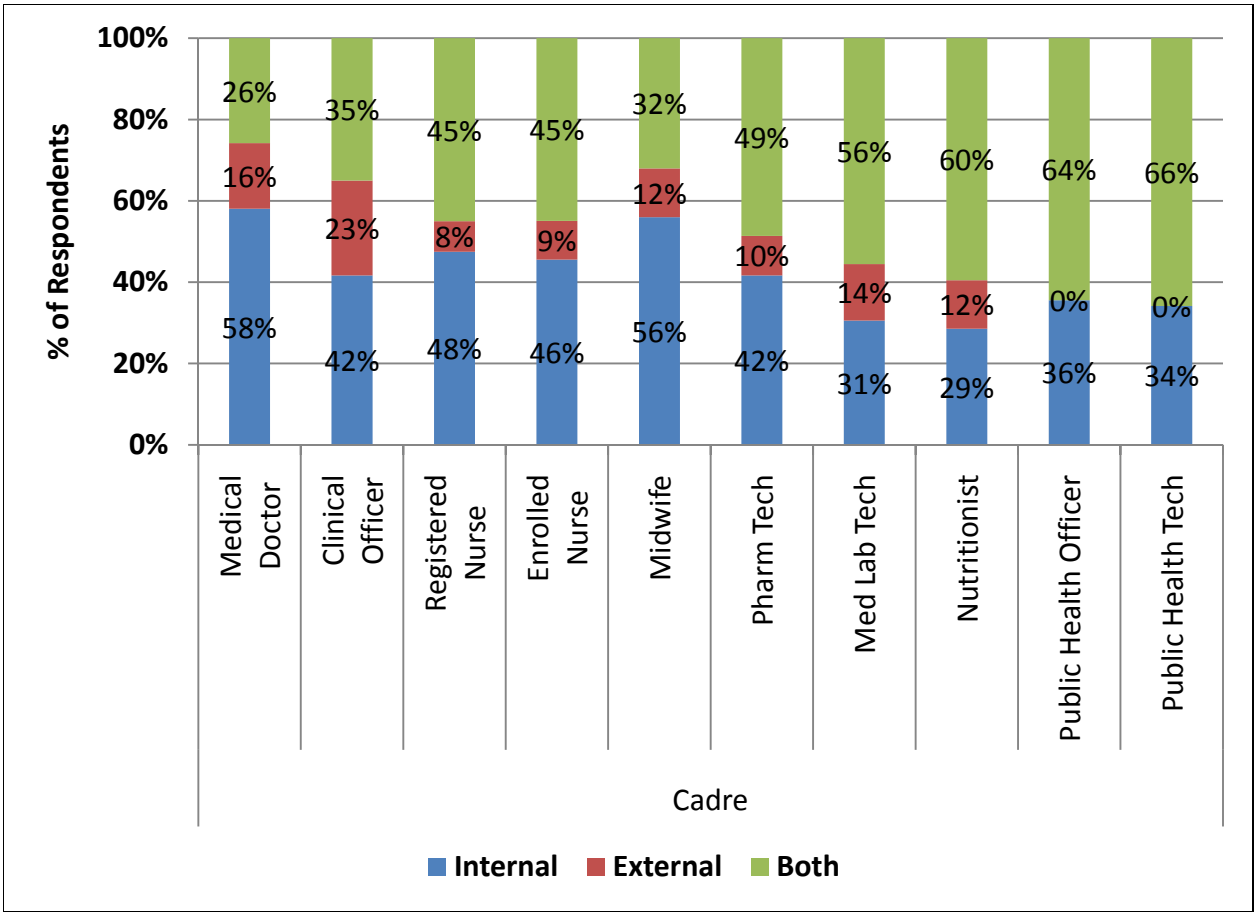
During FGD, some health workers reported that they were unclear on their roles, although they had a general understanding of what was expected of them. Shortage of staff was cited as one barrier that prevented health workers from adhering to their formal role. In general, health workers perceived there was less agreement between their expected role and the actual duties they performed.

The data presented here—both quantitative and qualitative—suggest a potentially important finding: if the actual expectations of health workers differed from their perceptions of what is expected of them, then s/he may be allocating time and other resources in a manner that is not aligned with the expectations of the supervisor or the Ministries of Health. Qualitative data illustrates that what is expected of the health worker, at least formally, does not reflect her/his actual duties. Further research may be useful to examine how closely the perceptions of health workers' job expectations match that of management and/or the Ministries of Health.

Supervision. Supervision is a critical component to improving health worker performance and ensuring the effective delivery of the KEPH. The MoH has supportive supervision tools developed to facilitate this process. The PNA examined supervision from the perspective of the health worker being supervised in order to better understand some of the factors that contribute to effective supervision.

First, health workers were asked what type(s) of supervision they receive: internal supervision, external supervision, or both. Figure 10 illustrates the type of supervision reported by health workers by cadre. Internal supervision (only) was also the most frequently reported form of supervision by medical doctors, clinical officers, registered nurses and midwives. Internal supervision accounted for one-third to one-half of supervision across the other cadres. External only supervision was the least frequently reported type of supervision, although 23% of clinical officers cited this as the type of supervision they receive. Receiving both internal and external supervision ranged from one-third to two-thirds for most cadres.

Figure 10. Type of Supervision by Cadre

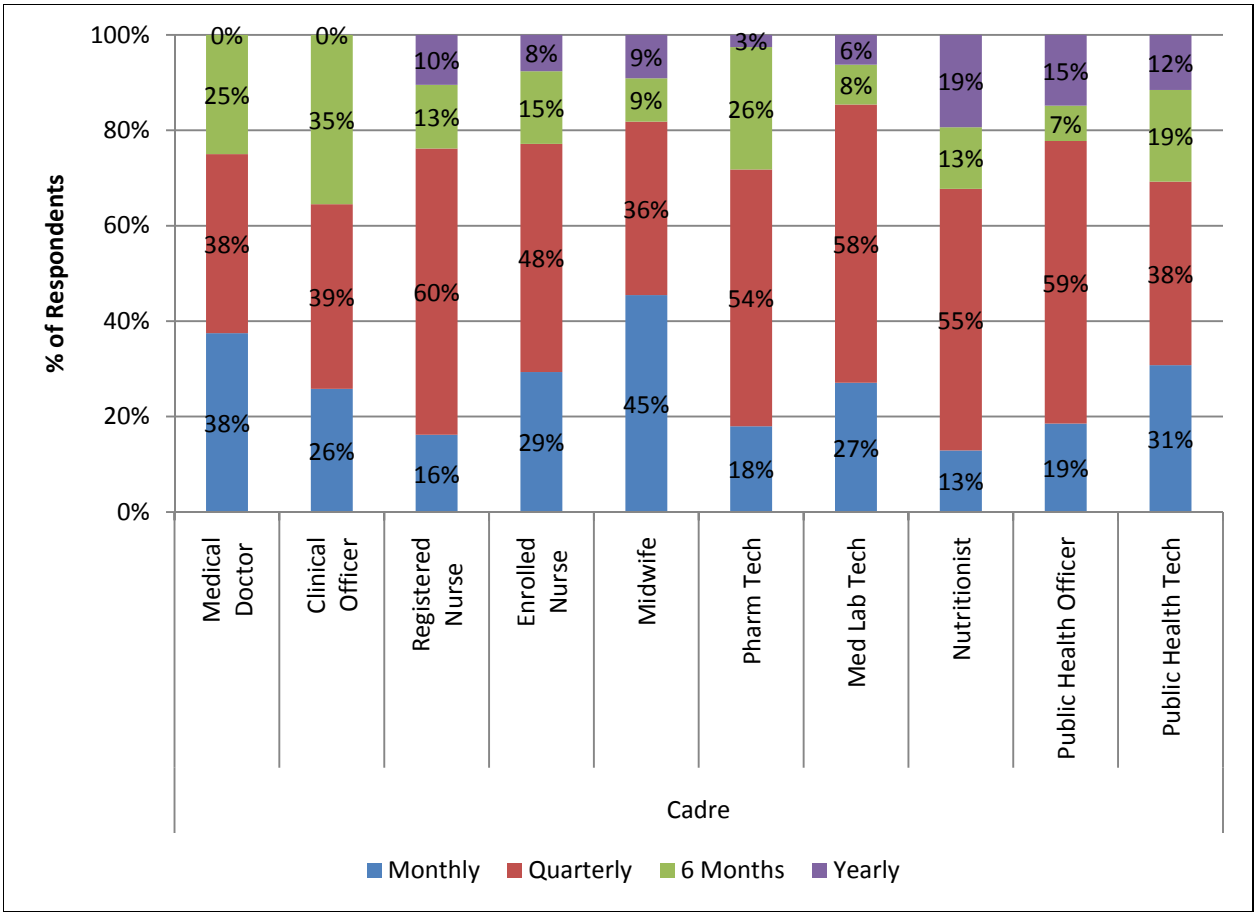


Health workers were asked about the frequency of external supervision. Quarterly supervision was the most frequently cited form of external supervision. Approximately one-quarter to one-third of health care workers in several of the cadres reported receiving monthly supervision.

Figure 11 illustrates the frequency of external supervision, as reported by respondents.

A substantial portion of respondents, ranging from 22% to 35%, reported receiving external supervision once every six to 12 months. This included health workers from the following cadres: medical doctors; clinical officers; registered and enrolled nurses; pharmacists and pharmaceutical technologists; nutritionists; public health officers; and, PHTs.

Figure 11. Frequency of External Supervision by Cadre



Health workers were asked several questions regarding the methods of supervision they receive. Specifically, health workers were asked if supervisors did the following:

- Observed the delivery of different services
- Inquired about service provision
- Examined records
- Made suggestions for improvement.

A majority of respondents in each cadre report supervisors observing their delivery of services. In addition, many health care workers report their supervisors inquiring about service provision, examining records, and making suggestions for improvement.

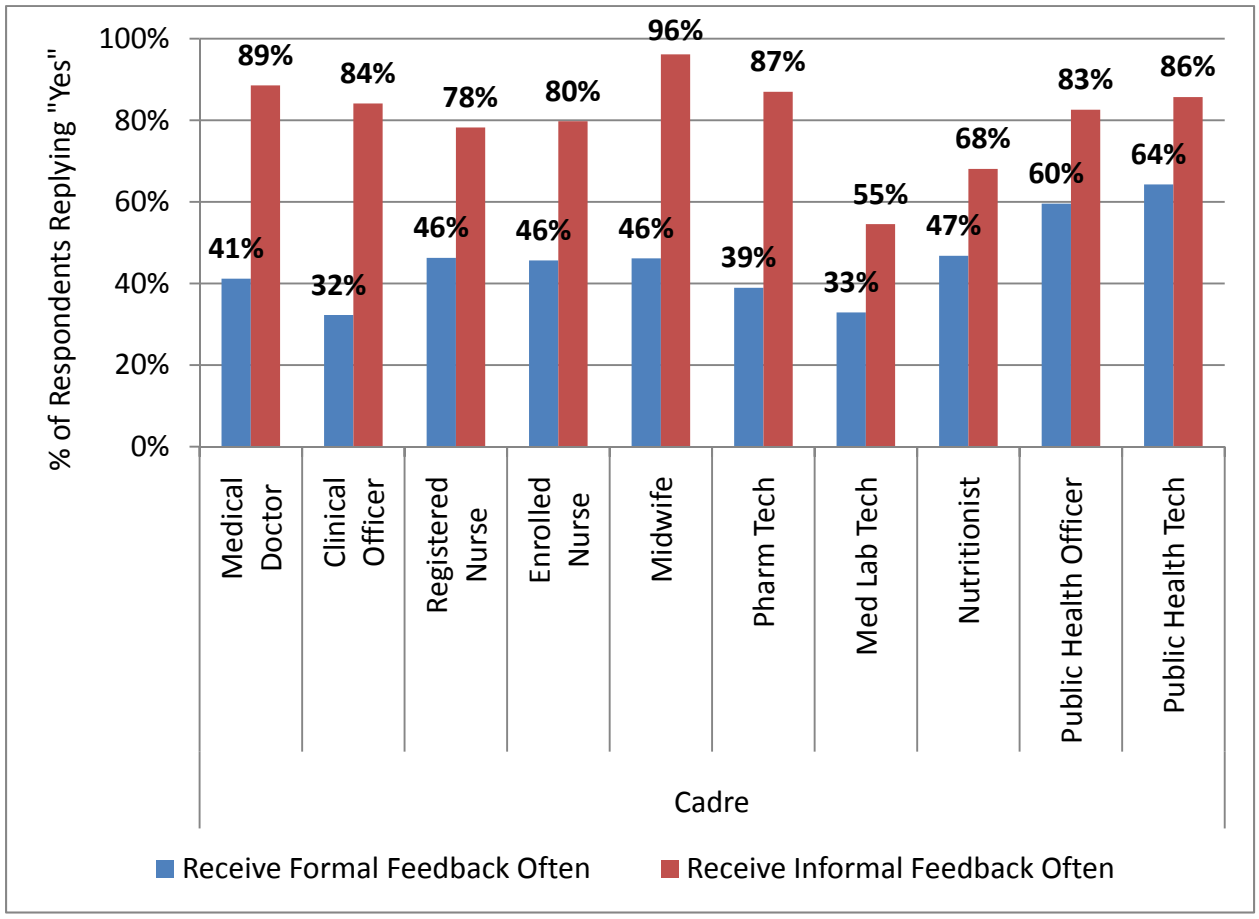
Table 18 reports the methods of supervision used as reported by health care workers.

Table 18. Methods of Supervision by Cadre

Method of Supervision		Cadre									
		Med. Doctor	CO	KRN/ KRCHN	KEN/ KECHN	Mid-wife	Pharm./ Tech	Med. Lab Tech	Nutrit-ionist	Public Health Officer	Public Health Tech
Observe Delivery of Different Services	Yes	87%	91%	88%	89%	81%	90%	93%	76%	87%	88%
	No	13%	9%	12%	11%	19%	10%	7%	24%	13%	12%
	n	31	56	207	157	26	72	69	46	1	42
Inquire about Service Provision	Yes	94%	98%	95%	93%	96%	99%	96%	89%	94%	98%
	No	6%	2%	5%	7%	4%	1%	4%	11%	6%	2%
	n	32	59	206	159	26	72	71	46	47	42
Examine Records	Yes	93%	88%	92%	91%	96%	92%	96%	85%	89%	98%
	No	7%	12%	8%	9%	4%	8%	4%	15%	11%	2%
	n	30	58	206	160	26	72	70	46	47	42
Make Suggestions for Improv-ement	Yes	97%	100%	94%	93%	96%	96%	97%	87%	91%	98%
	No	3%	0%	6%	7%	4%	4%	3%	13%	9%	2%
	n	31	60	206	160	26	72	71	46	47	42

Feedback. In addition to supervision, feedback is essential in helping health workers improve performance. Health workers were asked whether or not they received feedback often, differentiating between formal and informal feedback. The health workers participating in this survey are receiving some form of feedback with relative frequency. Respondents reported receiving informal feedback much more frequently than formal feedback. For example, approximately 40% to 45% of several cadres reported receiving formal feedback often, whereas approximately 80% to 90% of these respondents reported receiving informal feedback often. Public health officers and PHTs in this sample were relatively more likely to report receiving formal feedback than the other cadres, 60% and 64%, respectively. Figure 12 illustrates the percentage of respondents reporting receiving formal feedback and informal feedback often.

Figure 12. Frequency of Formal and Informal Feedback by Cadre



Health workers were also surveyed regarding the type of feedback provided by their supervisor (see Table 19 below). Specifically, respondents were asked the following about the feedback process utilized by their supervisors:

- Received appraisal from her/his supervisor
- Method used to review performance—verbal, written, or both
- Offered praise for good work.

The majority of respondents, roughly three-quarters, reported receiving appraisals from their supervisors. Public health officers were most likely to report (94%) receiving appraisals from their supervisor. Approximately half of health workers surveyed reported receiving both verbal and written feedback. Nearly one-third of respondents reported receiving verbal only feedback from their supervisor. Finally, most respondents reported receiving praise for good work from their supervisors.

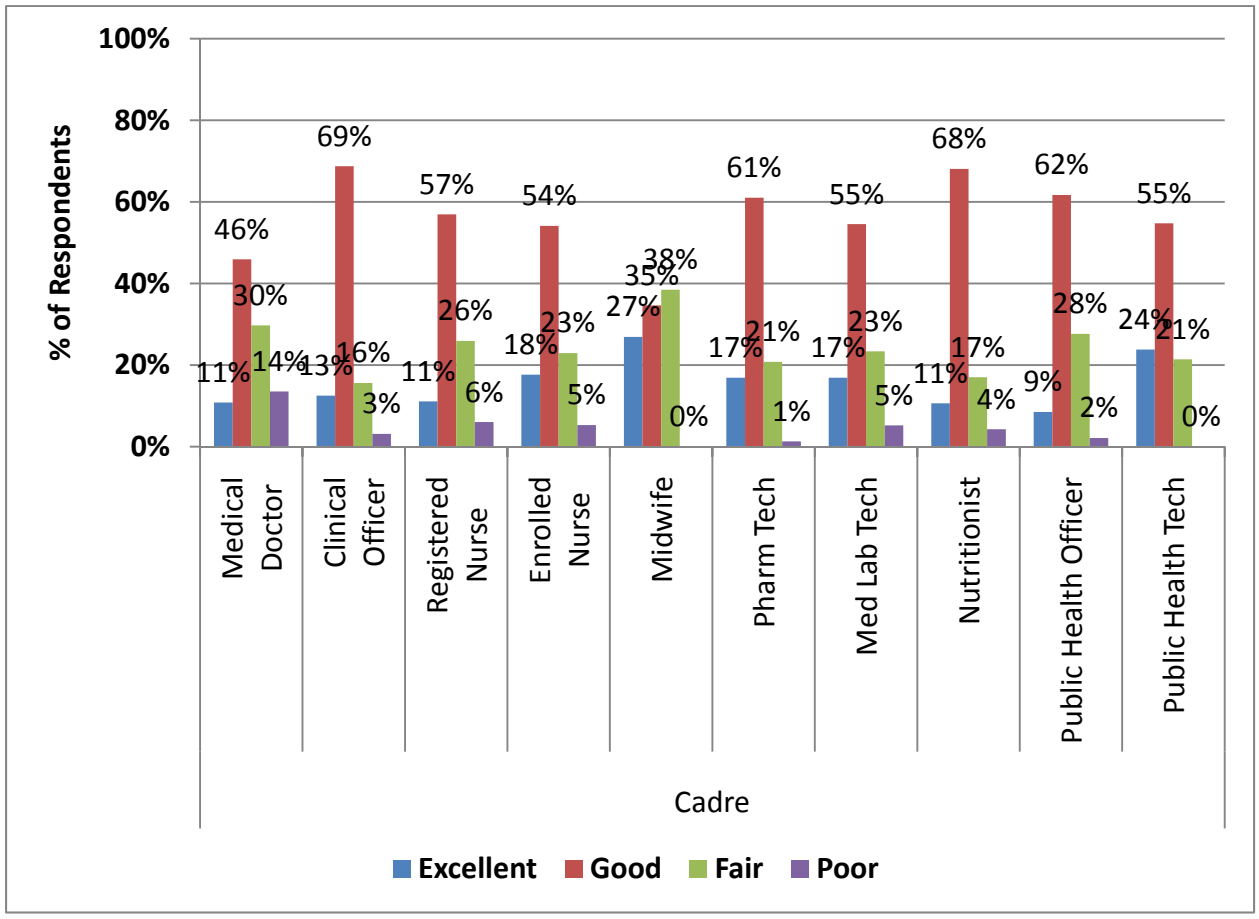
Table 19. Type of Feedback Provided by Supervisor by Cadre

Type of Feedback		Cadre									
		Med. Doctor	CO	KRN/ KRCHN	KEN/ KECHN	Mid-wife	Pharm./ Tech	Med. Lab Tech	Nutrit-ionist	Public Health Officer	Public Health Tech
Receive Appraisals from Supervisor	Yes	77%	78%	76%	78%	77%	82%	70%	66%	94%	79%
	No	23%	22%	24%	22%	23%	18%	30%	34%	6%	21%
	N	35	64	216	173	26	77	77	47	47	42
Method Used to Review Perform-ance	Verbal	36%	35%	29%	33%	27%	24%	41%	17%	15%	21%
	Written	18%	18%	16%	18%	19%	16%	21%	28%	34%	10%
	Both	45%	47%	53%	46%	54%	61%	38%	49%	49%	67%
	n	33	62	210	168	26	76	71	47	47	42
Offer Praise for Good Work	Yes	88%	81%	82%	78%	69%	87%	80%	80%	79%	90%
	No	13%	19%	18%	22%	31%	13%	20%	20%	21%	10%
	N	32	59	206	158	26	71	70	46	47	42

Perceived quality of supervision. Health workers were asked about their perceptions concerning the quality of supervision they received. Respondents were asked to rate the supervision as excellent, good, fair, or poor. Health workers participating in this survey most frequently reported the quality of supervision as "good" (see Figure 13below). Approximately one-quarter of midwives and PHTs reported their supervision as "excellent," relatively more than the other cadres; however, midwives were also the most likely to rate the quality of supervision as "fair."

Combining the two upper and two lower categories to be indicative of "satisfaction" and "dissatisfaction" with the quality of supervision, the majority of health workers from all the cadres report satisfaction with the quality of the supervision they receive. Nevertheless, at least 30% of respondents from the following cadres reported the quality of supervision received as either "fair" or "poor:" medical doctors; registered nurses; midwives; and, public health officers.

Figure 13. Quality of Supervision by Cadre

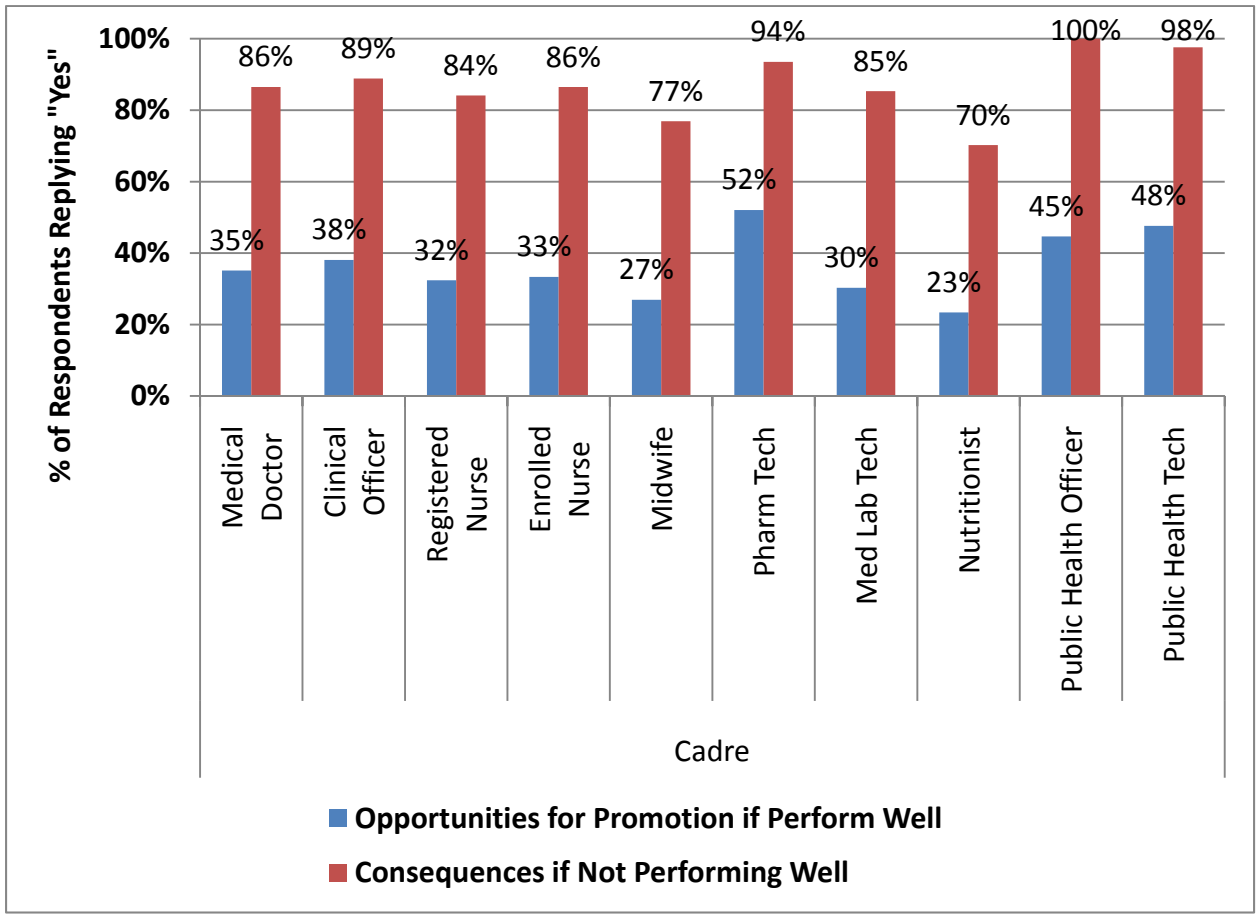


Outcomes of performance. Health workers were also asked questions related to their perceptions regarding the outcome of their performance. These questions help provide some insight to the factors that may serve to motivate health workers. Specifically, participants were asked if there were opportunities for promotion if they performed well, as well as whether or not there were consequences for poor performance.

A high percentage responded "yes" there were consequences of poor performance. Relatively fewer health workers responded "yes" there were opportunities for promotion if they performed well. The ratio between the two perceptions ranged from two to one or three to one negative to positive across the cadres (see Figure 14 below). This result is consistent with heuristics developed from experimental evidence[14] that shows that people assign more weight to negative outcomes than to positive ones.

[14] See, for example, Kahneman, D., Slovic, P., & Tversky, A. (1982). *Judgment Under Uncertainty: Heuristics and Biases*. New York: Cambridge University Press.

Figure 14. Opportunities for, and Consequences of, Performance on the Job by Cadre



Qualitative results. Participants in FGDs and KIIs, including clinical officers, registered nurses, pharmacists, and medical laboratory technologists cited several factors that affected performance. One of the main barriers discussed by health workers was "burn-out." Reasons include staffing shortages and lack of supervisory support, which has resulted in health workers taking on multiple roles or duties with many performing both administrative tasks and patient handling.

FGD participants also reported heavy workload and long working hours resulting from staff shortages. In order to cope with this, some indicated they used short-cuts, such as avoiding the use of certain recommended procedures that they perceived to be time consuming, and spent less time with patients.

Finally, health worker attitude was cited as another major reason for poor performance. In discussion, issues including inadequate remuneration, lack of recognition, bureaucracy, lack of supervisorial support, and lack of opportunities for professional growth were among the explanations for negative attitudes.

Summary. Health workers report receiving a variety of supervision techniques such as reviewing records, observing delivery, and inquiring about service provision. A high percentage of

participants reported receiving informal supervision often, and more frequently than formal, which is to be expected since health workers should be receiving frequent informal supervision, especially in larger facilities. Likewise, participants in this survey reported receiving informal feedback more frequently than formal feedback. Most health workers in the survey were being supervised either monthly or quarterly, although some participants were being supervised every six to 12 months, which may need to be increased.

The majority of health workers surveyed in the PNA felt they had clear job expectations; however, a much smaller percentage reported having a written job description. In addition, qualitative data suggested that health workers may be less clear about their roles, a situation that is compounded by staff shortages. Staff shortages were also identified as an important barrier to performance.

Health workers, when asked about their perceptions concerning the quality of supervision they received, most frequently reported the quality of supervision as "good," and reported receiving relatively frequent supervision and feedback. However, in FGDs one of the main barriers to performance cited by health workers was "burn-out" due to, among other factors, staffing shortages and lack of supervisory support that, in some instances, has resulted in health workers taking on multiple roles or duties. In order to cope, some health workers indicated they have used short-cuts, spent less time with patients, and avoided use of certain recommended procedures that they perceived to be time consuming. These seemingly contradictory findings highlight the need to better understand the supervision process and how it can be enhanced to provide effective support to health workers and help them overcome barriers to the delivery of quality care.

One question that arises from this analysis is whether or not health workers are discussing their concerns with their supervisors. Supervision is occurring, and health workers are receiving feedback; however, it is not clear if supervisors are advising health workers on how to deal effectively with staffing shortages and other challenges. For example, if staffing shortages are resulting in health workers taking short cuts in service provision, are supervisors able to discuss the situation with health workers and help ensure that these short cuts do not compromise quality or endanger patients?

Supervision is widely recognized as an important mechanism for improving service delivery and ensuring the quality of care received by Kenyans. Given the findings in this study, it may be necessary to carry out further research and analysis of the supervision mechanism to better understand the effectiveness of the supervision mechanism from both the perspective of the supervisor and the supervisee. This may also be an opportunity for regulatory bodies to support health workers and strengthen the supervision mechanism.

Support Provided by Regulatory Bodies

Background

In order to assess the perceived support provided by regulatory bodies to health workers, both quantitative and qualitative data were collected. Quantitative data focused primarily on registration with councils or professional bodies, and participation in CPD within the past year. FGDs provided targeted health workers with further opportunity to discuss perceived support by these institutions.

Health workers were surveyed regarding participation in CPD[15]. Quantitative results are presented at the level of the health worker, while key findings reported from FGD were collated and summarized following layered analysis, which involved a more iterative approach in establishing root causes for what was shared.

Study Limitations

In addition to those limitations noted in the introduction to Phase I, there are several limitations specific to this research question. First, as with any survey, respondents may be concerned about the consequences of responding "no" to the question regarding their registration with professional councils or bodies, despite assurances of confidentiality. Thus, there may be some upward bias in the reporting of this information. The second limitation in the data presented here pertains to the definition of CPD and therefore the ability of respondents to recall correctly and report attendance in CPD. Respondents were instructed that CPD could range in duration from three days to 12 months. Due to the lack of a standard definition for CPD, there is a wide array of training and other opportunities that meets this definition, and these opportunities are not necessarily comparable to one another. However, the recall period for respondents was limited to one year, which is expected to improve self-reporting of attendance in CPD.

Table 20. Registration with Regulatory Body by Cadre

Cadre	Yes	No	Sample Size
Medical Doctor	100%	0%	38
Clinical Officer	98%	2%	65
Registered Nurse	100%	0%	217
Enrolled Nurse	95%	5%	174
Midwife	92%	8%	26
Pharmacist/Tech	90%	10%	77
Med Lab Tech	83%	17%	76
Nutritionist[†]	85%	15%	47

[†]Note: Responses for Nutritionists also included 17% "don't know"; this response is excluded here and was unique to Phase IB participants.

[15]Please note that Public Health Officers and Technicians do not have a council or professional body with whom they may be registered.

Qualitative results

Respondents at lower level facilities, which are more likely to be rural, and regardless of ownership (GoK, FBO, and Private), reported no interaction with professional bodies. Health workers participating in FGD in Taita Taveta district indicated that the only support they received from professional bodies was with licensure. Health workers also reported that they perceived these fees to be high. Medical laboratory technologists and technicians at privately owned facilities appeared to be frustrated by the support provided to them. According to the respondents in the FGD, they stated that the requirements for registration were much higher than for their counterparts in public (GoK) facilities.

Attendance in continuing professional development

Councils and professional bodies play a critical role in setting the number of CPD hours required for licensure and overseeing the content of CPD and availing these opportunities to their members. Table 21 reports attendance at a CPD course within the past year by cadre. High rates of respondents in all cadres reported having attended CPD. Medical laboratory technologists and technicians were similarly relatively less likely than other cadres to report having attended a CPD within the past year.

Table 21. Attendance in CPD Course within Last Year by Cadre

Cadre	Yes	No	Sample Size
Medical Doctor	92%	8%	36
Clinical Officer	97%	3%	60
Registered Nurse	86%	14%	187
Enrolled Nurse	92%	8%	143
Midwife	96%	4%	25
Pharmacist/Tech	94%	6%	72
Med Lab Tech	87%	13%	69
Nutritionist	97%	3%	37
Public Health Officer	83%	17%	41
Public Health Tech	92%	8%	36

Table 22 reports the type of CPD attended, by cadre, for those attending CPD within the past year. According to the respondents surveyed, the most frequently attended CPD areas are in TB and HCT. Recognizing the heavy investment on HIV, TB, and malaria via the Global Fund, the US PEPFAR program, and the US President's Malaria Initiative, the relatively higher frequency of CPD attendance in these areas is expected. CPD attendance in reproductive health, FP, and IMCI over the past year was reported relatively less by the health workers surveyed. The high rates of attendance in CPD courses indicate that many health workers are receiving updates to their knowledge and skills; however, these learning opportunities may also disrupt services in certain areas where health workers do not have adequate coverage for their absence.

Table 22. Type of CPD Course Attended by Cadre

Cadre	HCT	RH	FP	IMCI	TB	Malaria	Other	Sample Size
Medical Doctor	68%	50%	26%	44%	41%	44%	35%	33
Clinical Officer	78%	24%	12%	36%	45%	62%	47%	58
Registered Nurse	73%	35%	31%	17%	27%	36%	47%	160
Enrolled Nurse	74%	32%	30%	15%	26%	50%	41%	132
Midwife	76%	44%	28%	21%	16%	36%	48%	24
Pharmacist/Tech	78%	13%	1%	15%	39%	57%	46%	68
Med Lab Tech	56%	3%	0%	0%	54%	42%	53%	60
Nutritionist	54%	5%	0%	0%	8%	8%	89%	36
Public Health Officer	17%	12%	5%	2%	20%	27%	73%	34
Public Health Tech	57%	20%	23%	0%	49%	60%	71%	33
TOTAL	**66%**	**26%**	**20%**	**16%**	**31%**	**43%**	**51%**	**653**

Table 23. Follow up Mentoring and Supportive Supervision to Last CPD by Cadre

Cadre	Yes	No	Sample Size
Medical Doctor	35%	65%	34
Clinical Officer	44%	56%	62
Registered Nurse	52%	48%	188
Enrolled Nurse	49%	51%	162
Midwife	48%	52%	25
Pharmacist/Tech	39%	61%	72
Med Lab Tech	46%	54%	68
Nutritionist	54%	46%	46
Public Health Officer	51%	49%	41
Public Health Tech	65%	35%	40
TOTAL	**49%**	**51%**	**754**

Respondents were asked whether their last CPD occurred within their health facility or at another location[16]. Twenty-two percent of respondents reported that their last CPD occurred within their current health facility. Medical doctors were most likely to report having participated in their last CPD within the facility, 29%. Respondents were then asked whether they had received follow up mentoring and supportive supervision following their last CPD. Approximately half of the respondents reported receiving this follow up, and half indicated they did not. However, responses varied by cadre; Table 23 disaggregates these responses.

[16]These data are not reported in a table.

Finally, health workers were asked whether they shared information regarding the training content from CPD with their peers and colleagues (data are not reported in a table). Ninety-six percent (96%) of respondents indicated that they did share this information with their peers. It is a very positive sign to see that information from CPD opportunities is shared widely with peers, although there may be some upward bias in the response to this question.

Qualitative results

Health workers participating in FGD reported several perceived barriers to accessing CPD. First, staff shortages make it difficult for health workers to take advantage of CPD opportunities when they do arise.

"If I'm alone, I either leave the patients unattended and [or not] go for the training altogether." –RCO

"The challenges I get is that I have someone who needs to go but no replacement for them so it becomes difficult to release them." –DPHN

As one respondent stated during an interview, without CPD health workers will not learn nor apply the latest recommended approaches in clinical CM:

"The ones we organize here….we might not have the right material at that particular time. In other words we would be using information I gathered two years ago...Otherwise there are other [CPDs] which are available for us but are difficult to come by. These are seminars [and] it is very hard for me to attend one. If I do, the hospital will be deemed to have no doctor." –Medical Officer

In addition, respondents noted that there is poor communication and lack of coordination between health facilities and regulatory bodies regarding CPD opportunities, which staff may receive information rather late, making it difficult to attend CPD. Some health workers complained of unfair selection criteria. Moreover, there seems to be a common consensus that there is a general lack of financial resources or sponsorship for supporting attendance of CPD courses. Finally, those who do attend CPD are not necessarily recognized or promoted, and CPD opportunities are not well-aligned with career progression.

Summary

Regulatory bodies are perceived by respondents in this survey to be offering some support to health workers. Reported registration with regulatory bodies was very high, although some regulatory bodies may seek ways to increase registration to 95% or greater, especially where required by law. Health workers from rural areas did not perceive there to be much support beyond licensure, and regulatory bodies may want to find additional ways to target and support their constituents operating in remote and hard to reach areas.

The extent that regulatory bodies are involved, or can increase their involvement, in CPD, provides an opportunity to increase support to their respective cadres. One area where

regulatory bodies may be able to support health workers is in helping to clarify and/or define criteria for selection in attending CPD. Regulatory bodies may also be able to assist their members in sourcing funding to attend CPD. Based on the difficulties noted by health workers in attending CPD, it may also be appropriate to explore how to better utilize on-the-job training and distance learning methods. In addition, health workers were concerned that CPD was not linked to professional development, and this may be an important area for further consideration.

Analysis of Community Health Workers: Performance of Community Health Cadres

CHWs were introduced globally in the early 1970s to act as an interface between the formal health system and the community[17]. CHWs act as agents of health promotion. In Kenya, the Ministry of Health considers the community as an important player to the success of its National Sector Strategic Plan II (NHSSP 2005-2010). The Ministry launched the community strategy in 2007 to roll out a plan for delivering KEPH at level one of the health system. The strategy outlines how households and communities play an important role in addressing priority health issues and health related problems affecting all life cycle cohorts at level one.

Central to the strategy are two groups: (1) the CHWs, based within the community and supporting 20 households each[18]; and, (2) the CHEW, who is based at the health facility, usually a nurse or PHT, and assigned a specific location to train, coach, and support CHWs. One of the key roles of a CHW is to continuously update the knowledge and skills of community members concerning health. Households and communities have important responsibilities in health promotion and disease prevention throughout the life cycle.

The study conducted structured interviews with a total of 29 CHWs from nine districts in six provinces. Most of the CHWs (69%) were aged 28-40 years, with the remaining 31% over 40 years of age. The majority of respondents were female (69%) and completed a secondary education. The following were the provinces and districts visited:

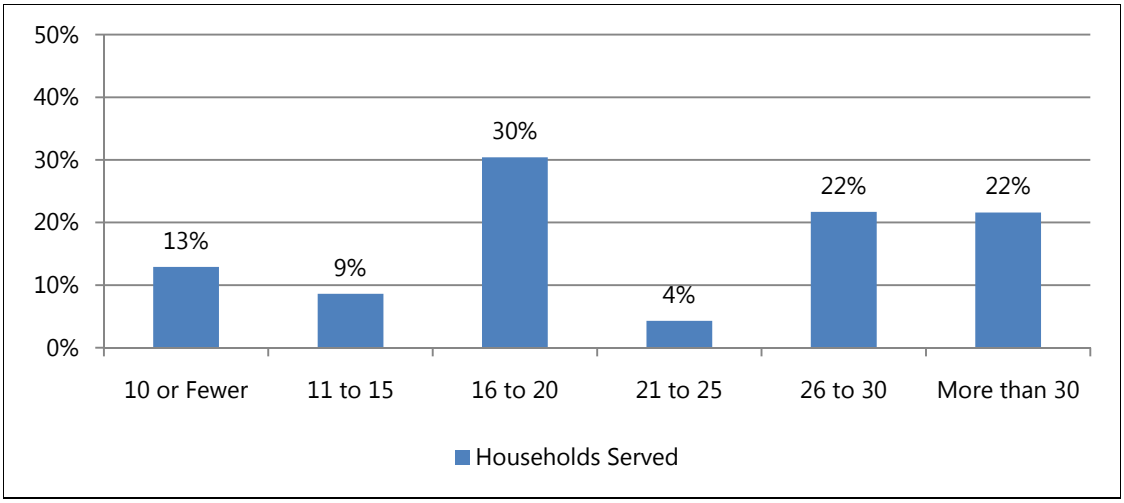
- Coast region- Tiwi district
- Central region- Nyeri, Tumutumu and Muranga districts
- Rift Valley region-Kericho and Tabaka districts
- North Eastern region-Garissa district
- Western region- Kakamega district
- Nairobi region-Juja in Nairobi district.

[17] World Health Organization (2007) Scaling up health workforce production: A concept towards the implementation of World Health Assembly resolution WHA59.23

[18] Reversing the Trends: The second National Health Sector Strategic Plan of Kenya (2005-2010): Taking the Kenya Essential Package for Health to the Community: A Strategy for the Delivery of LEVEL ONE SERVICES.

The study demonstrates that the majority of the CHWs (56%) reported serving 20 or fewer households as stipulated in the community strategy, while 44%reported serving 25 or more, households, as shown in Table 24 below.

Table 24. Households served by CHWs



Community health worker selection

The selection process for CHWs is very important to ensure the right person(s) are identified. During interviews, all (100%) CHWs reported that they were either selected or nominated; none reported that they volunteered to do the job. When asked who selected them, 64% of CHWs responding indicated that the community was involved with their selection. In FGD with community members they expressed the view that CHWs are selected primarily by the community, usually by elders and village chiefs.

Selection criteria are not well known by the CHWs participating in this study, and five of the nine community groups interviewed were unfamiliar with selection process and criteria. For those groups who were more familiar with the process, factors influencing CHW selection included literacy, fluency in English and Kiswahili, good community relations, a community member's influence, being readily available, and experience doing volunteer work.

One-quarter of the CHWs reported that factors related to gender influenced their selection. The CHWs interviewed perceived that women were selected/nominated because they are deemed by the community to be honest, responsible, trustworthy, and accessible to the community. For example, one female CHW reported, "[I] am able to talk boldly like a woman and be pleasing to my community. As a woman they thought I could be trusted because I am honest, if I am needed I can be accessed easily."

Men are perceived to keep useful information from the community when it is needed and as such could not be selected/nominated to perform the community health work. As one male in a

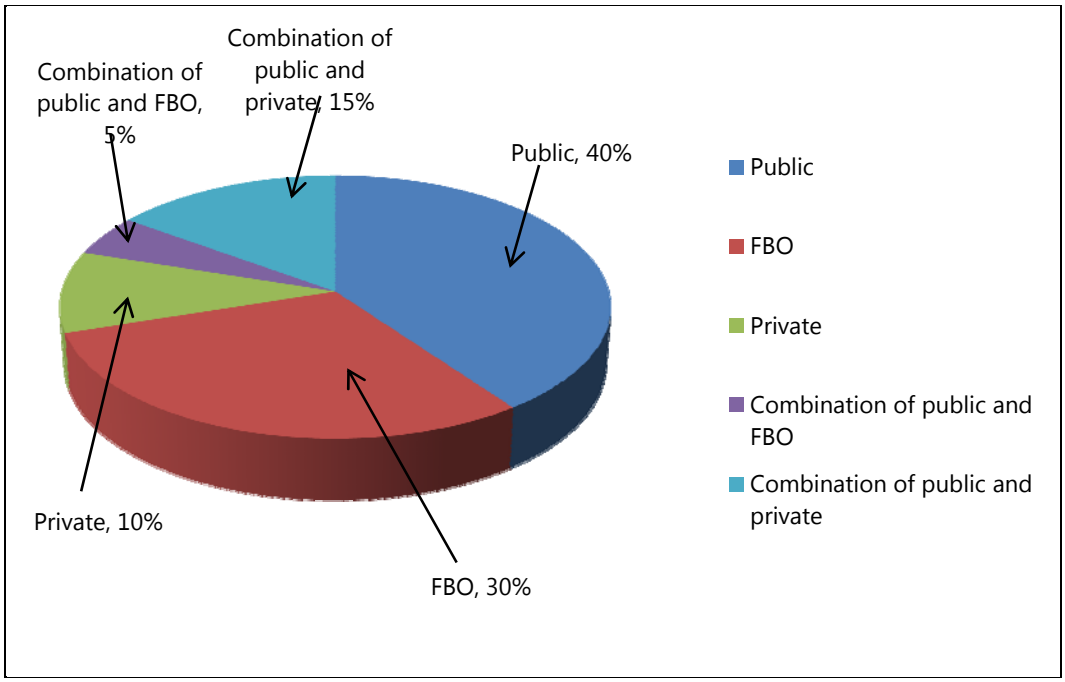
community FGD stated, "The women are flexible when they tell what is in the community. Men keep secrets."

Community health worker training

Once selected, training is very important for CHWs to promote health effectively within their communities. According to respondents, training varies in duration, with most CHWs (90%) reporting receiving one to three weeks initial training, and the training being conducted by a variety of different groups. CHWs commonly reported being taught topics including: malaria prevention and control, hygiene, HIV/AIDS prevention, home based care, and nutrition.

All community member groups interviewed in FGDs were aware that CHWs who are newly recruited undergo training as part of induction and orientation and length of training varied between locations. Facilitators of the training often included members of the public facility health management teams, such as District Health Management Teams. In some instances, trainings were conducted directly by NGOs and FBOs, such as AMREF, PCEA, and those affiliated with the APHIA II program. Figure 15 illustrates training by the organization responsible for training the CHW.

Figure 15. Types of Organizations that Trained CHWs



CHWs perceived training materials to be effective, and the majority of CHWs (96%) reported the training they received was relevant. On the other hand, some CHWs (14%) reported that the training they received did not adequately prepare them for the expected work, and 35% identified additional topics for training and in-depth training on previously taught topics.

Duties and responsibilities

CHWs reported that their main responsibilities to include health education and promotion, community mobilization and empowerment, follow-up and defaulter tracing (e.g., for TB and ART), referring clients for HIV counseling and testing (VCT), facility referrals (linkage of the facility and community), provision of medical drugs and condoms, and disease surveillance. However, CHWs reported that they are most frequently consulted for counseling, assistance in form of food or money, advice on a variety of health issues, provision of mosquito nets, medical drugs and condoms, as well as problem solving on domestic issues. Community members said that the most common responsibilities and specific services provided by CHWs were: hygiene and sanitation, HIV/AIDS awareness (VCT), malaria prevention using insecticide-treated mosquito nets and bush spraying, home based care (for PLWHAs, TB patients, and other sick persons), drug adherence, transportation to health facilities, referrals, and immunization.

Home visits

CHWs reported providing clients with health education, drugs, assistance ensuring patients take their drugs as prescribed, preventive services and health quality checks, counseling, and follow-up and referrals to clients during home visits. When asked what problems they encountered during home visits, CHWs identified clients' inadequate food supply and malnutrition, lack of drugs and mosquito nets, breakdown of hygienic conditions, especially due to poor waste and fecal disposal (most communities use pit latrines), and need for financial assistance as priority areas.

Commonly used tools

Slightly more than a half (52%) of the CHWs knew which tools they were required to have in order to do their work, including items such as home based care (HBC) kits, stationery, condoms, growth monitoring tools, and referral forms, among others. However, when asked if they were provided with these tools for working, nearly half of CHWs (48%) reported they did not receive the appropriate tools. One CHW summarized this by stating: "We were not given the necessary tools to perform our work."

Supportive supervision

CHWs had positive perceptions of the supportive supervision provided by their supervisors. Of the CHWs that reported receiving supervision, 67% said they were supervised every monthly and nearly the same number said they received informal verbal feedback. However, during FGD interviews, community members were not clear on the supportive supervisory mechanism given to CHWs. Community members assumed that most CHWs reported to some member of the DHMT, such as the district public health officer (DPHO), or the community health committee.

For those CHWs who felt they encountered problems with health workers, they indicated poor interaction between themselves and nurses that they attributed to different levels of training. Some CHWs were quoted saying, "Nurses are not taught on importance of CHWs while TBAs are resistance to our services as they feel we have taken over their work by referring deliveries to be done in health facilities."

CHWs were asked what they would like to see done to improve the utility of supportive supervision. In response, CHWs reported they would like to be given small tokens (in monetary form) and awards to motivate them, provision of transport and related equipment (such as IEC materials, stationery and bicycles), and refresher courses. This may suggest that some of the small incentives that they reported receiving may not be sufficient to sustain some CHWs. In addition, CHWs indicated they would also like written feedback so that errors can be minimized in subsequent supervisory visits, supervisors to accompany them when carrying out their work, and meetings organized with other CHWs to share experiences.

Support from the community

Eighty-six percent (86%) of the CHWs reported affirmatively that their community members appreciated and supported their work. Likewise, during FGDs, most community members said that they appreciated and supported the work CHWs did and that CHWs are largely responsible for reduction in disease burden, increased awareness of HIV/AIDS (reduced stigma) and health education in other areas, and improved access to health care services. As one CHW stated, "Community members support our work by appreciating what I do, obeying all instructions I give, helping in disease surveillance, help in client identification and referrals, and information sharing within the community."

The majority of the community focus groups recognized that CHWs mostly do volunteer work, where no direct pay is involved. Community members also said that travel fare, moral support (encouragement by community members), and small items purchased as signs of gratitude (tea, soap, etc.) are the most frequent support given to CHWs. Only one community group mentioned a monetary allowance being given to CHWs.

Summary

Many of the CHWs participating in this survey reported being clear about their roles and responsibilities, and had positive perceptions regarding their performance. Their perceptions were corroborated by FGD with community members, who reported regarding CHWs as critical players in health service delivery at the community level. Moreover, there seems to be demand within the community for the services that CHWs provide.

Many CHWs in this study were providing services to more than 20 households. If quality services are to be provided by CHWs—who receive only modest support at most—then it will be important to ensure mechanisms are functioning that prevent undue burden being placed on CHWs. Related to the workload issue is training and preparation of the CHW. Based on the interviews conducted, there is wide variation in training of CHWs, and some degree of standardization will be needed to ensure these health workers are adequately prepared.

Another important element of support for CHWs is supervision. Based on the data collected as part of this study, it is not clear if CHWs are receiving sufficient supervision in order for them to be successful agents of health promotion and disease prevention at the community level. Developing successful models of interaction between level two health facilities (and other levels)

with CHWs, and also methods of interaction among CHWs, will be essential for ensuring quality service delivery.

Recommendations

Based on the variation in training received, one area requiring further attention is the harmonization and accreditation of training programs for CHWs. Standards and guidelines need to be adopted, and curricula developed around these standards. This will help ensure that CHWs are adequately and appropriately prepared to deliver essential health promotion and disease prevention services in the community. Institutions such as AMREF have already helped to develop core curricula for community-based health workers, and much can be accomplished building off of existing work. The Interagency Coordination Committee on Community Health Strategy is an excellent starting point to initiate this harmonized approach. The accreditation function should rest within the GOK, with strong support from the Ministry of Public Health and Sanitation and other relevant stakeholders, as appropriate.

Once CHWs are trained and in place, a management and supervision process must be in place to support them and assure the quality of the services provided. Systems do exist and are in place, but as with the harmonization of training systems, the management and supervision of CHWs needs to be standardized as well. Strengthening this system will help clarify the roles and expectations of CHWs within the community, and ensure support and feedback to improve the quality of service delivery. Moreover, supervisors can be held accountable for their role in the delivery of services at the community level. A more standardized approach will help ensure CHWs have adequate basic tools to perform their job functions, and that they are not being overstretched beyond the appropriate number of households provided with services.

Findings Phase II: Health Training System

Background

Research questions

Data below is reported against the following two research questions:

- How well is the health care training system performing against the standards selected by the PNA stakeholder group? What gaps exist and what could be done to fill them?
- What role do gender issues play in the performance of the health care training system respectively?

Selection of performance criteria

The TWG adapted standards for quality education from the WHO Guidelines for Evaluating Basic Nursing and Midwifery Education and Training Programs in the African Region (2007) to assess the current performance of the training system. The nine basic standards, as adapted, include:

- Mission, philosophy, and objectives
- Educational program

- Assessment of students
- Students issues
- Academic staff/faculty
- Educational resources
- Program evaluation
- Governance and administration (leadership, management, and administration)
- Continuous renewal.

Results related to these standards, their sub-standards, and the additional questions added by the TWG, are reported below. The TWG, in concert with the Capacity Kenya research team, added questions under each standard area to contextualize the PNA for Kenya. For example, respondents were asked whether or not the curriculum at their institution prepared students to deliver care under the KEPH. Questions were also developed and data was analyzed with a focus on identifying patterns and gaps in equality of opportunity, treatment, and access in several of the standard areas.

Demographic information about study sample

Data for phase II was collected at forty-two training institutions and 34 affiliated health facilities where students complete clinical rotations. A total of 1,329 participants provided data.

Table 25. Respondents by Role and Institution Type

Phase II: Institution	Tertiary	Middle Level	Rural Training	Other Training	Health Facilities	Other	Total
School Directors/Principals/Deans	7	31	1	0	--	--	39
Training Coordinators	22	68	0	2	--	--	92
Faculty Members	29	168	0	2	--	--	199
Clinical Preceptors/Mentors	6	48	3	0	--	--	58
Students	86	491	0	6	--	--	584
Representatives from Regulatory Bodies, Director- Med. Services/Public Health & Sanitation & Professional Associations	--	--	--	--		10	10
Clients at Clinical Placement Sites[19]	--	--	--	--	347		347
Total # of Individual Respondents	**150**	**807**	**4**	**10**	**351**	**10**	**1329**

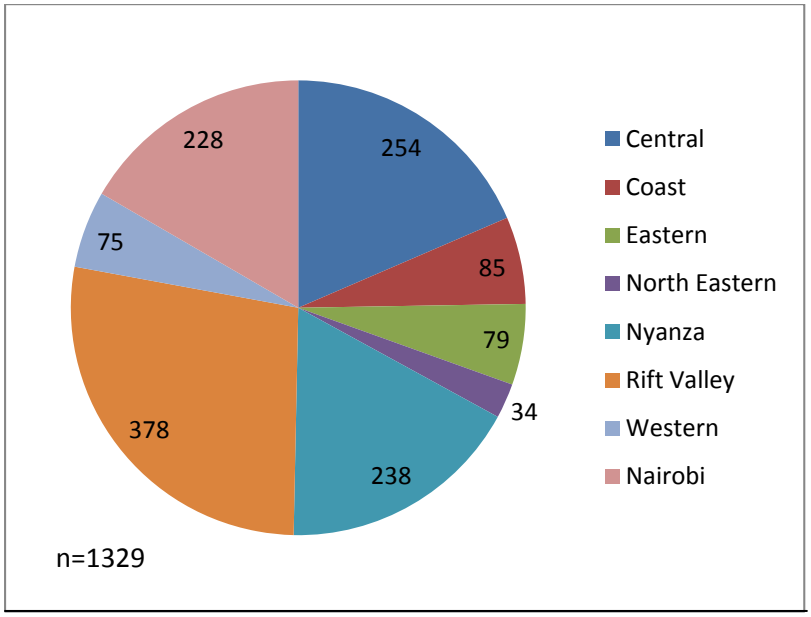
[19] The term "Client" is used herein to denote patients at health care facilities.

Respondents by type of training institution.
Table 25 shows the role of the respondents by the type of institution where they were work or were interviewed. A complete list of facilities is included in Appendix D.The majority of non-client respondents (957) are from or linked to tertiary and middle-level institutions. Data related specifically to training institutions are therefore primarily broken down and reported by tertiary and middle institutional levels.

Respondents by location. Data were gathered from respondents in eight provinces: Central, Coast, Eastern, North Eastern, Nyanza, Rift Valley, Western, and Nairobi.

Figure 16 below shows the distribution of total respondents by location. Eighty-three percent of the individuals who participated were located in Rift Valley, Nairobi, Central, and Nyanza districts.

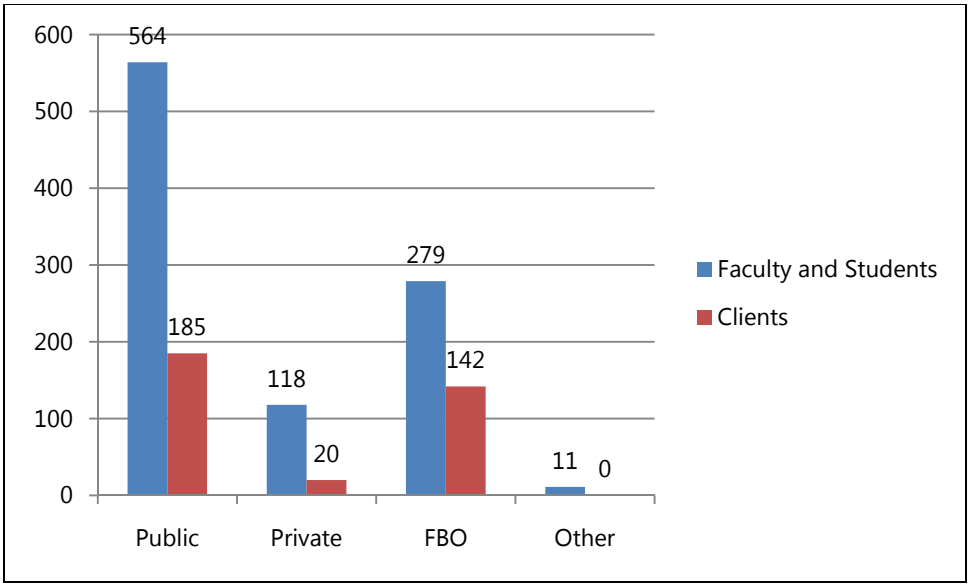
Figure 16. Individual Respondents by Location



Respondents by ownership of training institution and health facility. As shown in Figure 17, the majority (749 or 57%) of the 1,319 sampled faculty [20], student, and client respondents work, study, or receive health care at public institutions. Regulatory, Ministry, and professional association respondents are not included in the data presented in this graph.

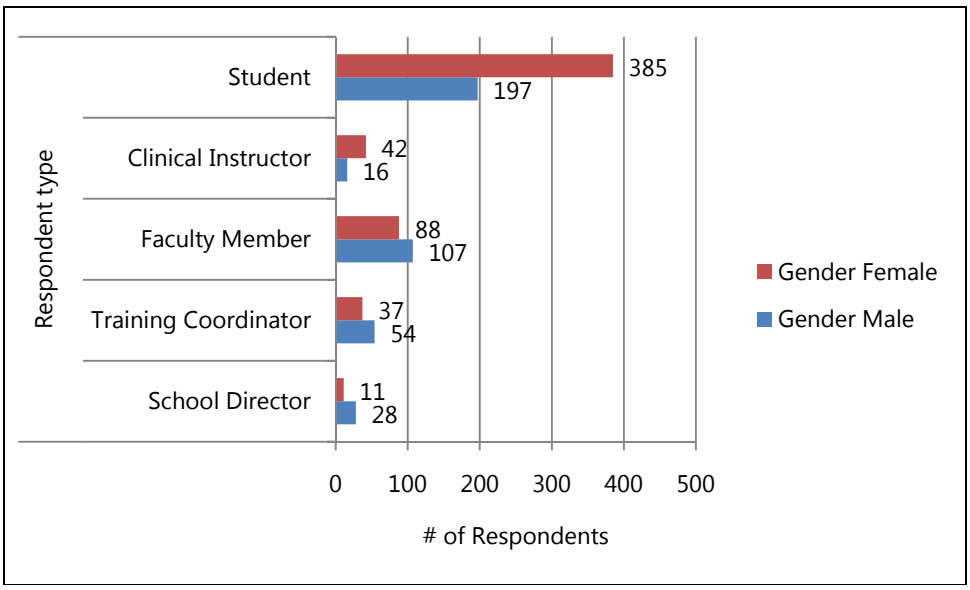
[20] The term "faculty" includes school directors, training coordinators, faculty members, and clinical instructors or combinations of these groups.

Figure 17. Faculty, Student, and Client Respondents by Ownership of Training Institution and Health Facility



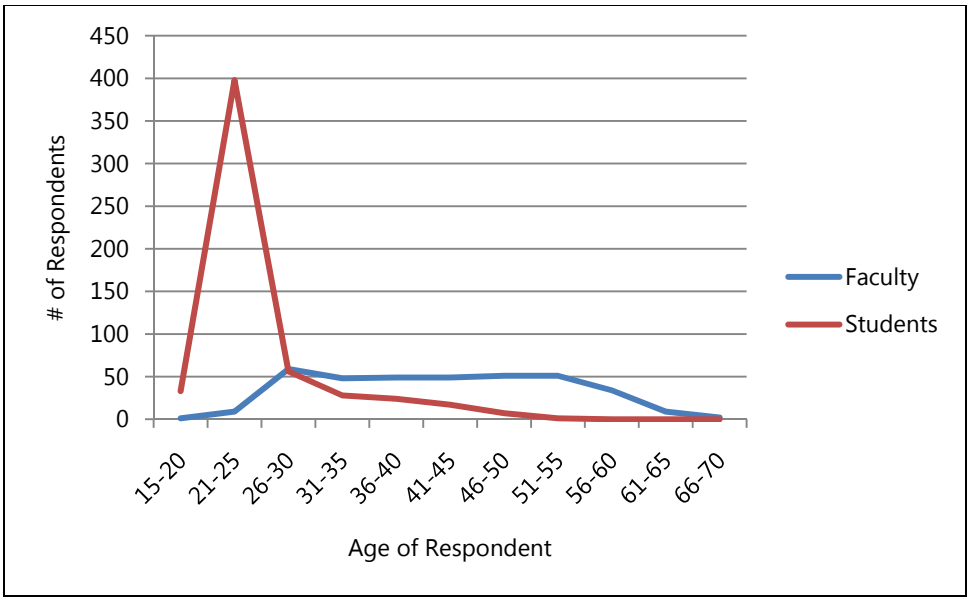
Respondents by gender. Of the 965 faculty and students from training institutions who identified their gender, 563 of them (58%), were female. Females represent 66% of the student population and 46% of the faculty population (see Figure 18). As nursing is considered a traditionally female occupation, the high percentage of female students in the sample is consistent with having a large number of facilities offering nursing programs in the sample. Data for client respondents were not included in this calculation on gender. During the client exit interview, only the gender of the patient, and not necessarily the individual providing data (who might be a parent or guardian), was collected. Ministry, regulatory, and professional association respondents were not asked to identify their gender.

Figure 18. Gender by Respondent Type



Respondents by age. Total respondents include faculty and students. The age of the respondent was not collected for clients, Ministries of Health, Regulatory Bodies, and Professional Association respondents. As the figure below indicates, 86% (487) of sampled students are between 15 and 30 years of age while reported ages for faculty are more evenly distributed across the range.

Figure 19. Respondents by Age



Training institutions: Performance against standards

Mission, philosophy, and objectives. As a component of ensuring educational quality, a training institution must ensure that it has a statement of mission and objectives, involves stakeholders in updating the statement, and shares that statement with its constituency. Institutions should also have a policy on academic autonomy that allows the faculty freedom to design the curriculum and should establish clear linkages between the competencies that students need to graduate and their roles in the health care system. Quantitative data indicate that sampled institutions have mission statements in place that reflect the work of the institution and are aligned with national health goals and community needs. Furthermore, respondents believe that current curricula help students develop competencies that are linked to the work they will do after graduation. A potential lack of academic freedom for faculty at middle-level institutions and a lack of stakeholder involvement in updating the mission, goals, and objectives at both tertiary and middle-level institutions were identified as areas of concern. Specific results under this standard are listed below.

Statement of mission, philosophy and objective

A training institution must:

- Define its mission statement in alignment with national health priorities and community needs
- Ensure that the mission statement accurately describes the work of the organization
- Make the mission statement known to its constituency.

At 39 of the 42 institutions surveyed, at least 75% of school directors, faculty members, and training coordinators[21] said "yes" to the question, "Does your school have a statement of mission and objectives?" Ninety-seven percent of these respondents also indicated that they had read the mission statement. During the facility audit, training institutions were asked if a copy of the mission statement was available. One-hundred percent of tertiary and 97% of middle-level institutions answered "yes" to this question and, in many institutions sampled, the mission statement was actually posted on the walls of the institution when research teams visited the sites. However, none of the institutions actually provided a portable copy of the mission statement to the research teams.

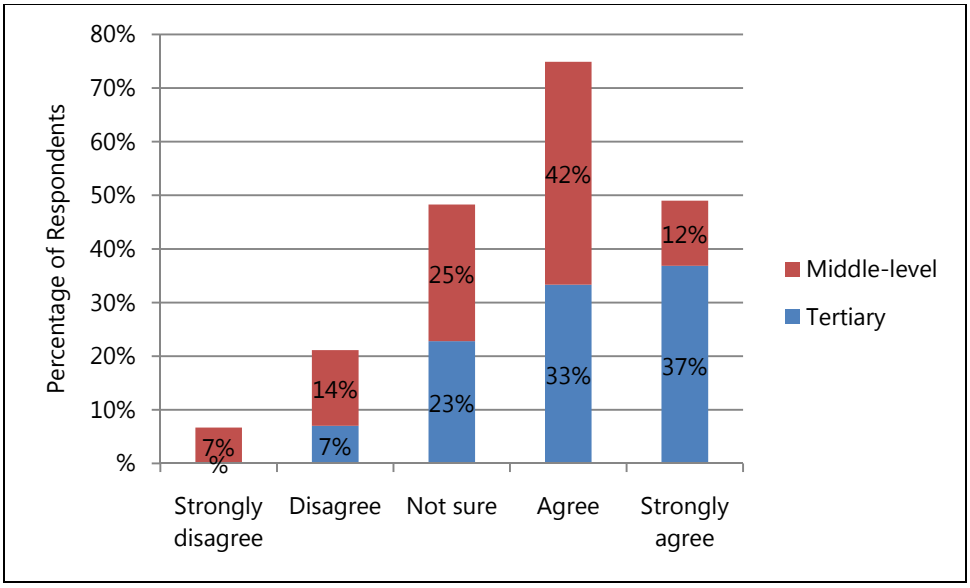
Eighty-seven percent (87%) of the sampled faculty respondents agreed that the mission statement accurately describes the work of the organization and that their institution's statement of mission and goals reflected the institution's philosophy about social responsibility and community involvement. Furthermore, 89% believed that the mission statement at their institution is aligned with national health goals and community needs.

Participation in formulation of mission and objectives

Training institutions must involve stakeholders in updating the institution's mission statement, goals and objectives. As shown in Figure 20, neither tertiary nor middle-level faculty agreement on this question met the 75% threshold. This lack of agreement regarding involvement of stakeholders is an area of concern.

[21] School Directors, training coordinators, faculty members, and clinical instructors may be collectively referred to as "faculty" throughout the document.

Figure 20. Stakeholders Involved in Updating Mission

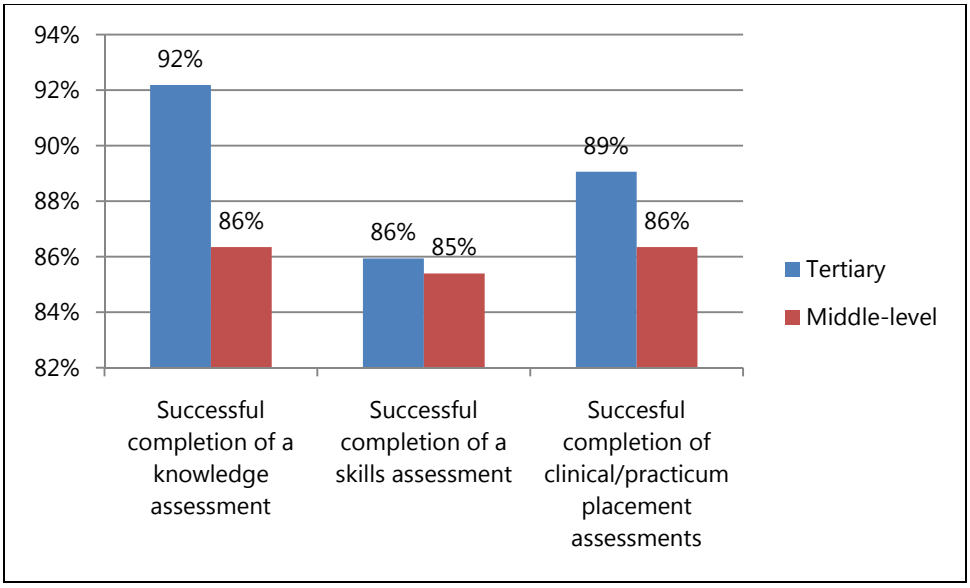


Academic autonomy. Training institutions must establish a policy on academic independence that gives faculty the freedom to design the curriculum. Participant responses suggest that many middle-level schools may not, in fact, have a policy on academic independence; 46% of faculty at middle-level institutions were not sure or disagreed that their institution had such a policy. This finding suggests that middle-level institution faculty have limited abilities to help renew the curriculum at their institutions.

Educational outcome. Training institutions must define competencies that students should have to graduate which are linked to their future roles in the health care system. Results in this area are all above the 75% threshold level:

- 95% of faculty said that the curriculum clearly defines the competencies students need to graduate
- 94% indicated that these competencies are linked to future roles that graduates will play
- 93% agreed that these competencies are aligned with competencies developed by the appropriate regulatory body (e.g., Ministries of Health, Nursing Council).

Figure 21. Minimum Requirements for Graduation by Institution Type



School directors, training coordinators, and faculty members were also asked to identify whether or not their institution required successful completion of a knowledge assessment, skills assessment, and clinical practicum as requirements for students to graduate. Figure 21 shows that agreement levels from both tertiary and middle-level respondents are well above threshold limits.

Educational program. For an institution to demonstrate that it has quality educational programming, the institution must meet sub-standards related to curriculum and content, program management, and linkages with the larger health care system. Ultimately, the educational program should prepare students to deliver high-quality health care in the environments in which they will work after graduation, including preparing them to deliver against the KEPH. Training institutions must also ensure that a participative process is in place to regularly review and renew the curriculum in order to keep pace with the fast-changing health care environment and ensure graduates have relevant skills[22].

All respondent groups, except clients, were asked to provide suggestions as to how the curriculum could be improved. In focus groups, students were also asked how well they felt they were being prepared to provide health care in Kenya. Results in this area are presented below.

Quantitative data show that respondents feel their institutions generally have well-structured curricula which are current and in-line with national standards and priorities. Primary areas of concern include the need to update curricula in a few specific areas, the need to put curriculum committees in place at middle-level training institutions and expand curriculum committees to external stakeholders at all institutions, and the need to strengthen linkages between

[22] WHO Guidelines 2007.

institutions and the larger health system with respect to curriculum renewal. Additionally, while respondents agreed that training curricula are aligned with national priorities, it is not clear that respondents believe the current educational programs at training institutions are preparing students to deliver the KEPH. Qualitative data, particularly from clinical instructors and students, also point to the need to strengthen support for students during clinical placements and curricular and programmatic linkages between classroom and clinical training. Specific results are discussed in more detail below.

Curriculum and content. Meeting the standards in this area requires that the institution's curricula:

- Have defined curriculum models and instructional methods
- Be aligned with national health priorities and community needs
- Effectively incorporate basic sciences and scientific principles that encourage analytical and critical thinking
- Incorporate biomedical, behavioral, and social sciences, as well as ethics
- Reflect the current standards of care as developed by regulatory authorities.

The curriculum must also be adequately balanced with respect to theory, demonstration, and clinical teaching; have a structure showing composition, duration and sequencing of the courses; and adequately prepare students for clinical/practical training.
Table 26 below shows the percentage of respondents from tertiary and middle-level institutions who agreed that their school met selected sub-standards related to curricula and content. Faculty include school directors, training coordinators, and other faculty members.

Table 26. Selected Results Related to Curricula and Content

% of respondents (faculty) who agree that the curriculum:	Tertiary	Middle-level
has defined curriculum models and instructional methods	90%	83%
promotes analytical and critical thinking	92%	86%
incorporates basic sciences	96%	90%
incorporates behavioural sciences, social sciences, and ethics	94%	82%
is adequately balanced with respect to theory, demonstration, and clinical teaching	82%	69%
has a structure showing composition, duration and sequencing of the courses	97%	94%
provides students with adequate classroom training prior to the clinical/practical training	87%	77%
is aligned with national priorities and community needs	95%	90%

As Table 26 data shows, results in these areas are very positive. In addition:

- 90% of middle-level and 95% of tertiary faculty respondents agree that the goals/objectives of their organizations are "aligned with national priorities and community needs"

- 94% of faculty respondents overall agree that the competencies students need to graduate are linked to the future roles they will play in the health care system.

The one area of concern highlighted in this quantitative data is that middle-level curricula may not be adequately balanced with respect to theory, demonstration, and clinical teaching. Qualitative data from student FGDs and open-ended questionnaires suggest that the balance between theory, demonstration, and practical training could be improved at both levels of institutions. Issues reported as major challenges in FGDs include:

- Too much theory-based learning (Tertiary FGD)
- Content is outdated in some areas
- Disconnection between theory and practical. Lessons are mostly theoretical as the facilities to conduct practical sessions are lacking (Middle-level FGD)
- Students overworked without enough time to study and prepare for exams
- Inadequate exposure of students. This is due the curriculum's inclination towards theoretical rather than practical skills (Tertiary FGD).

In open-ended questionnaires, student supported these findings as quoted:

- "The overall curriculum can be improved by strongly practicing what has been put in place"
- "Before first practicals, students should receive adequate classroom training"
- "Students should be given enough time to learn enough theory which they can apply at their practical internship/attachment"
- "Ensure we have adequate time to cover the whole curriculum in time and enough time for clinical practicals"
- "More field work to expose students."

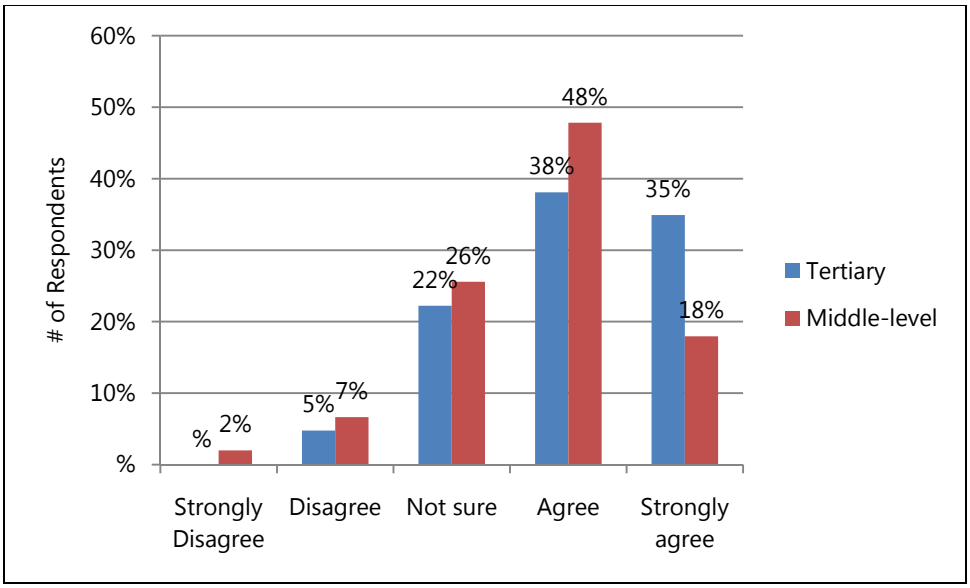
It is important to note that results presented above are based on respondents' perceptions of the curriculum and its content rather than on an actual review of curricula at sampled institutions, which could be used to further investigate these areas and determine the validity of this data.

Alignment with KEPH. The MoH have identified the KEPH as the minimal standard for delivery of quality primary health services for all Kenyans[23]. Accordingly, PNA respondents were asked to comment on whether or not current curricula help students understand the life-cycle approach and effectively prepare them to deliver healthcare under the KEPH. PNA data suggest that KEPH is not yet fully understood or integrated into the health care training curricula to the extent necessary for Kenya to achieve its targets for KEPH. As Figure 22 indicates, only 66% of middle-

[23] National Health Sector Strategic Plan 2005-2010

level and 73% of tertiary faculty agreed the current curriculum effectively prepares students to deliver the KEPH. Additionally, an average of 26% of respondents were "not sure" that the curriculum prepares students to deliver KEPH, suggesting that there is not a clear understanding of what KEPH is and how students should be prepared to deliver it in health care training institutions.

Figure 22. Curriculum Prepares Students to Deliver on the KEPH



When asked *how* the curriculum prepared students to deliver the KEPH, school directors and representatives from ministries, regulatory bodies, and professional associations were divided. Quotes that demonstrate this division include:

"The curriculum has been repackaged to train trainees on all issues of the KEPH" –Regulatory director "A."

"The KRCHN [curriculum] addresses KEPH. Those trained as KRCHNs can work at all levels" –Regulatory director "B."

"The KEPH is delivered by cohort levels" –Ministry representative.

"Those in academia are not familiar with KEPH" –School director at a public tertiary institution.

"Training of the cadres here is structured through a life cycle approach; however; the KEPH concept has not cascaded to the training institutions. The training is more geared towards disease prevention but not the social aspects" –School director at a middle-level public institution.

Key respondents from the two health Ministries (MOMS & MOPHS), regulatory bodies, and training institutions reported that training curricula generally reflected the market demand with regard to the skills needed to deliver primary care services and were not necessarily determined by policy. However participants also reported that the basic principles of the KEPH provided the broader framework that guides pre-service training curricula among all cadres, with only slight adjustments to cater for differences between cadres and expected skill-sets and level of service delivery (level two to five). It is important to note however, that private training institutions were reportedly not necessarily using KEPH to guide their training curricula.

In self-administered questionnaires and in-depth interviews, faculty and regulatory respondents recognized that health training curricula need to be better aligned with KEPH as well as with other health care system goals (e.g., Millennium Development Goals, Vision 2030) and that a gap exists between policy and implementation. Responses from these leadership groups raised several systemic issues that threaten the ability of the system to support alignment with KEPH and other needed curricular changes. These systemic issues include:

- Linkages between the Ministries of Health, regulatory bodies, and training institutions necessary to refocus the curriculum toward the KEPH, or any future initiative, are not functioning as effectively as expected or needed.
- All regulatory bodies that accredit curricula at all levels of training and the training institutions are not fully familiar with KEPH themselves and, therefore, do not ensure that health workers complete pre-service training with the competencies to deliver KEPH at level one through five facilities.
- Lack of harmonized curricula across specific content areas and for similar cadres and levels of training
- Lack of technical expertise required to conduct a curriculum review both in the training institutions and inside the regulatory bodies
- Lack of evidence (research) regarding what needs improving. With little or no evidence to support the need for curriculum review, training institutions and regulatory bodies lack the impetus to improve what is currently being used.
- Students are not exposed to all levels of care (one through five) in their practical training and therefore cannot be fully prepared to deliver KEPH at all levels.
- CPD updates by the Ministries may be sent to health facilities and not schools so they do not necessarily get integrated into the curriculum.

Teaching methods. As part of the research on educational programs, faculty and students were asked to identify those teaching methods utilized at the institution as well as to identify which of these methods were used appropriately.

Figure 23. Teaching Methods Used/Used Appropriately at Institution, according to faculty and students

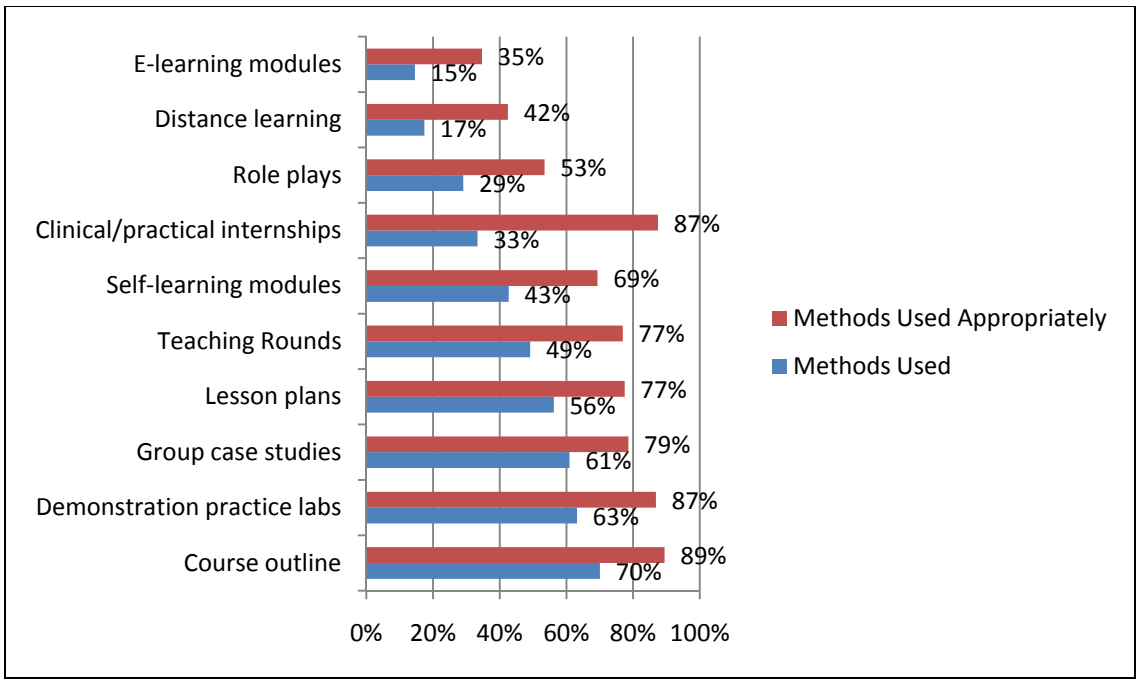


Figure 23 above shows the average percentages of faculty and student respondents at both tertiary and middle-level institutions who agree that the listed teaching methods are used and used appropriately at their institutions. As these data show, e-learning, distance learning, and role playing—all modern teaching methods—were reported as being those methods least used and used least appropriately. Lower usage of e-learning and distance learning may be related to a general lack of ICT resources reported under the "Educational Resources" section below, or to a lack of orientation of faculty to a variety of instructional methods other than didactic approaches. However, role plays are an example of a teaching method that can be implemented with few resources and without technology. This suggests that this method may not be well-understood in health care training in Kenya.

Of note is that percentages of respondents who agree that a method is "used appropriately" are higher than those who agree that a method is used at all. An average of 932 respondents shared their perceptions about whether or not a method was used while only an average of 785 individuals responded on questions asking if a method was used appropriately. This suggests that individuals who recognized that a method was used at their institution were more likely to give feedback on whether or not it was used appropriately. In six of the 11 categories listed above, percentage differences between agreement that a teaching method was used at tertiary and middle-level institutions was less than 11%. However, for course outlines (88% tertiary vs. 67% middle-level), clinical/practical internships (73% vs. 53%), and demonstration/practice labs (80% vs. 60%), differences were 20% or more with higher percentages of agreement reported at tertiary institutions. Only in the areas of lesson plans (50% tertiary vs. 57% middle-level) and distance learning (13% tertiary vs. 18% middle-level) were agreement levels regarding method usage higher at middle-level institutions.

Specific content areas. Faculty from training institutions, clinical instructors, students, and representatives from professional associations were asked to give feedback on whether they believed the curriculum at their institutions helped students acquire sufficient knowledge across a variety of subject areas. Faculty and clinical instructors were also asked whether they believed the curriculum related to these subject areas meets the current standards as defined by the appropriate regulatory body. (Note: Respondents were not given further information about which parts of the curriculum are kept current by each regulatory body.) Table 27 below presents results for these questions; areas of concern are shaded within the results.

Table 27. Curriculum Sufficiency and Currency

Area	% of Respondents who Agree that the Curriculum Helps Students Acquire Sufficient Knowledge		% of Respondents who Agree that the Curriculum Meets Current Standards	
	Tertiary	**Middle-level**	**Tertiary**	**Middle-level**
HIV/AIDS	93%	90%	87%	80%
HCT	Not included in question	Not included in question	70%	67%
PMTCT	Not included in question	Not included in question	83%	73%
ARV	Not included in question	Not included in question	87%	69%
Palliative Care	Not included in question	Not included in question	71%	63%
RH/FP	83%	85%	88%	81%
Malaria	90%	94%	89%	88%
MCH	85%	91%	85%	87%
IMCI	74%	81%	79%	78%
TB	83%	87%	87%	82%
PHC	86%	88%	83%	84%
Environ. Health	78%	86%	77%	82%
Nutrition	84%	84%	83%	82%

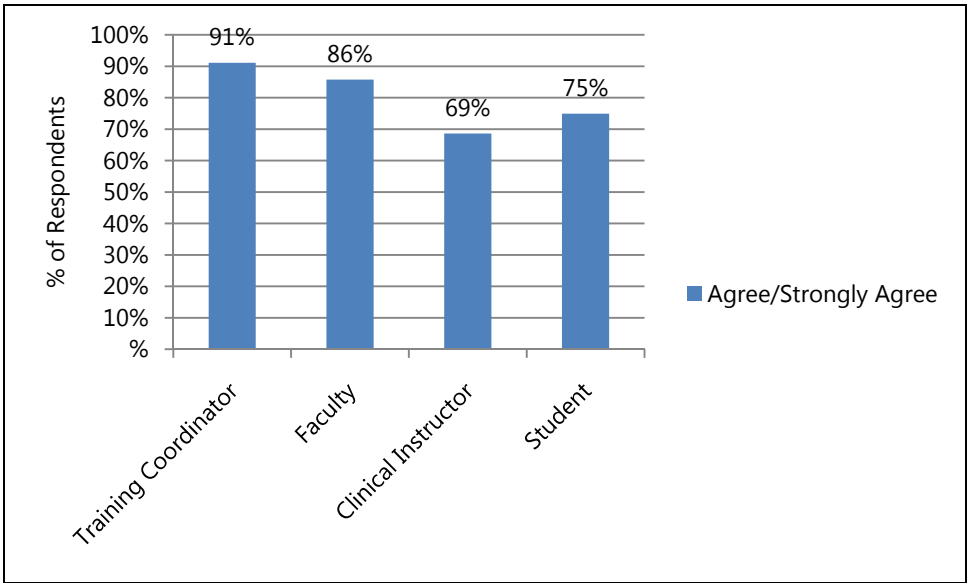
As Table 27 shows, faculty and student respondents associated with both tertiary and middle-level institutions were generally in agreement around curriculum sufficiency. The exception is that 74% of respondents from tertiary institutions agreed that the IMCI curriculum helped students acquire sufficient knowledge. Respondents were not as confident that the curriculum reflects the current standards developed by appropriate regulatory bodies (including Ministries of Health) in the areas of HCT (68% of all respondents agreed), PMTCT (73% at middle-level institutions agreed), and palliative care (71% of tertiary respondents and 63% of middle-level respondents agreed). "Not sure" responses ranged from 6% for HIV to 23% for HIV-Palliative Care. Curriculum review for individual subject areas will be important in determining the validity of this data and the extent to which the curriculum is in line with current standards under the KEPH and for each cadre.

Clinical placements. Clinical training is a critical part of the curriculum that prepares students to apply the skills learned in the classroom, (e.g., learning about how to deliver a baby versus having the skills to do so). Linkages between classroom training and clinical/practical training and between faculty members and clinical instructors must be strong in order to adequately prepare students to deliver high-quality health care in real-world environments. In self-administered questionnaires faculty, clinical instructors, and students were asked to evaluate how closely they believed clinical training was linked to the real life work situations that students would face after graduation. In in-depth interviews, clinical instructors also provided feedback describing how they helped students meet learning objectives and gain practical knowledge. Clinical instructors also discussed how they worked with faculty members to provide supervision to students. Finally, these instructors provided feedback on how they managed their individual caseloads at the health facility while simultaneously teaching students clinical skills.

Quantitative results in this area are mixed. As shown in Table 26 above, 87% of tertiary and 77% of middle-level faculty and student respondents agreed that the curriculum at their institutions provides students with adequate classroom training prior to students' clinical training. However, a breakdown of the "agree" and "strongly agree" responses by respondent type (see

Figure 24 below) suggests that training coordinators and faculty members believe that students receive adequate classroom training while students and clinical instructors are less sure.

Figure 24. Students Receive Adequate Classroom Preparation for Clinical Training by Respondent Type



Qualitative data from interviews with clinical instructors and student focus groups, as well as data from open-ended questions, reinforce concerns regarding an existing disconnect between classroom training and clinical/practical training. Results show that support needed for learning during clinical placements is less than expected or needed to adequately prepare students for

their future roles. This may lead to, as one clinical instructor noted, "production of half-baked health care workers."

Clinical instructors specifically expressed concern over:

- Having too many students to mentor and not enough staff to mentor them
- students' lack of or outdated knowledge in technical areas
- Lack of learning objectives to inform the clinical rotation
- The wide variability in approaches that various training institutions used to prepare students for clinical rotations
- Poor integration of the institution's syllabus and the student clinical rotation
- Heavy clinical workloads that prevent instructors from supervising students effectively in addition to their regular duties as health care workers
- Poor linkages between themselves and the faculty members from training institutions
- Changes in procedures and updates from the MoH that are not being integrated into classroom teaching
- Students' indiscipline and lack of commitment.

Quotes from clinical instructors that illustrate these points include:

"Most students have very little ideas on what to do; they can't relate class work with practical work" –clinical instructor at middle-level institution.

"Students are dumped at the hospital [with unclear or undefined objectives for the clinical training]" –clinical instructor at middle-level institution.

"Everything seems new to [students] thus you have to go back to the basics that should be taught in class, yet there is limited time" –clinical instructor at middle-level institution.

"This has been a challenge as it seems students come to the practical area without an objective, at the end they only learn what we do every day not the objectives they had" –clinical instructor at middle-level institution.

Eighty-one percent of clinical instructors interviewed also noted that there were some procedures that students were not allowed to perform, including administering drugs and tests, especially for TB; fixing IV lines; giving injections; and conducting surgical procedures. Note: these responses were given for clinical instructors for specific middle and tertiary-level students (e.g., medical, nursing, clinical medicine and medical laboratory students).

Some clinical instructors said it was "very challenging to manage it all." Strategies clinical instructors used to counteract these challenges and help students meet learning objectives and gain practical skills include:

- Allocating duties to students and splitting them into rotation groups, including delegating the clinical instructor's own workload to students
- Asking students what they are interested in and needed to learn
- Conducting random checks on students and asking students to explain procedures
- Using group discussions
- Developing a work plan for students and using log and objective books
- Conducting field trips
- Shadowing students as they perform procedures
- Monitoring students' bedside manner.

Despite reporting being challenged, 85% of sampled clinical instructors sampled reported being "somewhat satisfied" or "very satisfied" in their jobs and 90% said they planned to continue as a clinical instructor in the future. The most common reasons they gave for staying in the role included that being a clinical instructor was part of their job, they wanted to continue learning, the job was interesting, and that they received personal satisfaction from working with students.

In focus groups and on self-administered questionnaires, students echoed concerns raised by clinical instructors about the imbalance between theory learned in the classroom and practice during the practicum: insufficient resources in practicum sites, including faculty and clinical instructors and equipment, and limited direction and guidance from both faculty members and clinical instructors during the clinical rotation. Students also expressed concerns about being overworked during the rotation, physical and post-exposure prophylaxis (PEP) safety challenges, and hostility from staff toward students.

Concerns about the imbalance between theory and practice are discussed above. Resource shortages related to clinical practica, including students being overworked and a perceived lack of direction from faculty and clinical instructors, are discussed under the educational resources section below. Concerns about safety were primarily raised by those students who did not have access to enough resources to perform a procedure safely or students had to work in the wards alone at night.

Client feedback at clinical practicum sites. Post-visit interviews were also conducted with 347 respondents at 34 health facilities across the eight provinces to assess how well students were performing in clinical rotations. Clients were asked:

- About the nature of the visit
- If at least one of the health care providers they saw was a student

- Whether they had adequate time to talk with the health care provider and privacy
- If they received tests and, if so, a clear explanation about the tests and results
- If they were given a date for a return visit
- Their overall satisfaction level
- What could be done to improve the visit.

The gender and age of the client were also collected where possible.

Figure 25 shows distribution of clients by location and type of training institution with which the health care facility is associated. The majority of clients (89%) were interviewed at facilities associated with middle-level training institutions, primarily in the Rift Valley, Nyanza, the Central Region, and Nairobi.

Figure 25. Distribution of Client Respondents by Location and Association of Health Care Facility with Training Institution

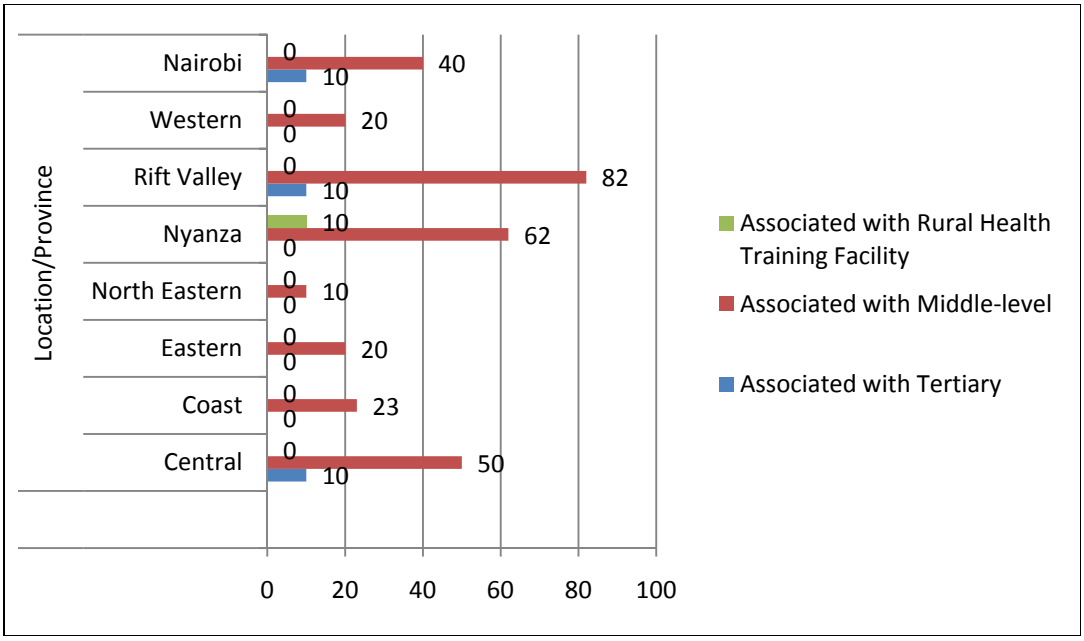


Figure 26 below presents client-reported levels of satisfaction by type of training institution and ownership of facility while Table 28 shows client satisfaction by reason for visit.

Figure 26. Client Satisfaction by Level and Ownership of Health Facility

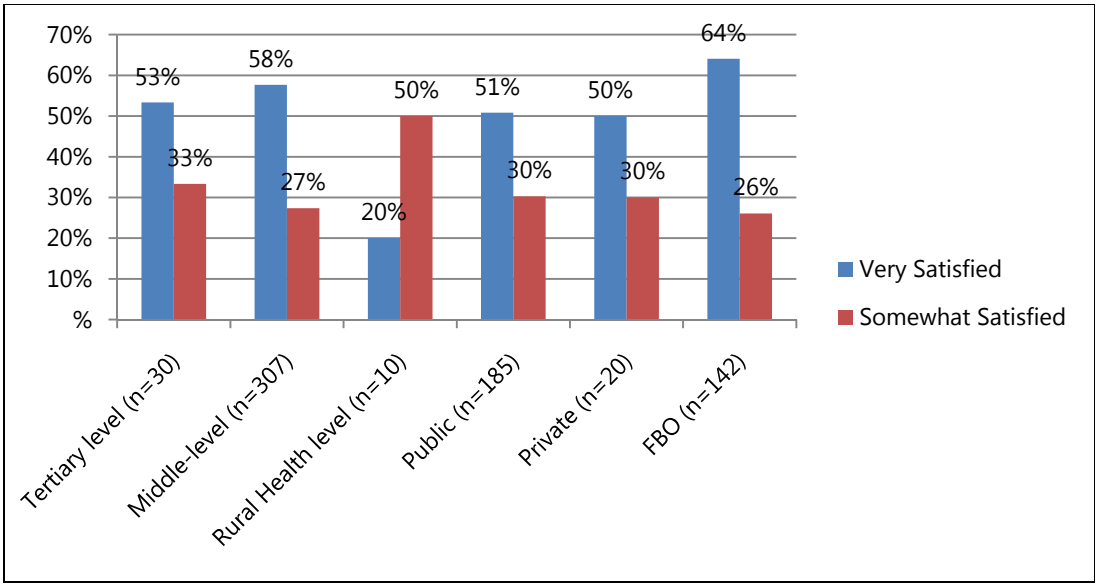


Table 28. Client Satisfaction Rates by Reason for Visit

	HIV/AIDS (n=25)	RH/FP (n=20	Malaria (n=32)	MNCH (n=124)	IMCI (n=33)	TB (n=3)	PHC (n=18)	Other (n=94)
Very satisfied	52%	67%	31%	69%	36%	33%	44%	57%
Somewhat satisfied	28%	22%	50%	23%	48%	67%	28%	22%
Not sure	0%	0%	0%	0%	0%	0%	11%	2%
Somewhat dissatisfied	16%	0%	19%	2%	3%	0%	11%	11%
Very dissatisfied	4%	11%	0%	6%	12%	0%	6%	7%

As shown in Figure 26, clients of faith-based facilities reported higher levels of satisfaction with their health care visit than those who visited private or public facilities. Overall client satisfaction (somewhat or very satisfied) met the 75% threshold for all services except primary health care (72%). In the areas of IMCI, malaria, primary health care, and TB (very small sample), less than half of the clients were very satisfied with the health care they received. While overall client satisfaction with students was high, concerns raised by clinical instructors and students about lack of student preparedness and supervision were echoed by clients. Table 29 below presents additional selected results from client interviews.

As Table 29 depicts, responses about the sufficiency of privacy from clients who saw students is below the threshold. Although 71% of the patients discussed in the sample were female, both male and female respondents reported not having enough privacy at somewhat similar rates (24% female, 19% male), suggesting that having a student present may be a factor in client's feelings about privacy. Qualitative data supports clients concerns over students' abilities to provide care and the lack of student supervision at clinical sites. Client comments in this area include:

"It's is good if the nurses provides the services because the students don't know most of the things." –RH/FP patient

"I have never been served by a qualified staff. The instructor should be available." –MCH patient

"The students should be accompanied by qualified health providers. Some student nurses do not handle us well." –RH/FP patient

"The students/trainee nurses should not be left alone at night to attend to clients." –Malaria patient

"We need more qualified people to attend to us - not just students. Three out of the four who attended to me were students." –MCH patient

"Do not to delegate all duties to students." –MCH patient

"Increase the number of qualified health professional not to depend on students so much." –MCH patient

"The students should not be left alone to serve clients without the experienced health providers to guide them." –MCH patient

Client responses about the clarity of information received before and after tests were conducted also fall below the threshold on average.

Table 29. Selected Results from Client Exit Interviews

% of Respondents who:	Saw Student (n=236)	Didn't see student (n=65)	Not sure if saw student (n=46)	Average
Had issues to discuss w/health provider	64%	68%	74%	66%
Had enough time to talk with health care provider	85%	89%	89%	86%
Had enough privacy	73%	89%	80%	77%
Had tests conducted	76%	86%	83%	79%
Received information about tests before they were conducted	68%	68%	77%	70%
Received information about tests after they were conducted	68%	70%	70%	69%
Were given a return date for a visit	68%	69%	52%	66%
Were satisfied (somewhat or very) with the service they received from the health care provider	85%	89%	76%	85%

In summary, this feedback from clients further reinforce concerns raised by faculty and students that clinical placements need to be improved in order support student learning.

Program management. At the basic standard level of educational program management, all training institutions must have a curriculum committee in place that has the responsibility and authority for managing the curriculum. To meet the quality standard, the curriculum committee should have resources to carry out its mission and staff, students and other stakeholders should be represented on the committee. Table 30 provides data on faculty responses about curriculum committees and linkages between the academic program and employers in the health care market.

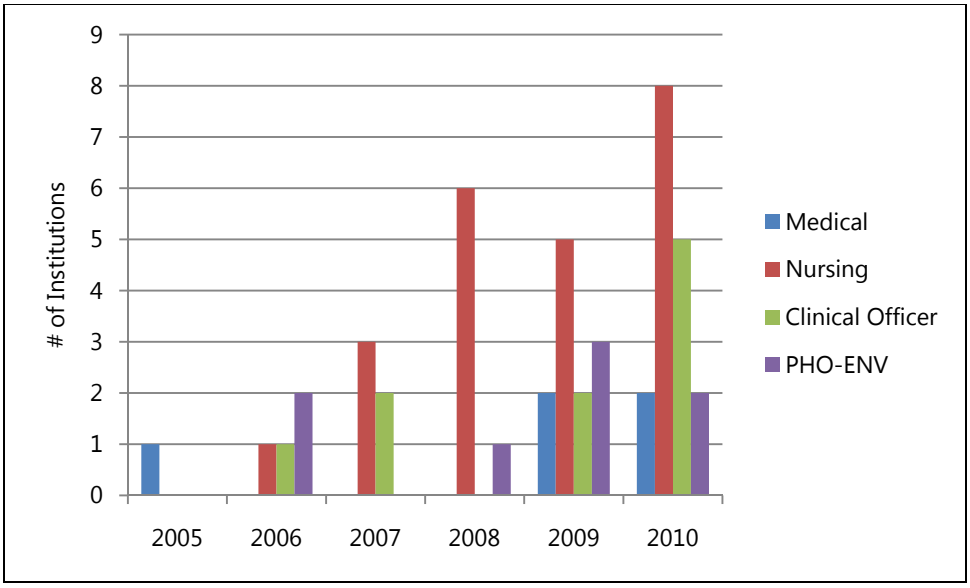
Table 30. Curriculum Committees, Involving Stakeholders, and Linking to Employers

% of Faculty Respondents who Agreed:	Tertiary	Middle-Level
Their institution has a curriculum committee in place	79%	56%
Curriculum committees involve faculty/students in curriculum updating	63%	45%
Curriculum committees involve regulatory bodies in curriculum updating	65%	47%
The academic program has strong linkages with employers	72%	66%
Clinical training is linked to real-life work	95%	89%

In addition to the quantitative data presented above, school directors were asked how the faculty/department kept the curriculum updated to meet the standards established by the MoH or other bodies. Responses varied from "I don't know," to "each teacher is responsible for the area involved and incorporates changes," to "the review involves MoH and regulatory bodies as consultants." The most common responses from school directors, however, indicated that training institutions regularly conduct reviews of the curriculum (usually every three to five years) and try to incorporate new policies and advances in medicine that they become aware of through regulatory bodies, continuing education/seminars, or other formal/informal sharing of information.

This finding is supported by data shown in Figure 27 on the year curricula were last updated by program area; the majority of institutions surveyed have updated their curricula in the past five years. Together these data suggest that while internal processes for updating curricula, including curriculum committees, are in place, what needs to be primarily strengthened are the linkages between training institutions and their internal and external stakeholders.

Figure 27. Year Curriculum Last Updated for Medical, Nursing, Clinical Officer, PHO-ENV Programs



Linkages with the health care system. The academic program must establish operational linkages to subsequent stages of training (i.e., clinical placement), education, or employment that the student will enter. To achieve the quality standard in this area, institutions should seek input from other educational institutions, employers, and community and utilize this feedback to keep the curriculum and academic program current and relevant.

Concerns regarding weak linkages between training institutions and external stakeholders have already been noted above. Reinforcing these concerns, 72% of tertiary and 66% of middle-level respondents agreed that their academic program maintains strong relationships with subsequent stages of education, training, or employment (see Table 30).

Table 31. Suggestions to Improve the Curriculum

How could the curriculum be improved?	School Directors	Regulatory Directors	Clinical Instructors	Students
Conduct regular review and update of the curriculum	X	X	X	X
Involve all stakeholders (training institution, MOH, regulatory bodies) in the regular review of curriculum with everyone working together	X	X	X	
Conduct research to understand community needs	X			
Solicit input from those involved in health delivery	X		X	
Provide more resources for health training (books, labs, supplies)	X		X	XX*
Design specific competencies for each cadre and level of training		X		
Developing stronger linkages between classroom, practical, and field work			X	X
Hire and train more instructors and staff to help students			X	XX
Give students more time to learn theory (too much to be				XX

How could the curriculum be improved?	School Directors	Regulatory Directors	Clinical Instructors	Students
covered in each course) so that they are prepared for clinical training				
Give students more time for practical training			X	XX
Provide current instructors, including tutors, with more training and/or time to attend seminars			X	XX
Harmonize curricula in Kenya with other curricula in East Africa			X	
Give students credits for training already conducted elsewhere			X	
Make sure that students have objectives for practical training			X	X
Make sure that clinical instructors are in place to help students (don't leave students alone so often)				XX
Ensure that classroom faculty also monitor students during practical training			X	XX
Improve faculty to student ratio ("1 to 200 is too high")			X	X
Replace outdated materials (e.g. textbooks)				XX
Incorporate e-learning				XX
Improve laboratory resources				XX
Incorporate more ICT in learning				XX
Enforce the attendance policy for classes				X
Punish those who are cheating in class and on exams				X
Add more "hands-on teaching" such as group work, role plays,				X
Improve transportation options for students				X
Add educational tours at research centers (e.g. KEMRI)				X
Standardize the curriculum across institutions				X
Ensure that assessment is fair and without corruption				X

*Some items above are marked with "XX" because these themes were strongly and consistently supported across the student respondent pool.

Improving the educational program. School directors, training coordinators, faculty members, clinical instructors, students, and representatives from the ministry and regulatory bodies were also asked what could be done to improve the curriculum overall. The most common suggestions are presented in Table 31 and reinforce findings reported above in this section and in the section on educational resources.

Assessment of students

To meet assessment standards, faculties and departments must have an assessment policy that states and defines the methods of assessing students, including criteria for passing exams, and must use assessment principles and methods that are in line with educational objectives and promote learning. School leadership, faculty members, and clinical instructors were asked to evaluate practices at their institutions against these standards.

Table 32 summarizes results from five overall questions. While generally positive, these results indicate that middle-level respondents are less convinced than their counterparts at tertiary institutions that their faculty and clinical instructors are well qualified to assess students. Furthermore, both quantitative and qualitative results from these data and data presented previously suggest that faculty members and clinical instructors could work more effectively together on student assessment.

Table 32. Selected Respondent Agreement on Student Assessment

Area	Tertiary	Middle-level
The faculty has an assessment policy in place that defines and states the methods of assessing students.	98%	95%
The faculty uses student assessment methods that are validated and recognized	92%	96%
Assessment methods used promote student learning[24]	96%	95%
Faculty members are well-qualified to assess student performance (includes student feedback)	91%	82%
Clinical instructors are well-qualified to assess student performance (includes student feedback)	79%	76%
Faculty members and clinical instructors work together to assess student performance.	74%	75%
The curriculum is monitored to prevent assessment overload	70%	64%

Relationship between assessment and learning. Ninety-five percent of faculty respondents agree that the assessment methods used promote learning. Students were not asked to comment on this question.

Assessment methods. Respondents were also asked to provide feedback on whether or not their institutions utilized five common methods of assessment, as well as to report other methods used. Table 33 summarizes these responses.

Table 33. Reported Methods of Assessment

% of Respondents Stating Institution Utilizes These Common Methods of Assessment	Tertiary	Middle-Level
Oral examinations	78%	73%
Written examinations	97%	95%
Practical examinations	88%	92%
Log books review/audit	62%	65%
Cases review/audit	39%	46%

Faculty and clinical instructors also reported utilizing clinical assessments, case presentations, projects, written reports, continuous assessment tests (CATS), and research papers to assess student performance.

Improving assessment. While much of the feedback in the assessment area is positive, data suggest that assessment could be improved in certain areas. On open-ended questionnaires, school directors, training coordinators, faculty members, clinical instructors, and students were asked how assessment could be improved. Suggestions for improvement include:

- Strategically increasing the frequency of student assessment to ensure competency acquisition (i.e., after each module or rotation or even continuous assessment). As one middle-level student wrote, "I have been only assessed once in the five areas – medicine,

[24] Students were not asked to share their beliefs regarding the link between assessment and learning.

surgery, pediatrics, reproductive health, and community health. Surely this is too little. It should be at least three times by third year."

- Having faculty and clinical instructors help students understand what to expect by:
- Conducting exams and other assessments at the time promised and within the recommended period to reduce student stress. Another student shared, "honestly we haven't done any exam for the last 8 months we have been here because of insufficient staff to organize the exam.
- Ensuring that sufficient resources are in place to assess practical aspects of training
- Increasing the number of faculty and clinical instructors so that students get more guidance and feedback during clinical training
- Having lecturers follow up in hospitals to see what students are learning in clinical rotations and ensure that it is connected to what is learned in the classroom
- Increasing cooperation between faculty and clinical tutors
- Where necessary, training clinical instructors how to assess students, including how to treat students respectfully during practical training and assessment
- Reducing cheating and favoritism which leads to low morale:
- Monitoring exams better to prevent cheating (including use of phones and students '*mwakenya*' or hidden notebooks)
- Having exams graded by external graders (examiners) to avoid favoritism
- Employing more lecturers so students can have more one-on-one time
- Engaging students to use peer and self assessment methods
- Considering group assessments
- Allowing students to appeal grades if there are disputes
- Removing harassment from assessment (i.e., faculty members who use threats should be reprimanded)
- Providing more resources (i.e., books, reagents in the lab) so that students can learn and demonstrate their knowledge effectively.

Knowing how to receive constructive feedback and participate in peer and self-assessments is also critical for students to be able to provide high-quality health care after they graduate. In fact, the MoH has already implemented supportive supervision in Kenya which facilitates collective problem solving for effective delivery of health services and incorporates feedback and self-assessment elements. By learning these skills during pre-service training, students will be better prepared for the health care workforce.

Students. Meeting quality standards related to students requires that: a training institution has a policy on student admission and that this policy clearly states the process for selecting students,

student intake is defined and related to the capacity of the training program, the faculty/department has a system of student support and counseling, and the faculty/department has a policy on student representation that allows students to participate in the design of the curriculum and other relevant matters. Participants in the PNA were asked to provide feedback on how well their training institutions met these standards. They were also asked to give feedback on the adequacy of counseling programs, support received from staff, respect shown by staff and students, and whether or not student organizations were encouraged and supported.

Table 34. Admission Policy and Selection

Area	Tertiary	Middle-level
There is a student admission/selection policy in place	100%	96%
The admission policy clearly states the process/procedure of student selection	100%	92%
The admission policy is applied in a fair manner	93%	75%

Admission policy and selection. As Table 34 shows, results in this area are generally positive, with 75% or more school director, training coordinator, and faculty member respondents agreeing that their institutions have a student selection policy and that the admission policy clearly states procedures for selecting students. During the facility audit, representatives from 100% of tertiary institutions and 84% of middle-level institutions said that a copy of the admission policy was available. However, as with other policies, the research team members reported not being able to copy/collect the actual policies.

A majority of school directors and faculty members indicated that the student selection policy is applied in a fair manner. However, "fair" was not further defined and therefore was open to interpretation. The fact that tertiary respondents are much more confident (93% vs. 75%) than their middle-level counterparts that the admission policy at their institutions is applied fairly is concerning. Breaking down middle-level responses further indicates that 97% of the school directors agree that the admission policy is applied in a fair manner, while 77% of training coordinators and 70% of the faculty members agree with this statement. Fifteen percent (15%) of the middle-level faculty who responded to this question said they are not sure if the admissions policy is applied in a fair manner and 14% disagree that application is fair. This suggests opportunities exist for middle-level institutions to work with faculty to uncover and redress concerns about fairness and/or communicate admissions decisions more transparently.

Student intake. School directors, training coordinators, and faculty members were asked about student intake and the relationship between intake and capacity of the academic program at all levels. Seventy-one percent (71%) of all respondents agreed that student intake was defined and related to capacity, indicating this as an area of concern warranting further investigation. Respondents were not asked to comment on this question further on quantitative questionnaires. However, during interviews, school directors said that allocation of accommodation facilities, career stereotyping for specific genders (i.e., males are more likely to

apply for clinical officer programs than nursing programs), and regional parity with regard to gender could affect student admission.

Student support and counseling. Faculty members were also asked if the faculty had a system of student support and counseling and if that program adequately addressed students' needs. Results are presented in Table 35 below. While results from tertiary institutions meet or exceed the 75% threshold, results from middle-level institutions indicate that students are not adequately supported at this level.

Table 35. Student Support and Counseling

Area	Tertiary	Middle-level
The faculty has a system of student support and counseling	81%	67%
The counseling program adequately addresses the social and personal needs of students	82%	72%

Student representation. One hundred percent (100%) of tertiary school directors, 81% of tertiary training coordinators, and 69% of tertiary faculty members said that there was a policy on student representation in their institution that allows students to be involved with the management and evaluation of the curriculum and other relevant matters. In comparison, 55% of middle-level school directors, 48% of middle-level training coordinators, and 38% of middle-level faculty said this policy existed in their institution. Another 9% of tertiary and 12% of middle-level respondents weren't sure if a policy was in place. These findings suggest that tertiary institutions are more likely to have supportive policies in place for student representation. Furthermore, the differences in response rates between school directors, training, coordinators, and faculty members suggest that in those instances where policies are in place, more information about either the existence of the policy or its application needs to filter down from school directors to other members of the faculty, and even to students.

Student activities and organizations. Students and faculty were asked to comment on whether or not student activities and student organizations are encouraged and facilitated at their institutions. As shown in Table 36 below, responses from school directors and other faculty members are more positive than those from students whose collective responses fall below the 75% threshold. Additionally, 10% of students at tertiary institutions and 9% of students from middle-level institutions said they weren't sure if student organizations and activities were encouraged. These data suggest that a gap exists between what school leaders believe and what students are experiencing in this area.

Table 36. Student Activities and Organizations Encouraged

% of respondents who agree student activities and student organizations are encouraged and facilitated at their institution	Tertiary	Middle-level
School Directors	83%	97%
Training Coordinators	100%	87%
Faculty Members	90%	80%
Students	70%	58%

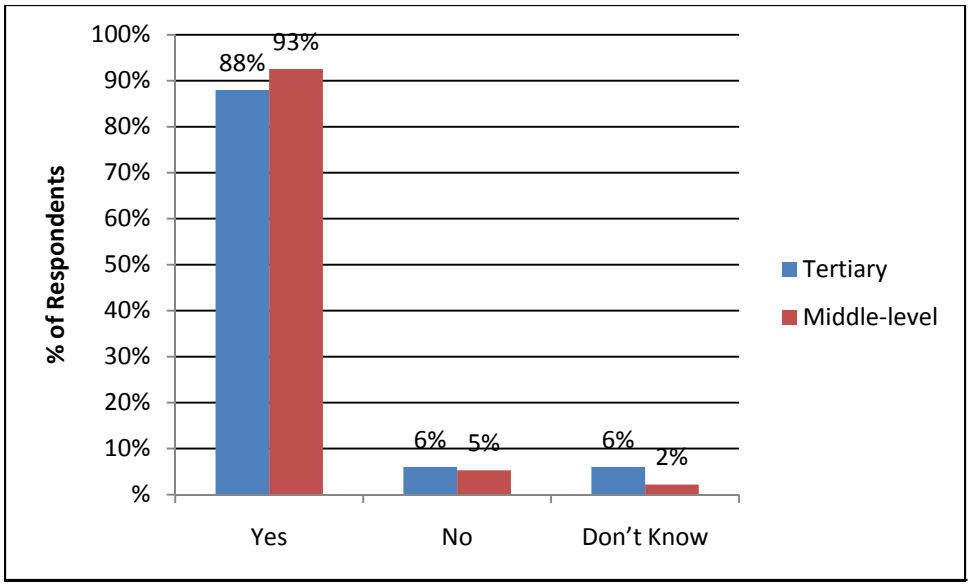
Gender. Under this section students were asked to respond to the statement, "My learning opportunities are limited by my gender" and members of separate male and female student focus groups were asked to explain how gender affects their learning opportunities. School Directors and representatives from Ministries of Health and regulatory bodies were also asked in interview to comment on the gender-based challenges that students face in the health care training system. Data gathered in this area is reported under Training Institutions: Equal Opportunity for Women and Men (see below).

Program evaluation

Per adapted WHO Guidelines, the faculty/department must have a system for monitoring student progress and attrition and have a mechanism for monitoring the curriculum and student's progress in the academic program. The faculty/department must regularly obtain and use feedback from teachers and students; analyze student performance in relation to the curriculum, mission and objectives; and regularly involve stakeholders in evaluation of the academic program.

Most faculty and training coordinators surveyed agreed that their institutions have systems in place for monitoring student progress in the academic program (see Figure 52). Seventy-eight percent (78%) of faculty respondents also agreed that student performance is analyzed in relation to the curriculum, mission, and objectives of the institution.

Figure 52. System for Monitoring Student Progress and Attrition in Place



However, when training coordinators, faculty members, and clinical instructors were asked if the faculty/department regularly obtains and uses feedback from various stakeholders in updating the educational program as required by the basic standard, none of the agreement levels met the 75% threshold (see Table 51).

Table 51. Faculty/department Obtains and Uses Feedback

% of Respondents who Agree:	Tertiary	Middle-level
Faculty/department regularly obtains feedback regarding the educational program from teachers	69%	74%
Faculty/department regularly uses feedback regarding the educational program from teachers	61%	69%
Faculty/department regularly obtains feedback regarding the educational program from clinical instructors	70%	65%
Faculty/department regularly uses feedback regarding the educational program from clinical instructors	59%	62%
Faculty/department regularly obtains feedback regarding the educational program from students	67%	67%
Faculty/department regularly uses feedback regarding the educational program from students	51%	53%

Less than 75% of total sampled respondents agreed that stakeholders are involved in evaluation of the academic program (Figure 53). When asked about stakeholder involvement, the Ministry representative who answered this question disagreed. Of the three regulatory representatives who responded to this, one agreed, one disagreed, and one was note sure.

Figure 53. Faculty/Department Involves Stakeholders in Evaluation of Academic Program

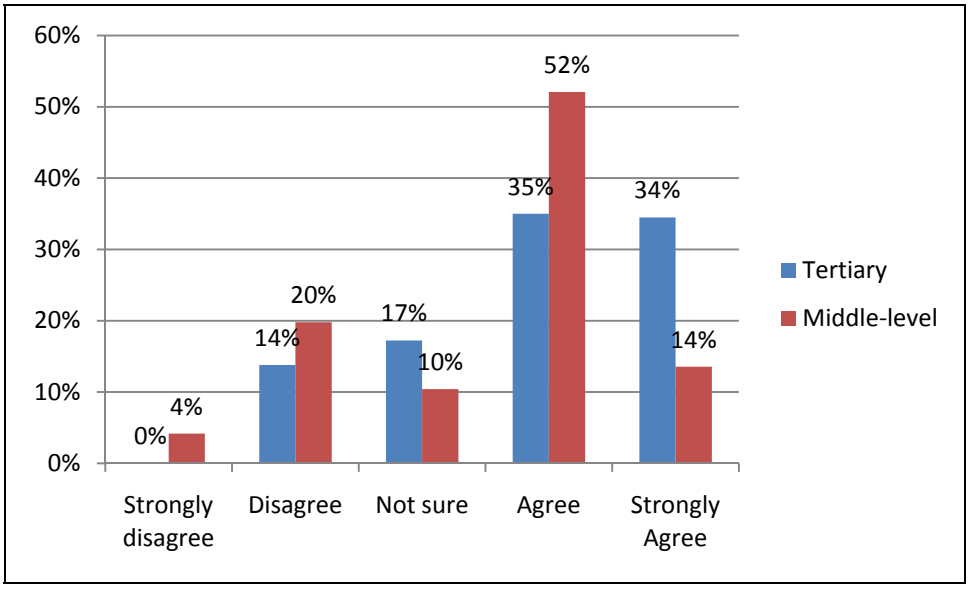
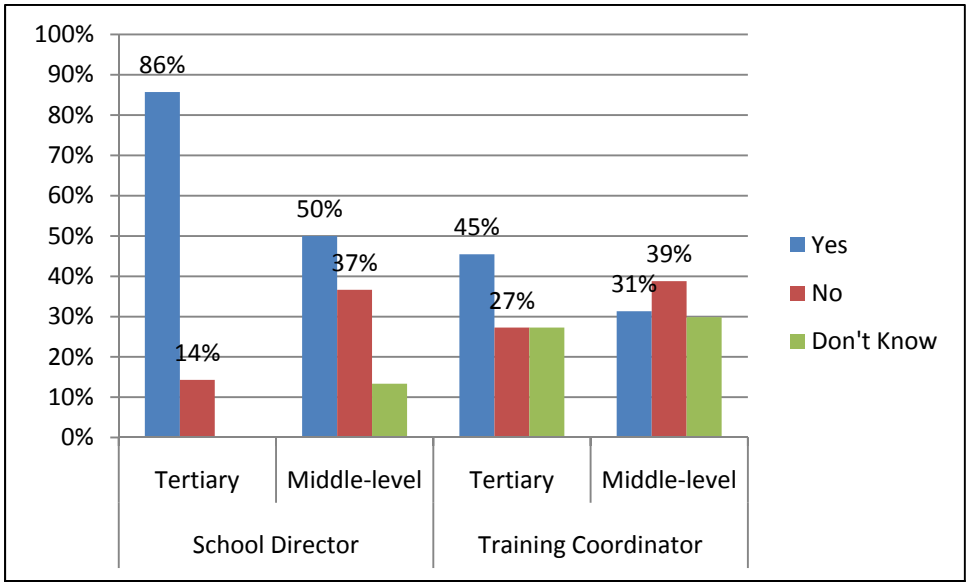


Figure 54. Program Evaluation Data Shared with Stakeholders



Institutions should share program evaluation data with their stakeholders. Figure 54 shows how school directors and training coordinators responded to the statement, "Program evaluation data is shared with a wider group of stakeholders, including educational and health care authorities, community representatives, or professional associations." As indicated, school directors from tertiary and middle-level institutions agreed with the statement more frequently than training coordinators. However, only responses from school directors meet the 75% threshold level. The one ministry representative that answered this question did not know if program evaluation data was shared. As with the previous question, responses from regulatory representatives were evenly divided between "yes," "no," and "don't know." Responses in this area support the findings that linkages between stakeholders in the health care training system in Kenya are not as strong as they should be to support high-quality education.

Governance and administration (leadership, management and administration)
In Kenya, emphasis on good governance and leadership is a priority policy agenda, and this is applicable to health training institutions. Data from the PNA indicate that health care training institutions need to address gaps in several areas in order to meet governance and leadership standards according to WHO Guidelines.

Organizations meeting this standard should have strong internal controls, including:

- Well-defined governance structures and functions in the department showing how the department is connected to the school/institution.
- Faculty/departments with a clear line of responsibility and authority for designing or reviewing the curriculum
- A dedicated budget for designing and reviewing the curriculum that faculty/departments control

- Faculty/departments with sufficient administrative staff to support implementation of the academic program.

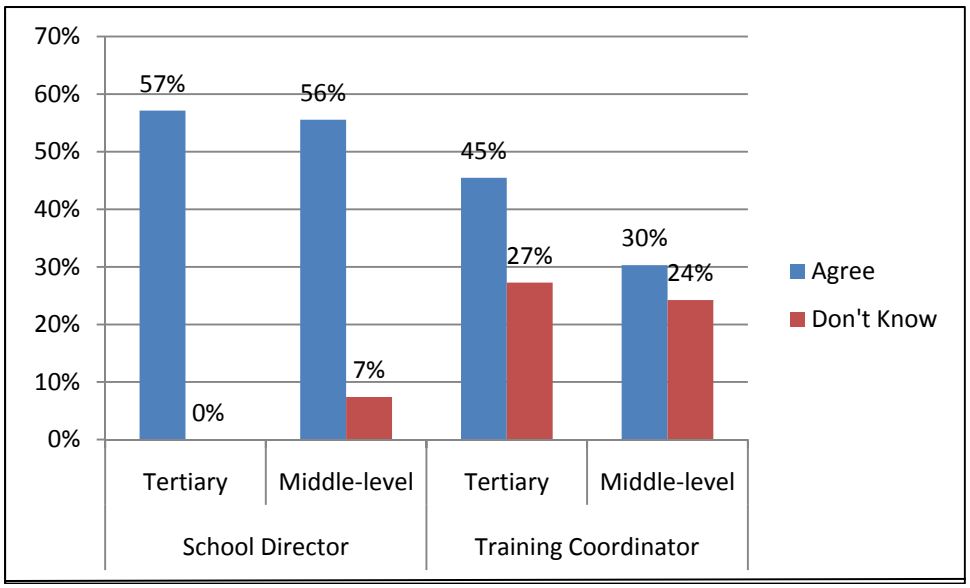
To strengthen governance, faculties/departments should also maintain strong relationships with the health and health-related sectors, including government. Under this area, respondents were also asked to comment on the institution's interactions with the community as well as give feedback on the support that ministries and regulatory bodies provide to training institutions. Internal controls and systems. Ninety percent (90%) of respondents at tertiary and 82% at middle-level institutions agreed that there is a well-defined structure of governance in place at their institutions. In addition, 81% of participants from tertiary institutions agree that strategic planning is based on the organization's mission. All other agreement levels, as shown in Table 52 below, fall below the 75% threshold and are thus areas of concern.

Table 52. Concerns over Governance and Leadership

% of Respondents that Agree that:	Tertiary	Middle-level
There is a well-defined structure of governance in place	90%	82%
Strategic planning is based on the organization's mission	81%	72%
Academic leadership is evaluated with respect to achievement of mission and objectives	63%	64%
The faculty/department has a dedicated budget for curriculum/research	42%	28%
The department has sufficient administrative staff	71%	44%
The institution regularly updates its policies based on analysis	70%	54%

Figure 55 shows responses from school directors and training coordinators to the statement "The faculty/department can direct the departmental budget as needed." All agreement levels are below the 75% threshold, identifying this as an area of concern.

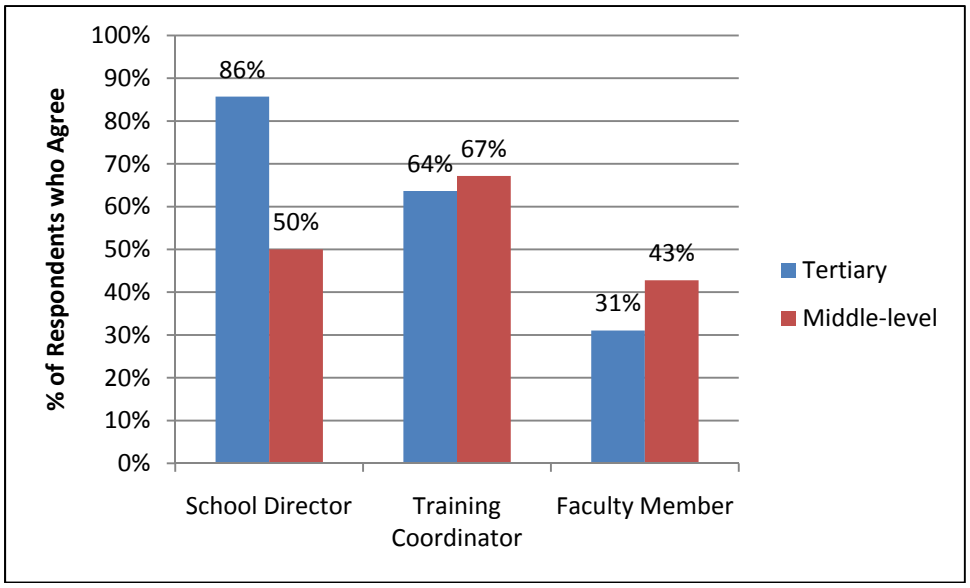
Figure 55. Department can Direct Budget as Needed



External relations. School directors and training coordinators agreed that their school/institution has formal relationships/agreements with the health and health-related sector that support the mission of the school (76% agreement) and that their faculty/department maintains strong relationships with these sectors (80% agreement). However, only one of five Ministry and regulatory respondents interviewed agreed with each of these statements. Qualitative data also highlights some of the challenges related to involvement of stakeholders. As an example, clinical instructors reported there are "limited opportunities for deliberation among stakeholders."

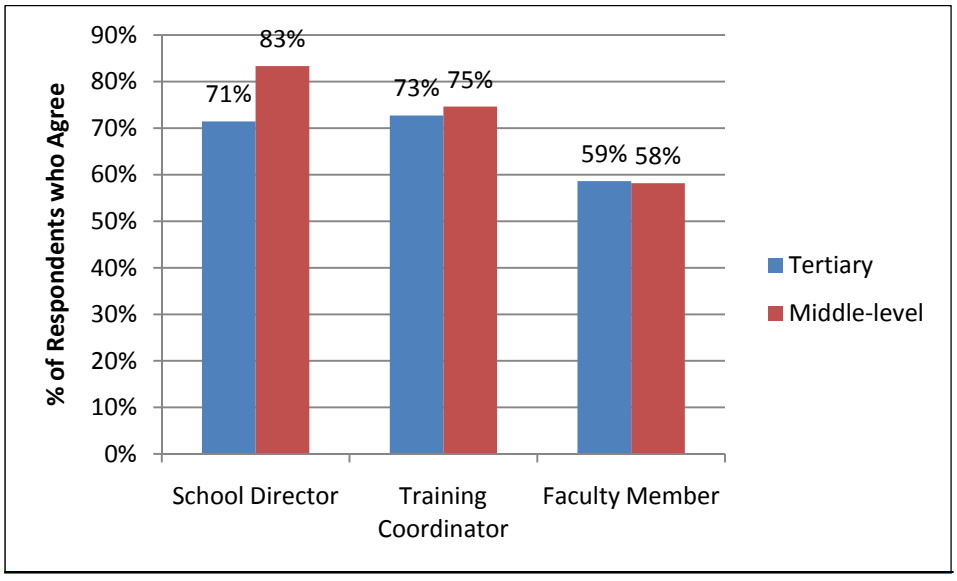
Figure 56 below shows responses from various respondents to the statement "The Ministries of Health provide positive support for health worker schools/training institutions." "Positive" was not further defined. School directors from tertiary institutions reported the highest levels of agreement among school respondents. Of four Ministry and regulatory respondents who completed this question, two agreed and two checked "don't know" suggesting that even among key health care leadership the level of support provided by Ministries to health care institutions is not clear to all stakeholders.

Figure 56. Ministries of Health Provide Positive Support for Health Worker Training Institutions



Respondents were also asked if regulatory bodies and professional associations provide positive support to training institutions. Figure 57 below presents responses from school directors, training coordinators, and faculty members. Responses from Ministry and regulatory respondents were mixed with two "yes", one "no" and one "I don't know."

Figure 57. Regulatory Bodies Provide Positive Support to Health Worker Training Institutions



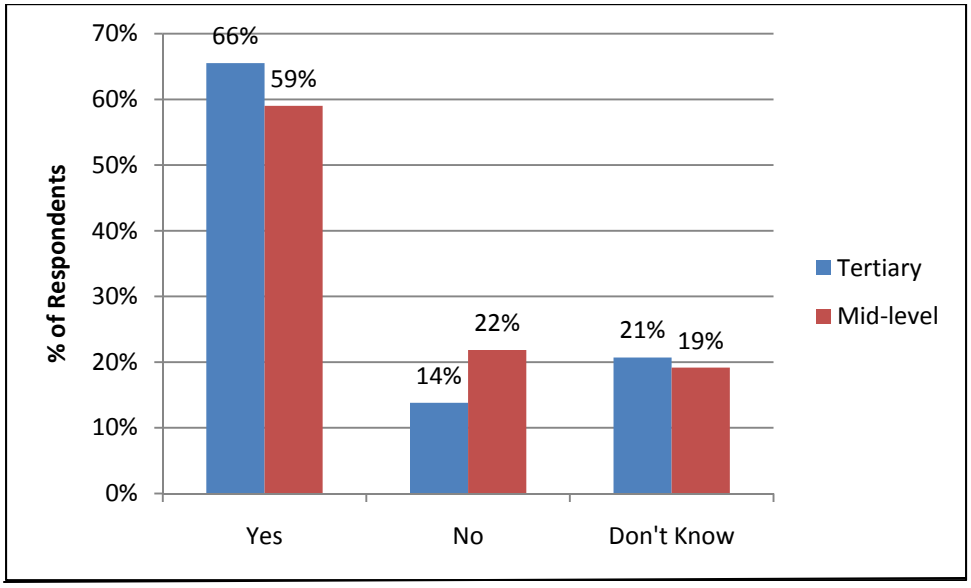
School directors, training coordinators, faculty members, clinical instructors, and students were asked to respond to the statements: "The faculty/department/school has constructive interactions with the representatives of the communities it serves" and "My school encourages social responsibility in the community." While 83% of tertiary and 73% of middle-level

respondents agree that their school demonstrates social responsibility, 61% agree that their institution has constructive interactions with the community it serves. These data suggest this as an area worthy of further study.

Continuous renewal

The final standard area suggested by the WHO Guidelines, the renewal standard, requires that institutions have programs and procedures in place to regularly review and update its structure and functions and correct deficiencies. This standard is in addition to the requirement that institutions have regular processes in place for updating the academic program. Sixty-six percent (66%) of tertiary and 59% of middle-level respondents agree that their institution has procedures for regular review and updating of its structure and functions. When combined with data suggesting that institutions do not fully involve faculty, staff, and stakeholders in the program evaluation, these findings support the overall conclusion that system linkages are not as strong as they should be.

Figure 58. Structure for Continuous Renewal in Place



Climate of respect. In self-administered questionnaires, students and faculty were also asked to indicate their agreement with the following statements:

- "Students demonstrate respect for each other."
- "Students demonstrate respect for faculty and staff." [Note: clinical instructors were also asked to respond to this statement]

Results in this area are very positive. Ninety-three percent (93%) of respondents from middle-level institutions agree that students demonstrate respect to faculty and staff. Overall, 90% of these respondents also agree that students demonstrate respect to each other. Interestingly, school directors (95%) and students (93%) were more positive than those from training coordinators (89%) and faculty members (83%).

Academic staff and faculty

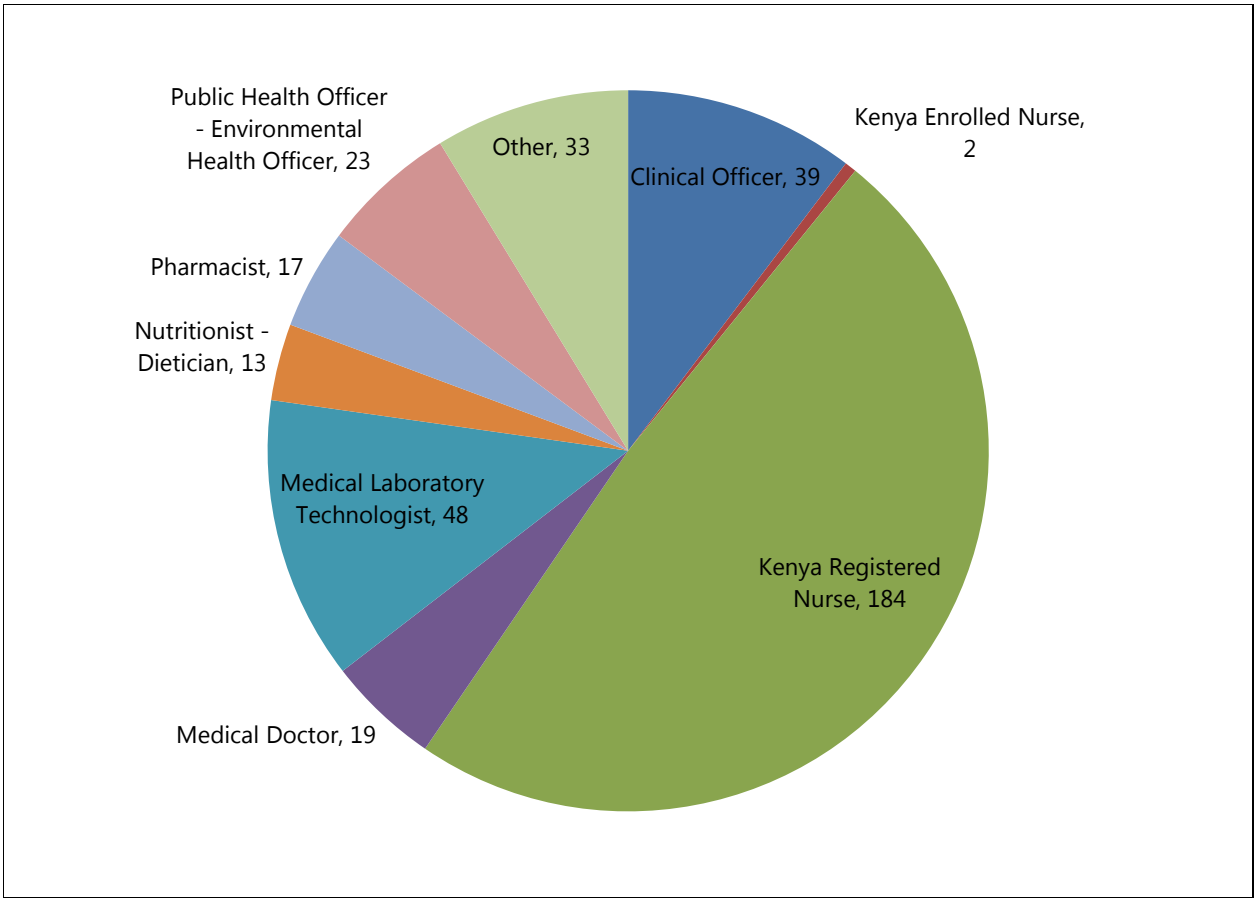
All training institutions must have a faculty recruitment policy that outlines the number of staff required by type, the appropriate balance of faculty and staff needed to meet the objectives of the institution; the responsibilities of faculty and staff by type; and the scheme of service. Policies and procedures must also be in place to support faculty members, including clinical instructors, in their roles. In addition to these standards, respondents were asked to comment about faculty qualifications, participation in teacher training, and development activities; support received from the training institution; respect that faculty members demonstrate for each other and students; faculty participation in research and publishing; as well as job descriptions and performance assessment for faculty members. Under this area, clinical instructors were also asked to respond regarding the adequacy of training they receive, satisfaction in their roles as clinical instructors, and their opportunities for promotion and advancement. Results in this area are presented below following a presentation on demographics of sampled faculty.

Demographics of sampled faculty. When completing self-administered questionnaires, faculty, school directors, training coordinators, and clinical instructors provided considerable demographic information as shown in Figure 28 through Figure 33 below.

Respondents by cadre

Faculty respondents were asked to self-identify the cadre to which they belong. A breakdown of numbers of respondents by cadre is shown in Figure 28. Representation by cadre is highest among nurse and includes 184 Kenya registered nurses and two Kenya enrolled nurses. Although some students reported already having qualified for a cadre (including nursing), all student respondents are reported as "N/A-currently a student" and are not included in the graph below. Client respondents are also excluded in these data.

Figure 28. Faculty Respondents by Cadre



Respondent registration with registering body

Ninety-five percent (95%) of faculty who responded to the question, indicated that they were registered with a Kenyan regulatory body. Those who indicated that they were not registered included one Kenya registered nurse, two nutritionists, and seven public health officers. Although five of the regulatory bodies have regulatory mechanisms in place, the Kenya Nutritionists and Dieticians Council was recently established and is still establishing its systems, including registration. At present there is no regulatory body for public health officers. Rather, there is an affiliated association in place that currently manages registration. As expected from the high percentage of nurses in the respondent pool, the majority of respondents indicated that they were registered with the NCK.

Current department, role, and preparation for teaching of sampled faculty

One hundred fifty-four (154) respondents of the sampled faculty currently teach in the nursing department of their institutions (see Figure 29). Lecturers, tutors and clinical instructors are the most widely represented in the sample. In both tertiary and middle-level institutions, the majority of faculty has five or fewer years in their current teaching role (Figure 31).

Figure 29. Current Teaching Role

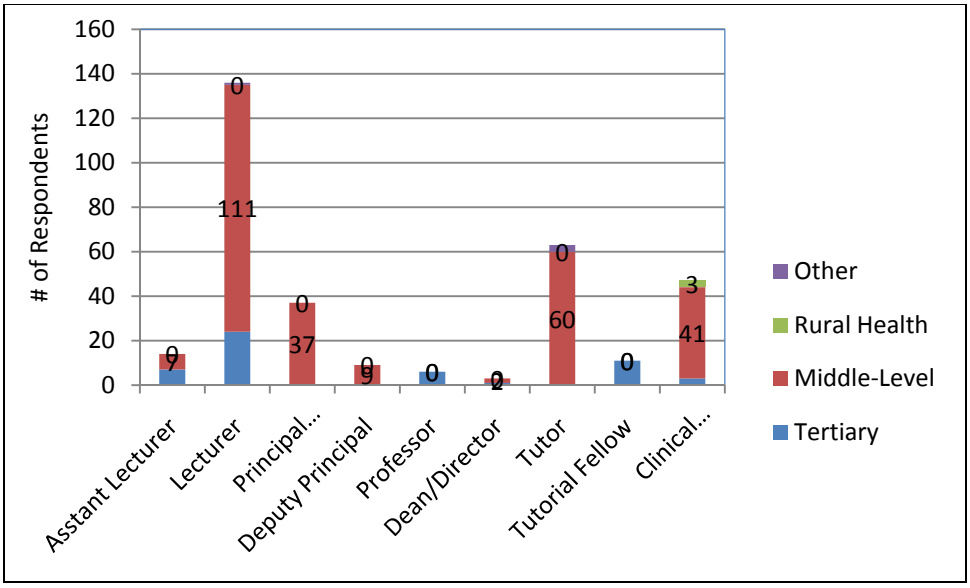


Figure 30. Areas of Current Teaching/Clinical Instruction

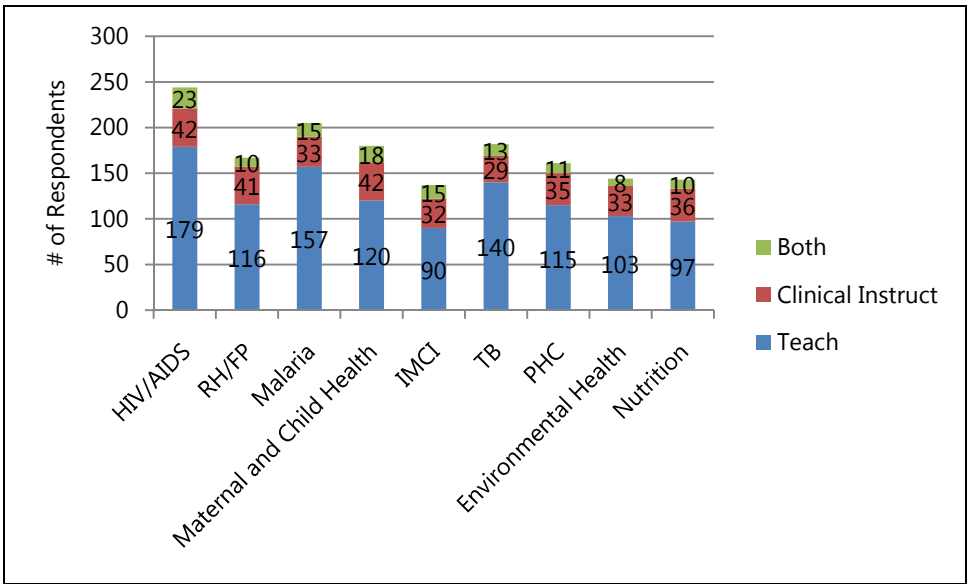
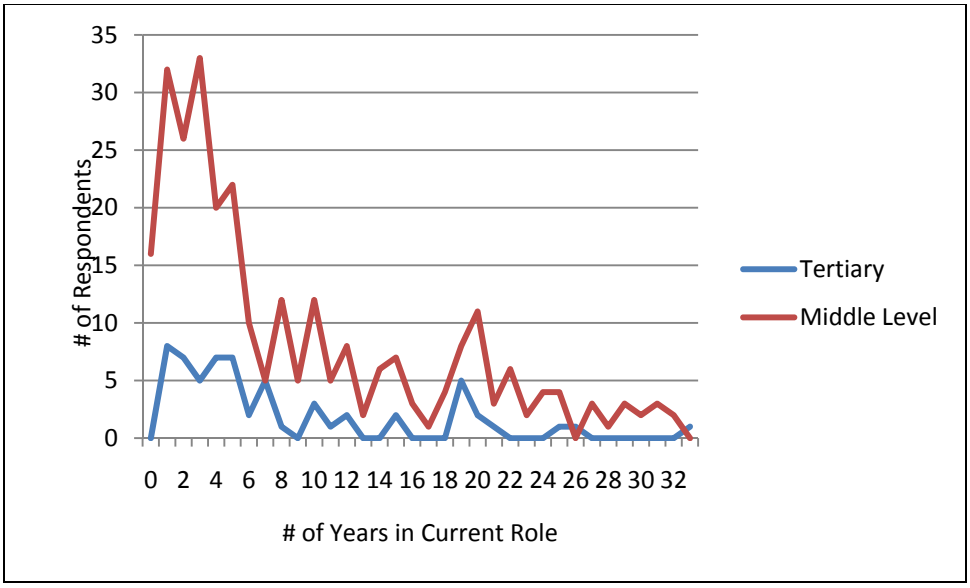


Figure 31. Number of Years in Current Role



Most of the faculty in middle-level institutions has higher diplomas or bachelor/basic degrees while faculty from tertiary institutions tends to have doctorates or bachelor/basic degrees. Interestingly, none of the middle-level faculty reported having a doctorate degree. Figure 33 shows the areas in which faculty have been trained within the past three years.

Figure 32. Highest Level Qualification of Sampled Faculty

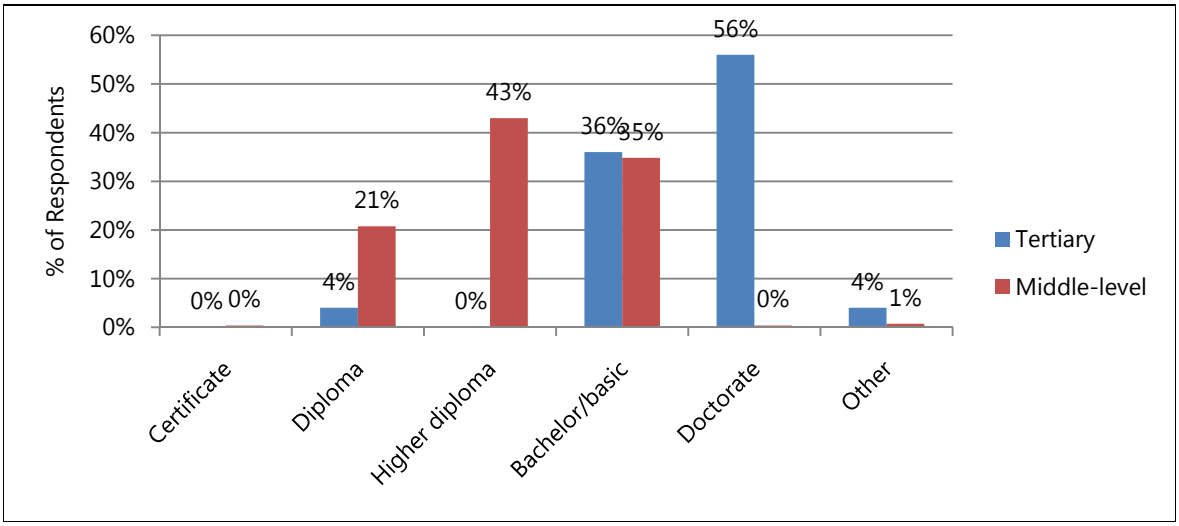
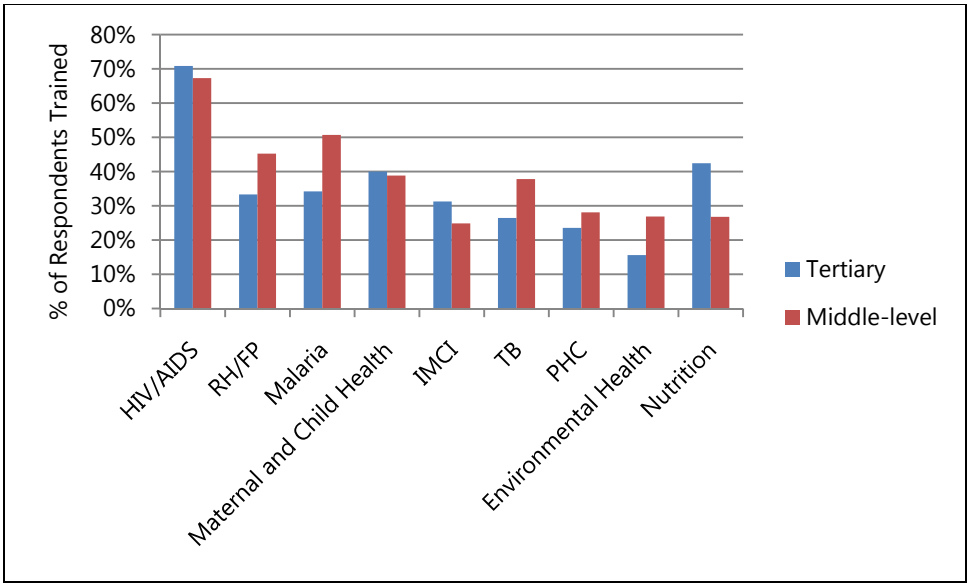


Figure 33. Areas that Faculty have been Trained in during Past Three Years



Recruitment policy. Table 37 displays responses from school directors, training coordinators and faculty members related to the institution's recruitment policies.

As shown in Table 37 three responses from middle-level respondents and one response for tertiary level respondents are below the 75% threshold. Although 16% of tertiary and 28% of middle-level respondents said they did not know if a policy was in place, these responses were primarily from faculty members and training coordinators; school directors expressed higher levels of confidence with 81% overall agreement, suggesting that other respondents may not be involved in recruiting and therefore may not know about policies. As with other policies, data collectors reported that training institutions would not release policies on faculty recruitment.

Table 37. Faculty Recruitment Policy

% of respondents who agree:	Tertiary	Middle-level
There is a faculty/trainer recruitment policy in place	84%	55%
The staff/faculty recruitment policy outlines the number and staff required by type	83%	69%
The staff/faculty recruitment policy outlines the appropriate balance of faculty and staff needed to meet the objectives of the school/institution/training institution	64%	67%
The staff/faculty recruitment policy outlines the responsibilities of the staff by type	91%	80%
The staff/faculty recruitment policy outlines the scheme of service	77%	76%

When asked to describe the selection process for faculty members, school directors and training coordinators described the actual steps that universities go through to find and hire faculty members. As one female school director from a public middle-level institution described on a self-administered questionnaire: "The advertisement is done in newspaper by [organization's]

headquarters. Qualified candidates apply. They are invited for the interview. Those who qualify are selected. They are issued with letter to report to different [branches]. They are deployed in the department where they are needed."

This quote and other qualitative data suggest that, especially at training institutions with multiple branches, faculty are often recruited and hired at headquarters and deployed to training institutions throughout Kenya.

Faculty qualifications. Faculty and students were asked to respond to statements about qualifications of faculty, including those of clinical instructors. For all four areas reported in Table 38, students expressed less confidence in teachers than the faculty themselves did. Respondents also expressed less confidence in the qualifications and performance of clinical instructors than of faculty overall, with student agreement below the 75% threshold and training coordinators responses approaching that threshold. Perhaps not surprisingly, faculty members and clinical instructors both gave themselves high marks with a 94% agreement level each.

Table 38. Respondents Perceptions about Teachers and Clinical instructor's Qualifications

% of Respondents Who Agree	School Director	Training Coordinator	Faculty Member	Clinical Instructor	Student
Teachers are well-qualified and serve as positive role models	97%	90%	94%	84%	82%
Teachers demonstrate respect for students	97%	90%	95%	84%	78%
Teachers demonstrate respect for each other and other staff	95%	90%	91%	86%	76%
Clinical instructors are well-qualified and serve as positive role models for students	N/A	76%	82%	94%	68%

Table 39. Selected Support for Faculty

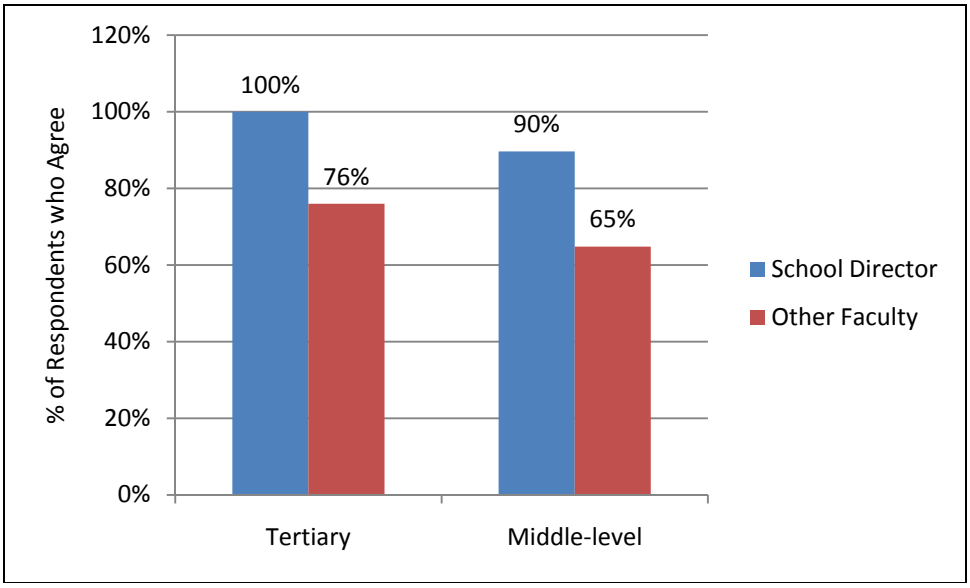
% of Faculty and Staff Respondents Who Agree that:	Tertiary	Middle-level
Faculty, staff/preceptors receive support, guidance, and mentoring in their roles.	69%	58%
Faculty/staff are encouraged to participate in teaching, research and community service	94%	82%
Faculty are encouraged to participate in teacher training and development activities	84%	68%
The institution provides financial support for faculty/trainers to attend training.	63%	47%

Table 39 shows responses to select questions about other support for faculty. Overall support for faculty and a lack of financial support for faculty/trainers to attend training both emerged as areas of concern at both types of institutions. Additionally responses indicate that faculty members at middle-level institutions are not sufficiently encouraged to participate in training and development.

Ninety-six percent (96%) of tertiary respondents indicated that faculty members are encouraged to publish articles and research results compared with 58% from middle-level institutions. Eighty-three (83%) of tertiary respondents also indicated that faculty promotion is closely linked with publishing articles and research results compared to 28% of middle-level respondents who agreed with this. These data are consistent with the more research-focused role of many faculty members at tertiary institutions.

Assessing faculty and clinical instructor performance. The basic standard in this are requires that training institutions have a performance management system in place to assess faculty performance. Figure 34 shows the percentage of school directors, training coordinators, and faculty members who agree that their institutions have a performance management system in place.

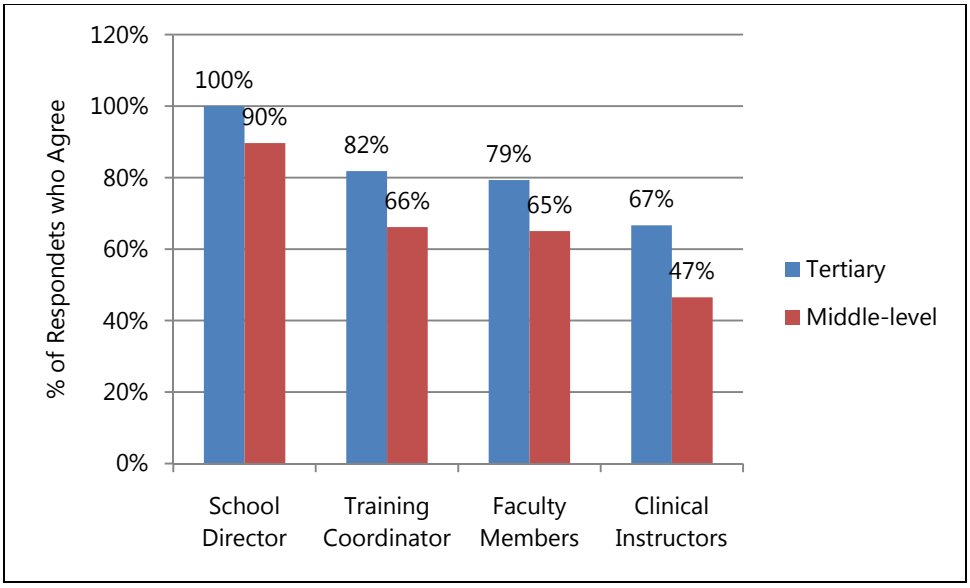
Figure 34. Institution has a Performance Management System for Faculty



Faculty members at both tertiary and middle level training institutions were not as confident as school directors that a performance management system was in place at their institution. However, 95% of all faculty respondents said that they understood what was expected of them in their current job role.

All of these respondents were also asked if they had written job descriptions. Figure 35 shows the results. Only responses from school directors from both types of institutions and faculty members and training coordinators at tertiary institutions were above the 75% threshold indicating that a crucial tool of performance management is missing for many faculty and staff at health care training institutions in Kenya.

Figure 35. Respondent has a Written Job Description



These same respondents were asked if the performance of faculty members/clinical instructors was regularly assessed. All of the agreement response levels fell below the 75% threshold, including those of school directors, suggesting that performance assessment for faculty/clinical instructors is not conducted as often as it should be.

Figure 36. Faculty Member/Clinical Instructor Performance Is Regularly Assessed

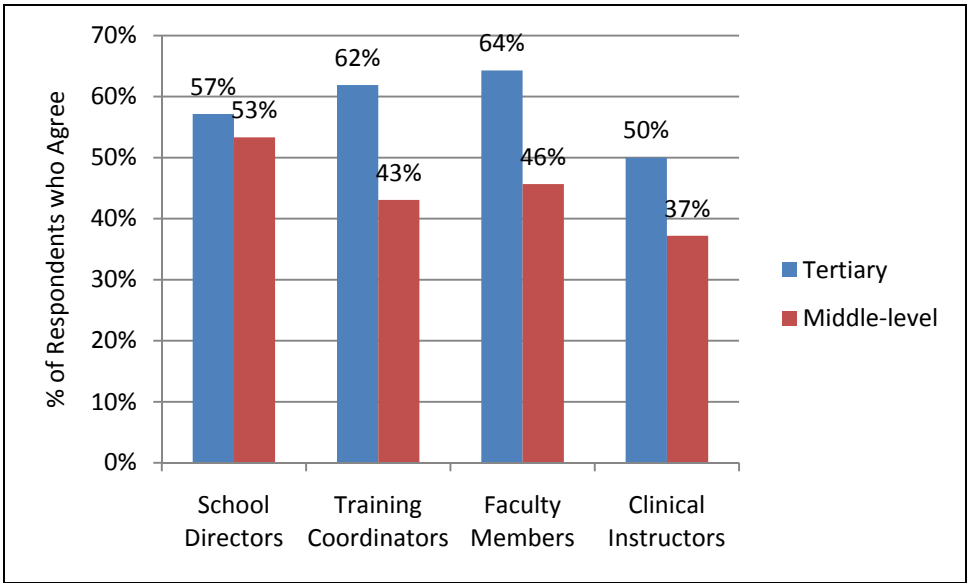


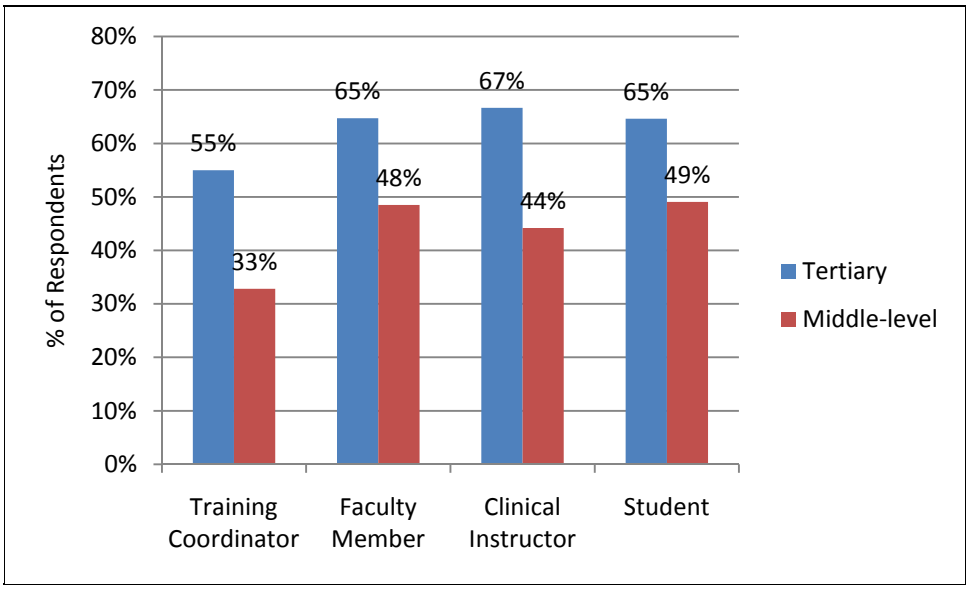
Table 40. Methods of Faculty Assessment

% of Respondent Who Agree that Faculty/Clinical Instructor Performance is Regularly Assessed Through	Tertiary	Middle-level
Student Assessments	87%	74%
Feedback from Immediate Supervisor	81%	68%
Peer Review	62%	32%

Faculty performance is most commonly assessed on an annual basis at health care training institutions; 60% of respondents reported having annual performance reviews with another 16% reporting quarterly reviews. As shown in Table 40, student assessments are the most common assessment tool used with sampled faculty. Additionally, 81% of tertiary and 67% of middle-level respondents said they receive appraisals of their job performance from their immediate supervisor.

Clinical instructors. Training coordinators, faculty members, and clinical instructors were asked about the extent to which they agreed that clinical instructors were adequately trained for their roles. None of the response rates met the threshold in this area, suggesting that clinical instructors likely need additional training to be effective in their roles. Total agreement from all respondents that clinical instructors receive adequate training was 60% from tertiary and 43% from middle-level institutions. A breakdown of responses by respondent type is shown in Figure 37 below.

Figure 37. Clinical Instructors Receive Adequate Training



In a question asked prior to this one, 71% of respondents from middle-level institutions said they thought clinical instructors were well qualified and positive role models. While being well-qualified and receiving adequate training are not necessarily equated, the fact that respondents

rated clinical instructors, especially those from middle-level institutions. below the threshold in both areas is concerning.

In addition to the clinical instructors who participated in the PNA, 105 faculty members and training coordinators reported that they were also serving as clinical instructors, suggesting that many faculty members play multiple roles in the system.

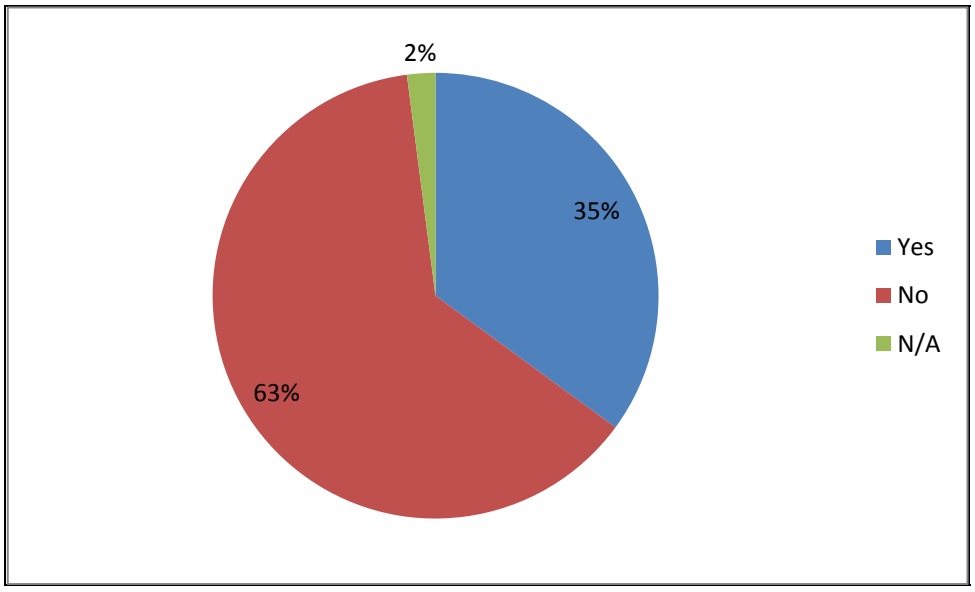
Clinical instructors, faculty members, and training coordinators were also asked to tell how they were selected as a clinical instructor. As Table 27 shows, most of the clinical instructors instruct as part of their regular duties.

Table 41. How Selected to be a Clinical Instructor

% of clinical instructors who:	Tertiary	Middle-level
Have role as part of their duties	77%	69%
Were selected by department	23%	18%
Volunteered	0%	6%
Other	0%	7%

As shown in Figure 38, 63% of the 194 faculty who responded to this question said they had no formal training for the clinical instructors they had assumed.

Figure 38. Formal Training to be a Clinical Instructor



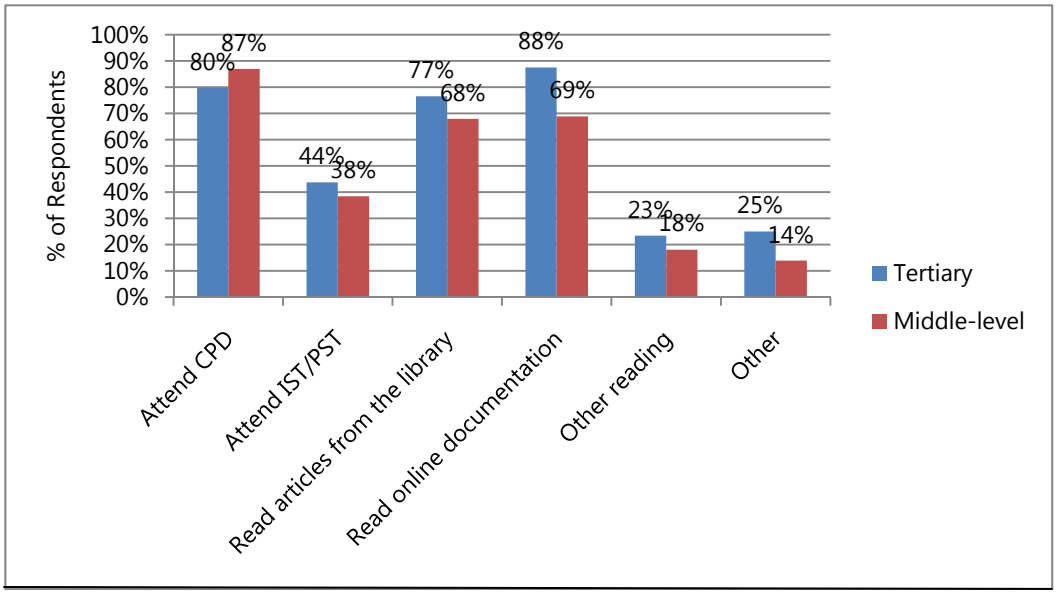
This included the highest-level qualification they had attained in teaching/training as well as the specific teaching skills in which they have received training.

Table 42. Faculty Trained in Teaching Skills

% of Faculty who Reported Being Trained in:	School Directors		Training Coordinators		Faculty Members		Clinical Instructors	
	Tertiary	Middle-level	Tertiary	Middle-level	Tertiary	Middle-level	Tertiary	Middle-level
Effective teaching skills	100%	94%	77%	75%	79%	73%	67%	47%
Curriculum design	71%	87%	68%	63%	62%	55%	50%	10%
Preparation of teaching materials	86%	81%	77%	73%	59%	64%	67%	31%
Use of a variety of student assessment methods	71%	81%	68%	64%	66%	61%	67%	29%
Use of electronic teaching/learning material	71%	65%	58%	59%	55%	49%	67%	20%
Use of online resources	86%	45%	64%	45%	45%	42%	50%	18%

The data in the table above suggests that clinical instructors and faculty members from middle-level institutions may benefit from additional training in specific teaching skills. In the aggregate these findings indicate that faculty at both levels may benefit from more support, especially at middle-level institutions. Interestingly, a higher percentage of school directors from middle-level institutions reported training in curriculum design and use of a variety of student assessment methods than their counterparts at tertiary institutions.

Figure 39. How Sampled Faculty Keep Skills Updated



Educational resources

Training institutions must provide sufficient resources for faculty, staff, and students so that the curriculum can be delivered effectively. In this regard, the Ministries of Health, in collaboration with their partners, should assure effective allocation and efficient utilization of resources to strengthen the training system to meet its targets and goals. In order to meet the basic standards in this area, the institution must have sufficient physical facilities to ensure that the curriculum can be adequately delivered. The requirement of adequacy extends to clinical placement sites as well. Institutions must also have policies that:

- Address the evaluation and effective use of ICT in the educational program
- Define the institution's research priorities
- Address the use of educational expertise in planning programs and developing teaching methods
- Address how to collaborate with other educational institutions to transfer credits.

According to respondents participating in this study, many of the institutions in the health care training system lack sufficient resources to meet basic levels of quality, especially in the areas of infrastructure and ICT. In almost all categories, respondents from middle-level institutions reported having fewer resources than tertiary institutions. Results from specific areas are presented below. Areas of concern are shaded when data is presented in tables.

Table 43. Respondents' Perceptions of Resource Sufficiency at Sampled Training Institutions

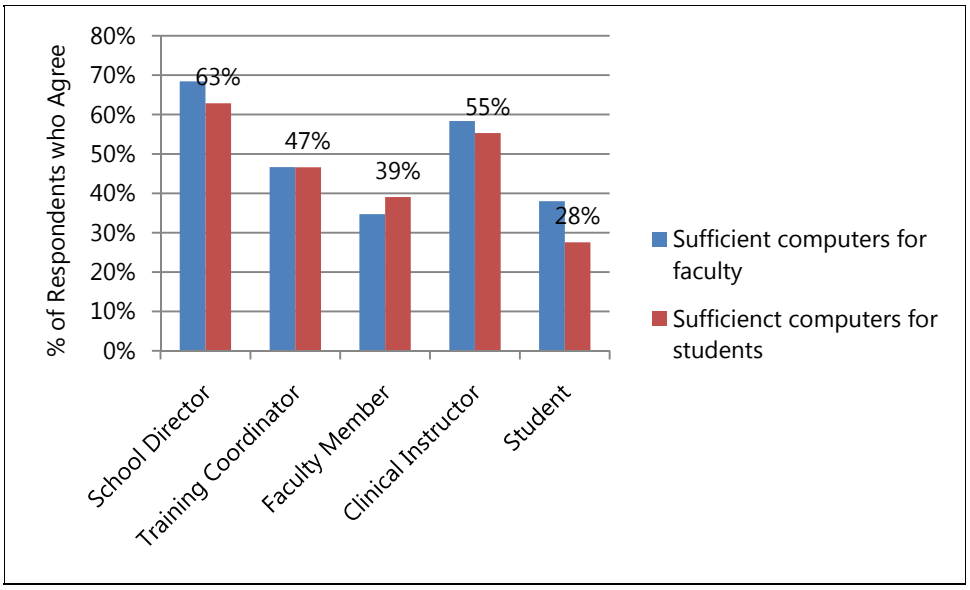
% of Respondents who Agree the Following Resources are Sufficient at their Institutions	Tertiary	Middle-level
Lecture halls	61%	36%
Classrooms	64%	49%
Research/teaching labs	51%	37%
Computers for faculty	49%	38%
Computers for students	43%	32%
Library materials overall	83%	65%
Library materials: Hard-copy reference materials	69%	63%
Library materials: Online electronic references	60%	20%
Library materials: CD-ROMs	37%	14%
Specific information materials (e.g. HIV, RH/FP, etc.)	68%	64%
Meeting facilities	68%	44%
Recreational facilities	42%	34%
Internet	71%	29%
Audio-visual equipment	60%	40%
Teaching aids	66%	65%

Physical facilities. During the institutional audit, data was gathered regarding adequacy and status of the following: lecture halls, classrooms, research/teaching labs, computers, library materials, meeting facilities, recreational facilities, Internet, audio-visual equipment, and teaching aids. Table 43 shows the percentages of faculty and students respondents who agreed that the

faculty/department had sufficient physical facilities for faculty and students to use by various types of resources.

With the exception of library materials at tertiary institutions, all other response levels are below the 75% threshold. Of note are the wide gaps between perceptions of tertiary and middle-level respondents with respect to sufficiency of online electronic reference materials, CD-ROMS, meeting facilities, and Internet. Qualitative data supports quantitative findings with respondents highlighting the lack of human resources, lecture halls, teaching labs, computers, e-resources, and recreational facilities at sampled institutions. For example, double intake, or the process of universities taking in extra students in 2010 to make up for a large backlog[25], was also cited as a contributor to the inadequacy of lecture halls. Or, as a student reported, "The number of students has overwhelmed the resources available. An example is the current first year, when late for a lecture, one has to go and look for a stool to sit on and seating may be up to the door." Another student said, "In the training institutions there [is little] equipment to be used for demonstration including insufficient reagents and laboratory machines."

Figure 40. Differences in Perceptions Regarding Computer Sufficiency

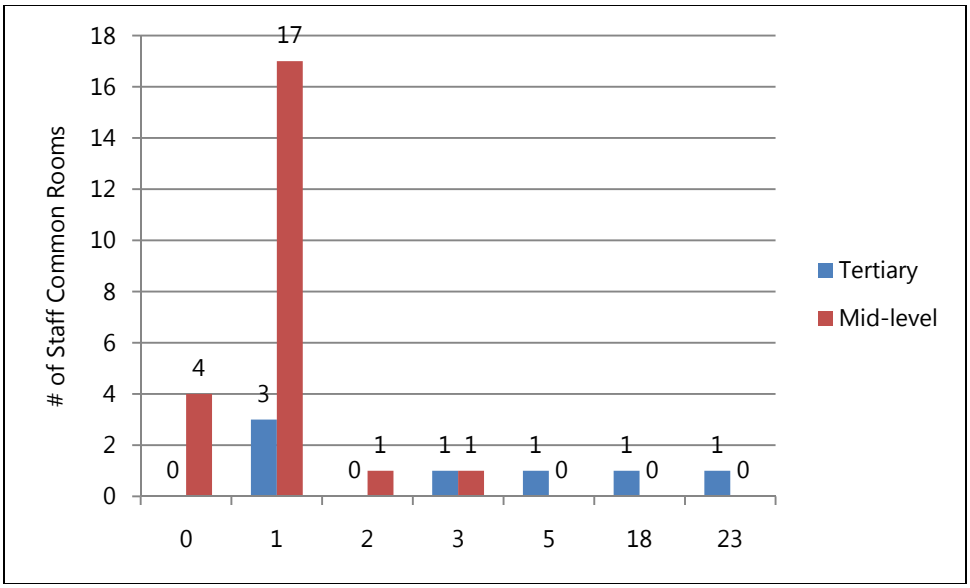


School directors consistently rated sufficiency of resources higher than training coordinators, faculty, and students. Figure 42 above provides an example showing information about the number of specific types of resources (e.g., lecture halls, classrooms, offices for faculty, libraries) available at each training institution was also collected during facility audits of training institutions. Responses varied according to size of institution surveyed and programs offered and were not measured against national standards. Tertiary institutions tended to have more resources than middle-level institutions. Figure 41 provides an example of the number of staff/common rooms reported at sampled institutions. One of the seven tertiary and 10 of 21

[25] http://allafrica.com/stories/printable/201008030741.html

middle-level institutions reported having no medical lab at all with which to train health care workers. This appears to be an area of concern.

Figure 41. Number of Reported Staff/Common Rooms at Sampled Institutions



Respondents were also asked about policies related to the use of facilities. Eighty-one (81%) percent of respondents (training coordinators, faculty, and students) from tertiary institutions and 66% from middle-level institutions agreed with the statement "the library policies (access, payment, checkout) support student learning."

Dormitories. Eighty-six percent (86%) of tertiary, 90% of middle-level, and 100% of rural health facilities (n=2) reported having a dormitory to house students. Table 44 presents data on the range and averages of responses by institution for number of students in dorms and breakdowns of male and female occupants.

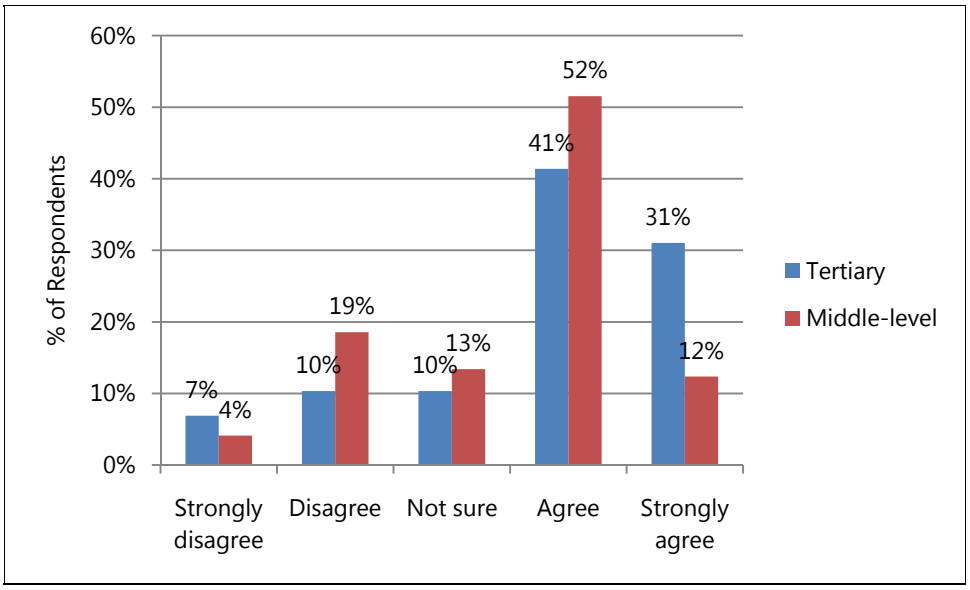
Table 44. Select Data Related to Dormitories

Statistic	Range	Mean	Median
# of students housed in dormitories (n=32)	20 to 1,800	300	190
# of males housed in dormitories (n=30)	0 to 1,060	136	68
# of females housed in dormitories (n=31)	20 to 740	180	130

Safety and security. School directors and training coordinators were asked to share opinions about whether their training institution's facilities meet legal standards and are safe. As shown in Figure 42 below, when responding to this question, 72% of tertiary respondents and 64% of middle-level respondents agree that their facilities meet standards and provide safety. During the facility audit, training coordinators were asked if their institutions provide a safe environment for staff and students. Ninety-eight percent (98%) of training coordinators agreed that their institution did provide a safe environment. The difference between responses to these

two questions suggests that training coordinators are more sure that their institutions provide a safe environment than they are if their institutions meet legal standards.

Figure 42. Facilities Meet Legal Standards and Are Safe



Even though they reported providing a safe environment for staff and students, 71% of tertiary and 35% of middle-level training coordinators reported that safety hazards exist at their institution. No emergency exit doors in classrooms and dormitories, exposed electrical wires, blocked drainage systems that attract insects, congestion in the dormitories, inadequate sanitation facilities, leaking taps, mold, and menacing dogs were mentioned by students and faculty as present safety hazards, among others.

When asked how the institution provides security for equipment and resources, institutional representatives mentioned having a security department, fences, burglar proofing, use of security firm, gates, limited alarm systems, using coding for equipment, brick walls, security checks, CCTV camera, bars on windows, security locks and uninterrupted power system backups for computers.

Clinical training resources. The requirement for sufficient resources extends to the clinical placement site as well. Training institutions must also ensure sufficient clinical experience and necessary resources to provide students with situations that relate to the student's future role and are relevant to learning outcomes. On the resource portion of the self-administered questionnaire, training coordinators, faculty members, clinical instructors, and students gave feedback on whether their faculty/department ensures adequate clinical/practical experience and resources, including providing enough sites and whether the clinical sites themselves have available resources to mentor students. The term "adequate" was not further defined on the questionnaire. Figure 43 and Figure 44 show the distribution of responses.

Figure 43. Faculty/Department Ensures Adequate Clinical Resources

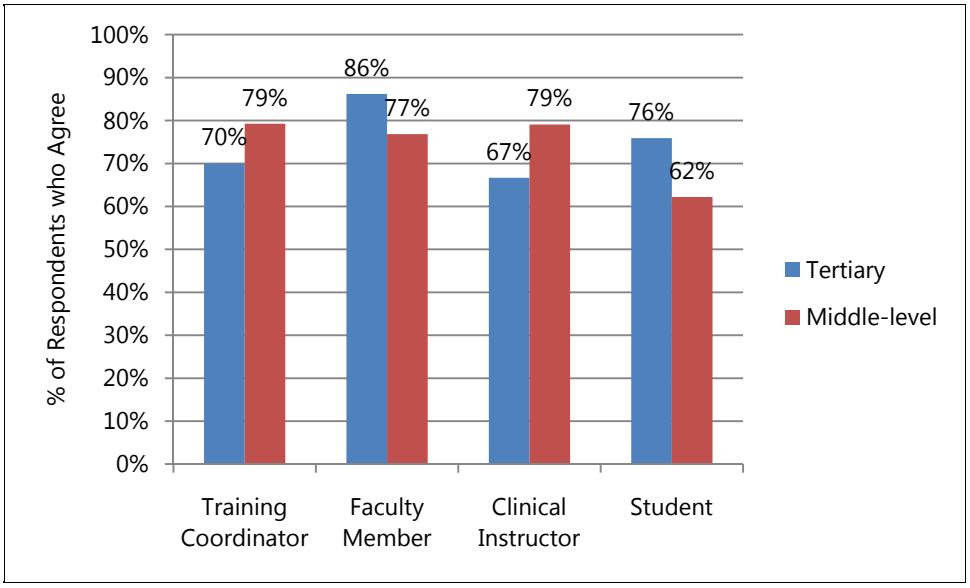
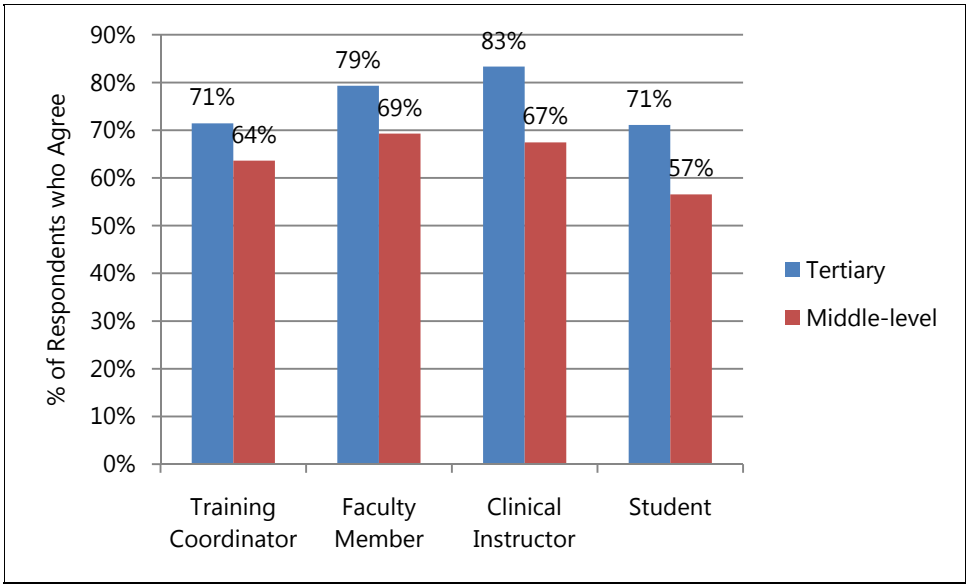


Figure 44. Clinical Sites Have Available Resources



In Figure 43 above, respondents agreed that their faculty ensured adequate clinical resources. However, as reported in Figure 44, training coordinators and students from tertiary, as well as all respondents from middle-level institutions, do not sufficiently agree that clinical sites have adequate resources. This finding is consistent with the resources shortages at clinical sites highlighted in the educational program section above. An example of a resource shortage provided by a student is having to buy your own gloves at a hospital if you are a student. Other students reported not having enough equipment and supplies to learn procedures and/or demonstrate these to clinical instructors.

In the facility audit, each institution was asked to report on the number of clinical placement sites by type (hospital, health facility, private clinics, rural health care centers, etc.). Responses varied by type of institution and program offered. (Note: not all cadres are trained at middle-level institutions, for example, medicine.) Table 45 highlights the types of institution where training institutions send their students for clinical placements by program. Hospitals, health centers, and rural health facilities are most often utilized for clinical placements; only one tertiary institution reported sending students to a private clinic. District hospitals are included in the "hospital" category below.

Table 45. Clinical Placement Sites Used by Sampled Training Institutions

Faculty/Department	Hospital	Health Center	Private	Rural Health	Other
Medicine	T/M*	T		M	
Nursing	T/M	T/M	T	T/M	T/M
Medical Lab Sciences	T/M	M		M	M
Clinical Medicine	T/M	T/M		T/M	M
Pharmacy	T	T			
Pharmacy Technology	T				M
Environmental Health/Public Health	T/M	T/M		T	
Nutrition	T				

*T=Tertiary, M=Middle-level

Of these, 84% percent of tertiary and 68% of middle-level institutional respondents reported that they have established criteria for selection of clinical training sites. Criteria utilized are reported in Table 46.

Table 46. Clinical Training Site Selection Criteria

% of Sampled Training Coordinators who Reported the Institution Utilizes the Following Criteria to Select Clinical Training Sites:	Tertiary	Middle-level
Student/intern ratio[26]	47%	49%
Student/supervisor ratio	52%	52%
Established norms and standards for clinical practice	43%	43%
Established norms and standards for equipment	43%	43%
Identified instructional objectives	62%	62%
Distance between sites and school/institutions	43%	35%
Acceptable case load to meet learning objectives	52%	38%

The CHE recommends that medical and allied sciences programs should have a ratio of one faculty to seven students both in the classroom and in the placement site[27]. When asked how the criteria for # of students/site and per supervisor for clinical placements, institutions reported an average of 8.2 students/site and 6.9 students/clinical supervisor. When asked how many students they currently teach on average per class, faculty reported currently teaching between

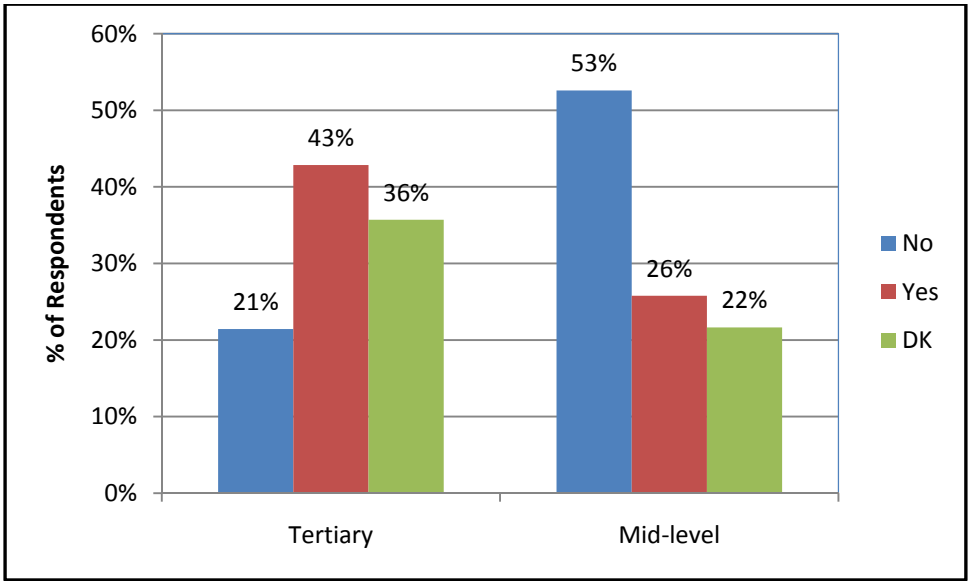
[26] Not all institutions have interns.

[27] Commission for Higher Education: Handbook on Processes for Quality Assurance in Higher Education in Kenya. August 2008. p.60

one and 500 students in each class (mean=45, med median=35. Clinical instructors reported currently precepting between one and 500 students each (mean=51, median=18). Additionally, middle-level institutions reported acceptable ratios for students/clinical supervisor as high as high as 20/1. Qualitative data from students also indicates that overcrowding of clinical placements is a real concern among students. Both the means and medians for these responses exceed the CHE recommendation levels and support findings from student focus groups that class sizes are perceived as too large and that more faculty and clinical instructors are needed to help students learn effectively.

Students, training coordinators, clinical instructors and faculty members shared their views on whether clinical training sites are located within an acceptable distance from the school/institutions; 81% of students agreed that they were.

Figure 45. School has a Policy that Addresses Evaluation and Effective Use of ICTs



Information technology and communication. Information communication and technology (ICT) plays an important role as a key resource in health training institutions. ICT not only helps distribute training materials effectively[28], which can be accessed by students and faculty in different geographical areas, but they also provide an alternative and innovative mode of delivery of education and for research. ICT enables information to be stored in various formats, which can be accessed by more students and staff. School directors and training coordinators were asked to say whether they believed their institution has a policy that addresses the evaluation and effective use of ICT. As Figure 45 shows, 44% of tertiary and 27% of middle-level these respondents agreed that their institution has this type of policy, indicating that a substantial percentage of faculty at both types of institutions may not be fully informed about policies in use or fully-involved in policy making and updating.

[28] The World Health Report 2006; Preparing the health workforce p. 54

Seventy-five percent (75%) of faculty at tertiary and 46% of faculty at middle-level indicated they had ready access to ICT resources. Similarly, 66% of sampled students at tertiary and 48% at middle-level had ready access to ICT.

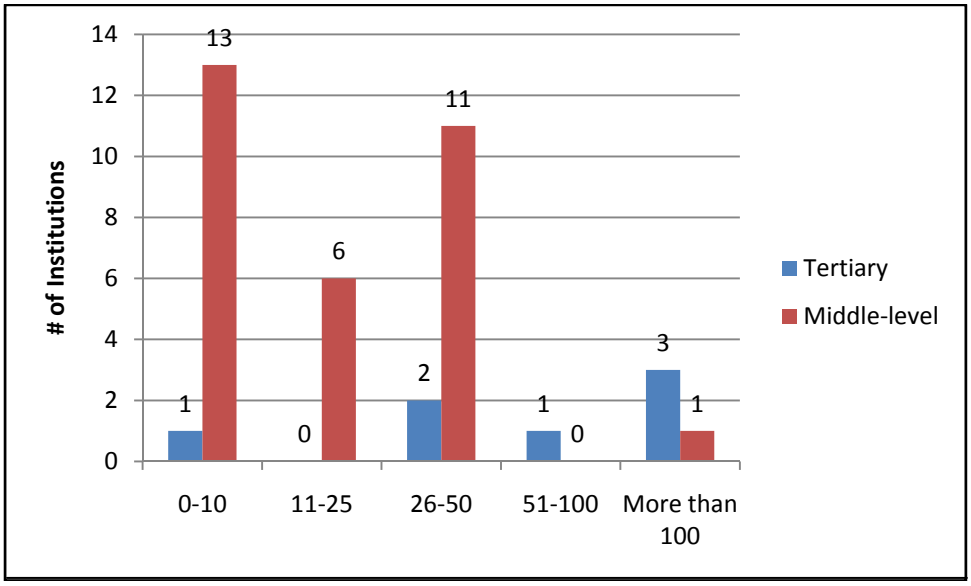
Table 47. Selected Findings on ICT Resources

% of Respondents who Agree	Tertiary	Middle-level
Teachers have readily available access to information and communications technologies for self-learning, accessing information, managing patients and working in health care systems	75%	46%
Students have readily available access to information and communications technology for self-learning, accessing information, managing patients, and working in health care systems	66%	48%
Resources at Training Institutions		
LAN or WAN in place at institution	71%	52%
School has website	100%	35%
Faculty have individual email accounts provided by institution	100%	22%
Students have individual email accounts provided by institution	57%	7%
Users can access the system while away from the school	86%	27%

As depicted above, although respondents' perceptions about faculty access at tertiary institutions meet the threshold (75%), all of the other responses regarding faculty or student ICT access indicate that lack of access to ICT is an area of concern.

During the institutional audit, institutions also reported on their computer inventory and its functionality. As shown in Figure 47 tertiary institutions tended to have more computers on hand than their middle-level counterparts. Both types of institutions reported that the majority of their computer inventory is functional—a positive finding.

Figure 46. Numbers of Computers at Sampled Training Institutions



During the institutional audit, school representatives were asked to identify the institution's sources of funding for IT and equipment. Donors support IT at 57% of sampled tertiary and 25% of sampled middle-level institutions (Table 48), suggesting that the training system is not able to regularly renew its ICT resources without external assistance.

Table 48. Financing Purchases of IT and Equipment

% of institutions that pay for IT and equipment with funding from:	Tertiary	Middle-level
Budget from government	29%	6%
Support from donors	57%	25%
Fees from students	86%	84%
Health care charges (revenue)	0%	0%
Income generating activities (e.g. bookshop, cafeteria)	29%	9%

Table 49 shows that the majority of training institutions replace their computers regularly and 35 out of 38 institutions purchase their computer equipment instead of leasing it.

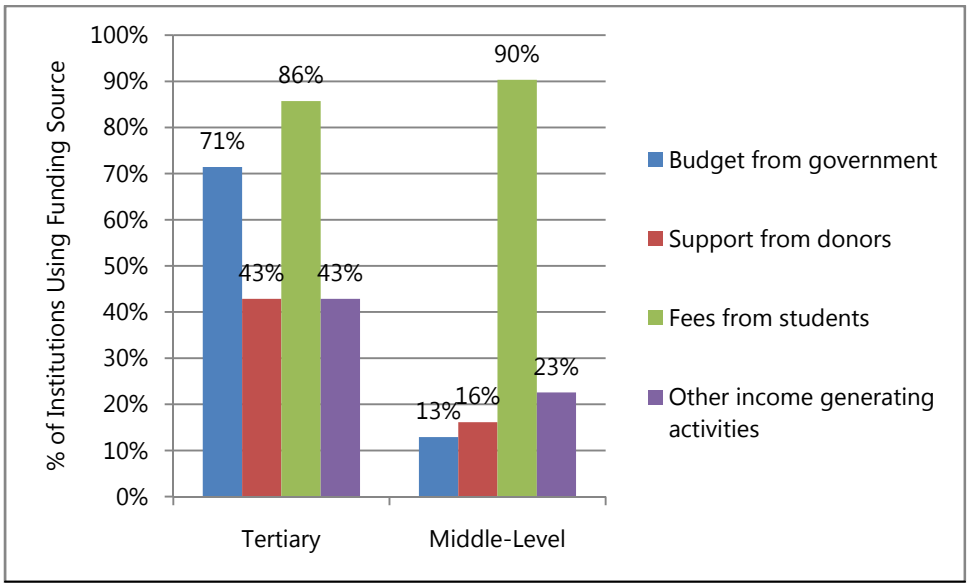
Table 49. Computer Replacement/Upgrade Frequency at Sampled Institutions

# of Institutions that Replace their computers	Tertiary	Middle-level
Every year	1	11
Every two years	0	0
Every three years	1	3
Longer than every three years	2	6
As needed	2	1
Never	0	2

The sampled institutions reported only leasing equipment. The majority of institutions (37) purchase their equipment outright, with two middle-level institutions combining purchasing and leasing and one middle-level and one rural health institution choosing N/A.

A total of 37 school directors shared information on funding sources that their institutions used to purchase expendable supplies. Figure 47 below shows that the majority of the revenue comes from student fees, donors, and government support.

Figure 47. Paying for Expendable Supplies



Research. School directors and training coordinators were asked if their institution has a policy that defines its research priorities. School directors, training coordinators, and faculty members were also asked if the institution provides faculty with support to conduct research and if faculty are encouraged to integrate lessons learned from research into the curriculum. Having a policy that defines research priorities is a basic standard. However, responses in this area identify this as an area of concern (see Figure 48) with 56% of tertiary and 46% of middle-level respondents agreeing that their institution meets the standard.

Figure 48. Sampled Institution has Policy that Defines Research Priorities

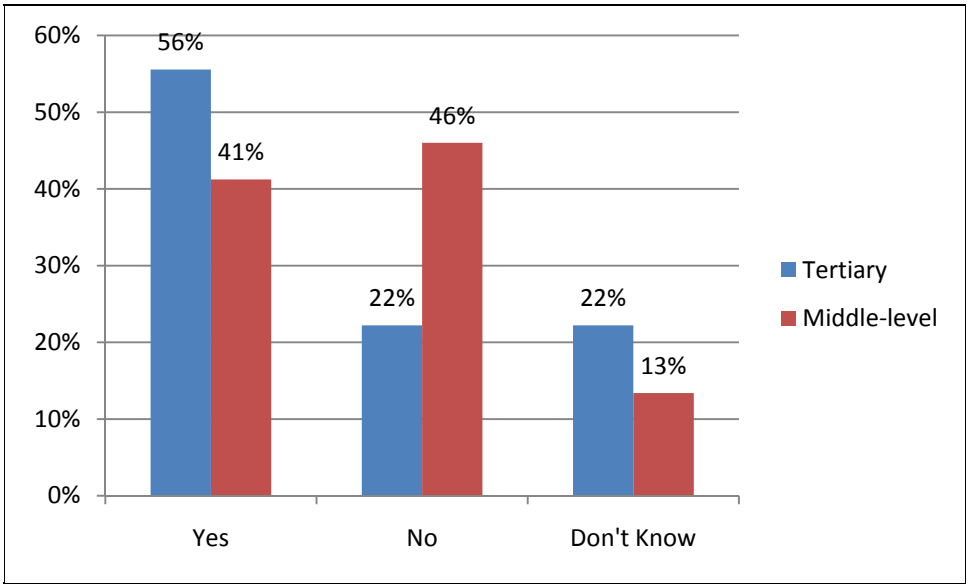


Table 50 depicts resource constraints for faculty members wanting to conduct research. Even if faculty members do not directly conduct research, they should be encouraged to bring research findings from other sources into the classroom to ensure that students learn up-to-date material. Sixty-four percent (64%) of tertiary and 45% of middle-level respondents believe that faculty members are encouraged to integrate lessons learned from research into the curriculum.

Table 50. Institutional Support for Faculty to Conduct and Use Research

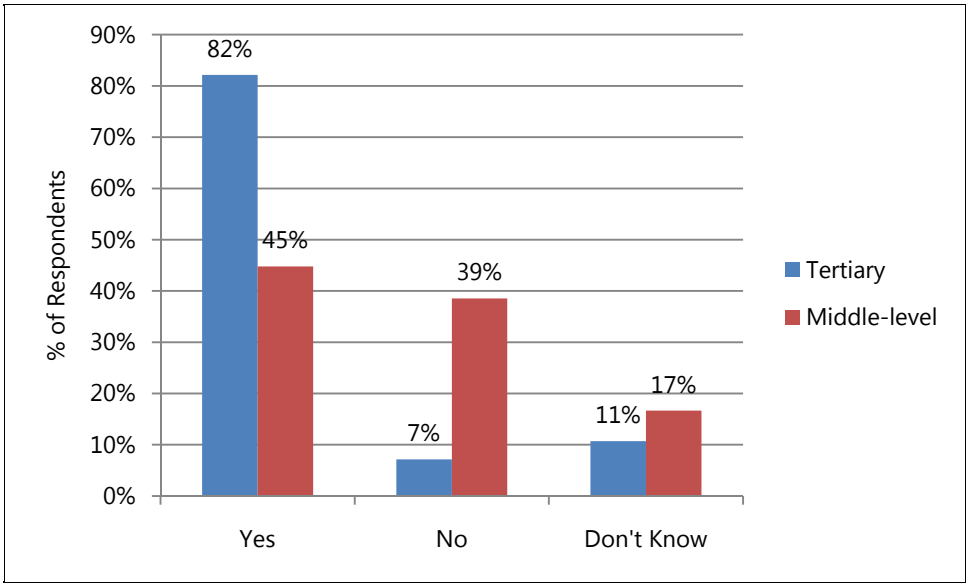
% of Respondents who Agree:	Tertiary	Middle-level
Funding for research is provided	52%	15%
Faculty workloads are reduced so they can conduct research	19%	8%
No resource support for faculty is provided	38%	62%
Faculty do not conduct research	5%	25%
Faculty are encouraged to integrate lessons learned from research into the curriculum.	65%	45%

Educational expertise. Health training institutions must have a policy that encourages the use of educational expertise in planning programs and developing teaching methods. Fifty-five percent (55%) of tertiary and 49% of middle-level respondents agreed that their institutions had such a policy in place, identifying this as an area of concern.

Educational exchanges. The institution must also have a policy for collaborating with other institutions and transferring educational credits. Figure 49 suggests that while most tertiary institutions may have these policies in place, many middle-level institutions do not. The CHE has a post secondary institutions committee that establishes criteria for credit transfers between various programs and maintains a directory of post secondary training institutions[29]. However, there is no comparable system in place for middle-level institutions.

[29] Commission for Higher Education: handbook 2008 page 4

Figure 49. Institution has a Policy for Transferring Educational Credits

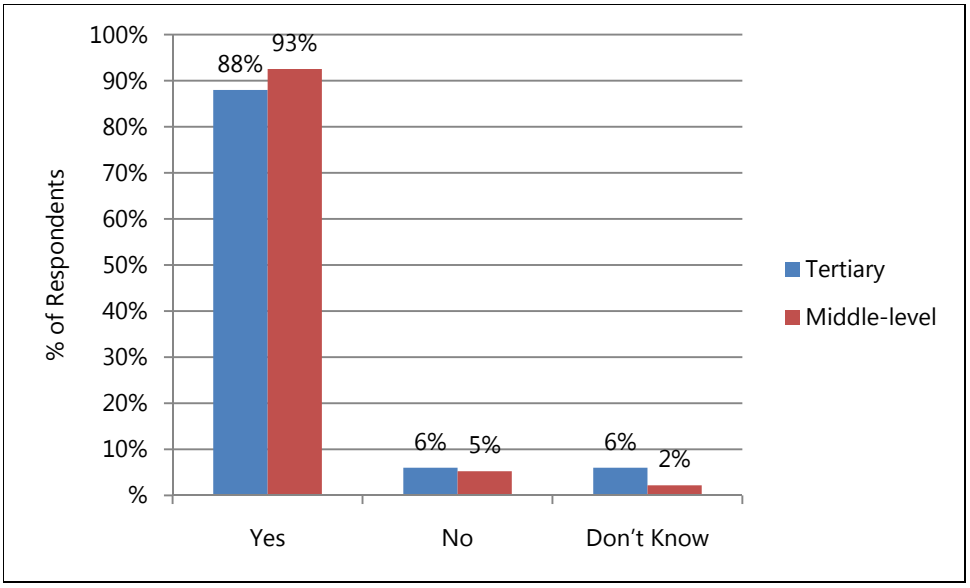


Program evaluation

Per adapted WHO Guidelines, the faculty/department must have a system for monitoring student progress and attrition and have a mechanism for monitoring the curriculum and student's progress in the academic program. The faculty/department must regularly obtain and use feedback from teachers and students; analyze student performance in relation to the curriculum, mission and objectives; and regularly involve stakeholders in evaluation of the academic program.

Most faculty and training coordinators surveyed agreed that their institutions have systems in place for monitoring student progress in the academic program (see Figure 52). Seventy-eight percent (78%) of faculty respondents also agreed that student performance is analyzed in relation to the curriculum, mission, and objectives of the institution.

Figure 52. System for Monitoring Student Progress and Attrition in Place



However, when training coordinators, faculty members, and clinical instructors were asked if the faculty/department regularly obtains and uses feedback from various stakeholders in updating the educational program as required by the basic standard, none of the agreement levels met the 75% threshold (see Table 51).

Table 51. Faculty/department Obtains and Uses Feedback

% of Respondents who Agree:	Tertiary	Middle-level
Faculty/department regularly obtains feedback regarding the educational program from teachers	69%	74%
Faculty/department regularly uses feedback regarding the educational program from teachers	61%	69%
Faculty/department regularly obtains feedback regarding the educational program from clinical instructors	70%	65%
Faculty/department regularly uses feedback regarding the educational program from clinical instructors	59%	62%
Faculty/department regularly obtains feedback regarding the educational program from students	67%	67%
Faculty/department regularly uses feedback regarding the educational program from students	51%	53%

Less than 75% of total sampled respondents agreed that stakeholders are involved in evaluation of the academic program (Figure 53). When asked about stakeholder involvement, the Ministry representative who answered this question disagreed. Of the three regulatory representatives who responded to this, one agreed, one disagreed, and one was note sure.

Figure 53. Faculty/Department Involves Stakeholders in Evaluation of Academic Program

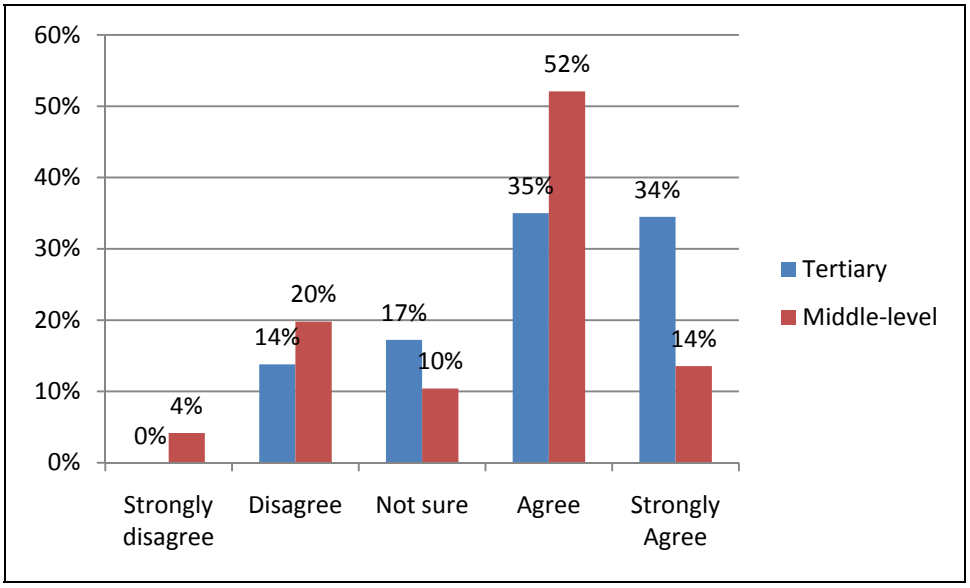
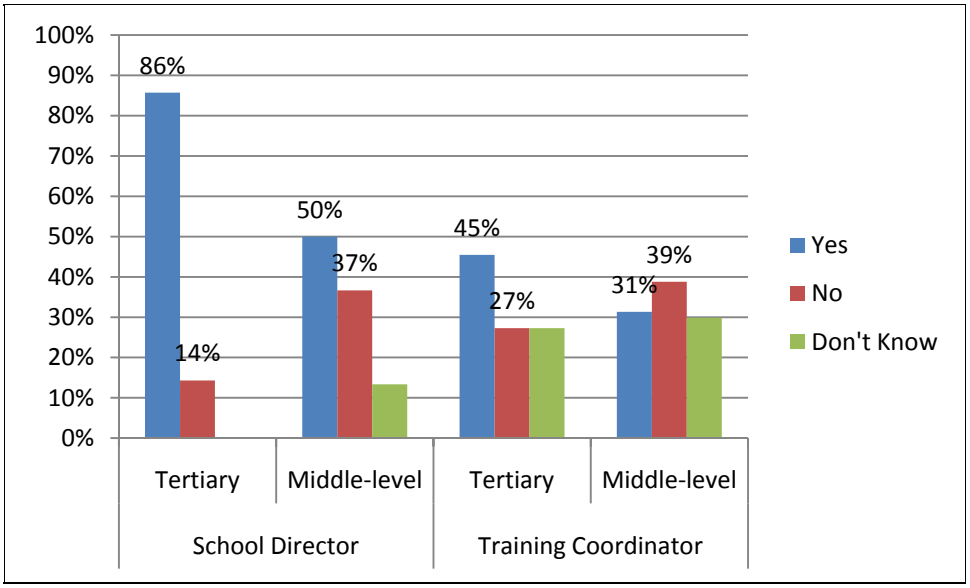


Figure 54. Program Evaluation Data Shared with Stakeholders



Institutions should share program evaluation data with their stakeholders. Figure 54 shows how school directors and training coordinators responded to the statement, "Program evaluation data is shared with a wider group of stakeholders, including educational and health care authorities, community representatives, or professional associations." As indicated, school directors from tertiary and middle-level institutions agreed with the statement more frequently than training coordinators. However, only responses from school directors meet the 75% threshold level. The one ministry representative that answered this question did not know if program evaluation data was shared. As with the previous question, responses from regulatory

representatives were evenly divided between "yes," "no," and "don't know." Responses in this area support the findings that linkages between stakeholders in the health care training system in Kenya are not as strong as they should be to support high-quality education.

Governance and administration (leadership, management and administration)

In Kenya, emphasis on good governance and leadership is a priority policy agenda, and this is applicable to health training institutions. Data from the PNA indicate that health care training institutions need to address gaps in several areas in order to meet governance and leadership standards according to WHO Guidelines.

Organizations meeting this standard should have strong internal controls, including:

- Well-defined governance structures and functions in the department showing how the department is connected to the school/institution.
- Faculty/departments with a clear line of responsibility and authority for designing or reviewing the curriculum
- A dedicated budget for designing and reviewing the curriculum that faculty/departments control
- Faculty/departments with sufficient administrative staff to support implementation of the academic program.

To strengthen governance, faculties/departments should also maintain strong relationships with the health and health-related sectors, including government. Under this area, respondents were also asked to comment on the institution's interactions with the community as well as give feedback on the support that ministries and regulatory bodies provide to training institutions.

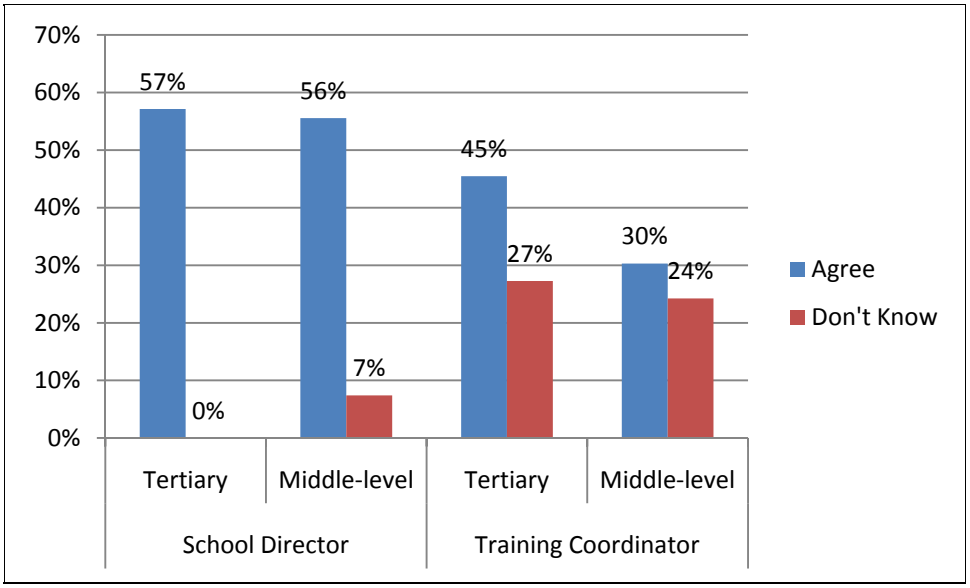
Internal controls and systems. Ninety percent (90%) of respondents at tertiary and 82% at middle-level institutions agreed that there is a well-defined structure of governance in place at their institutions. In addition, 81% of participants from tertiary institutions agree that strategic planning is based on the organization's mission. All other agreement levels, as shown in Table 52 below, fall below the 75% threshold and are thus areas of concern.

Table 52. Concerns over Governance and Leadership

% of Respondents that Agree that:	Tertiary	Middle-level
There is a well-defined structure of governance in place	90%	82%
Strategic planning is based on the organization's mission	81%	72%
Academic leadership is evaluated with respect to achievement of mission and objectives	63%	64%
The faculty/department has a dedicated budget for curriculum/research	42%	28%
The department has sufficient administrative staff	71%	44%
The institution regularly updates its policies based on analysis	70%	54%

Figure 55 shows responses from school directors and training coordinators to the statement "The faculty/department can direct the departmental budget as needed." All agreement levels are below the 75% threshold, identifying this as an area of concern.

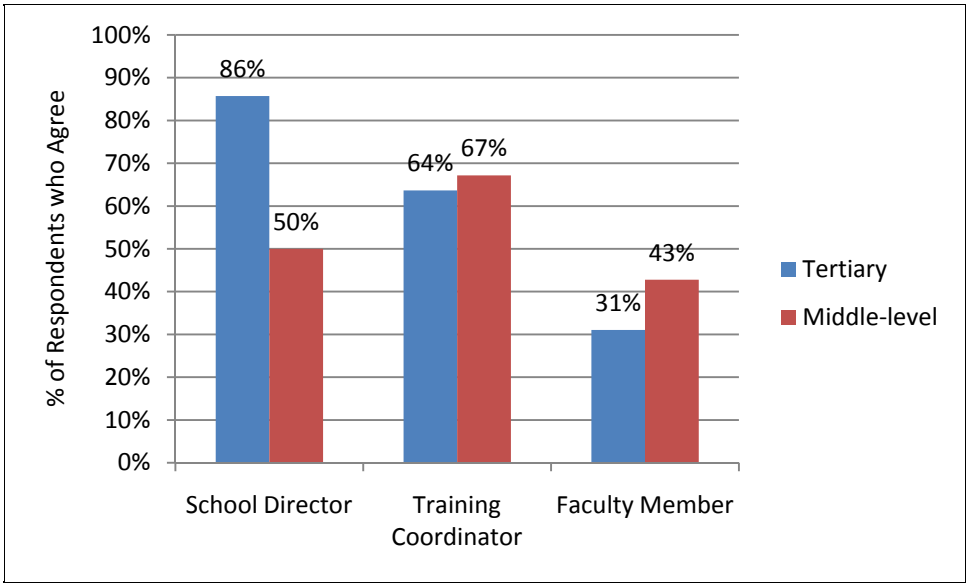
Figure 55. Department can Direct Budget as Needed



External relations. School directors and training coordinators agreed that their school/institution has formal relationships/agreements with the health and health-related sector that support the mission of the school (76% agreement) and that their faculty/department maintains strong relationships with these sectors (80% agreement). However, only one of five Ministry and regulatory respondents interviewed agreed with each of these statements. Qualitative data also highlights some of the challenges related to involvement of stakeholders. As an example, clinical instructors reported there are "limited opportunities for deliberation among stakeholders."

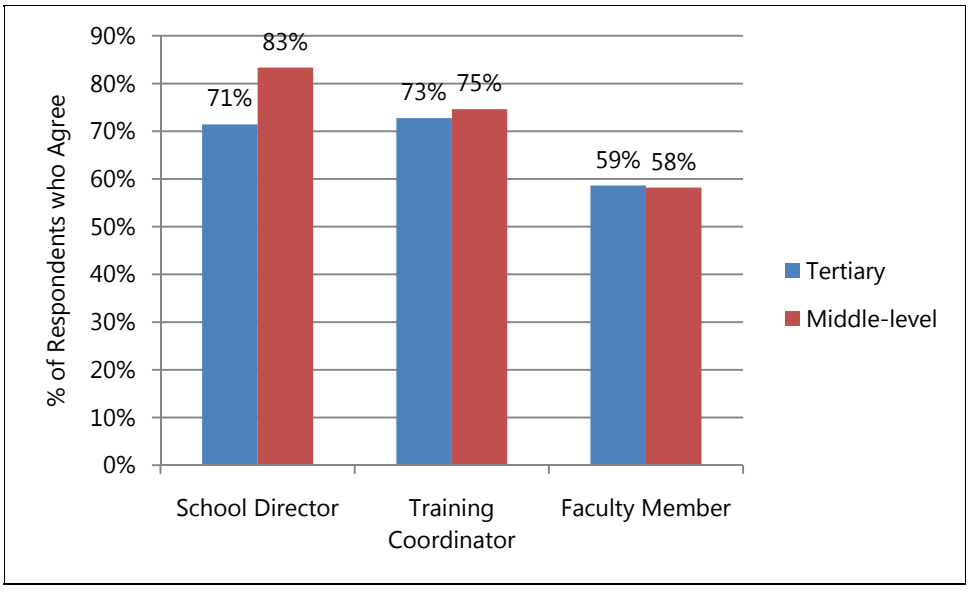
Figure 56 below shows responses from various respondents to the statement "The Ministries of Health provide positive support for health worker schools/training institutions." "Positive" was not further defined. School directors from tertiary institutions reported the highest levels of agreement among school respondents. Of four Ministry and regulatory respondents who completed this question, two agreed and two checked "don't know" suggesting that even among key health care leadership the level of support provided by Ministries to health care institutions is not clear to all stakeholders.

Figure 56. Ministries of Health Provide Positive Support for Health Worker Training Institutions



Respondents were also asked if regulatory bodies and professional associations provide positive support to training institutions. Figure 57 below presents responses from school directors, training coordinators, and faculty members. Responses from Ministry and regulatory respondents were mixed with two "yes", one "no" and one "I don't know."

Figure 57. Regulatory Bodies Provide Positive Support to Health Worker Training Institutions



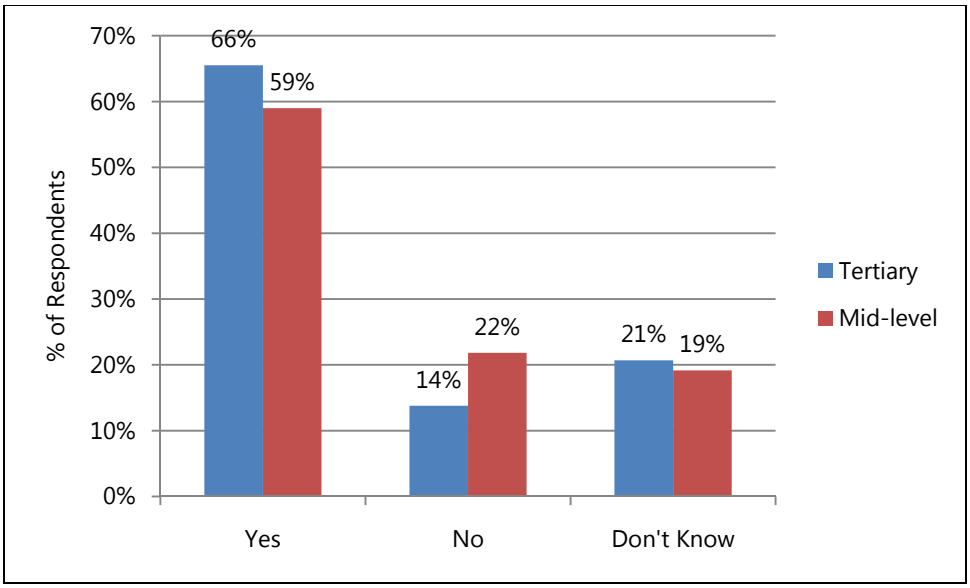
School directors, training coordinators, faculty members, clinical instructors, and students were asked to respond to the statements: "The faculty/department/school has constructive interactions with the representatives of the communities it serves" and "My school encourages

social responsibility in the community." While 83% of tertiary and 73% of middle-level respondents agree that their school demonstrates social responsibility, 61% agree that their institution has constructive interactions with the community it serves. These data suggest this as an area worthy of further study.

Continuous renewal

The final standard area suggested by the WHO Guidelines, the renewal standard, requires that institutions have programs and procedures in place to regularly review and update its structure and functions and correct deficiencies. This standard is in addition to the requirement that institutions have regular processes in place for updating the academic program. Sixty-six percent (66%) of tertiary and 59% of middle-level respondents agree that their institution has procedures for regular review and updating of its structure and functions. When combined with data suggesting that institutions do not fully involve faculty, staff, and stakeholders in the program evaluation, these findings support the overall conclusion that system linkages are not as strong as they should be.

Figure 58. Structure for Continuous Renewal in Place



Training Institutions: Equal Opportunity for Women and Men

During the PNA, various actors in the health training system (i.e., faculty, students, ministry of health officials, representatives of regulatory bodies) were asked to share their views and understanding of gender and the role it plays in health worker education, and to specifically identify opportunities for the improvement of gender equality in education. Students were asked whether they felt their learning opportunities were limited by gender and, if so, how. Respondents from the Ministries of Health and regulatory bodies, and school directors were asked to describe gender-based challenges that students face in the PST, IST, and CPD systems. Participants from the MoH and school directors were also asked to share experiences of how

gender affects faculty recruitment, retention, and advancement and how they envision improving gender equity for both students and faculty.

Results

Results of the PNA suggest that equal opportunity for education, occupation, and employment are constrained by gender in the health training system in Kenya, including some clear forms of gender-based discrimination (i.e., pregnancy, sexual harassment, and occupational segregation)[30]. In response to the question, "What do you think are the major challenges facing health care in Kenya?" students identified low salaries and noted that the gap between doctors and nurses is big and demoralizes the nurses. Also, for some nursing training is not flexible and has not addressed family issues. As a focus group respondent noted, "[Gender] affects learning since we have different roles. [When I go home] I make sure the baby is well-fed then asleep, husband taken care of…that affects my concentration. While he goes home he expects food [to] be ready."

Gender issues raised in student focus groups included the following perceptions: health training is not flexible with respect to age and family constraints; female clients do not want to be treated by male students; some female students left in male wards alone, especially at night, fear that male patients will attack them. A preceptor in a public, mid-level training institution also expressed this perception; male candidates are not encouraged to pursue nursing; female candidates are favored in nursing school admissions; and male students are given opportunities to learn more complex procedures than female students (i.e., males catheterize, females make beds). Some of these findings suggest occupational segregation and task segregation in learning situations.

When asked to respond to the statement, "My learning opportunities are limited by my gender," 87% of students disagreed. However, twice as many women as men perceived learning opportunities as more limited by gender.

Occupational segregation

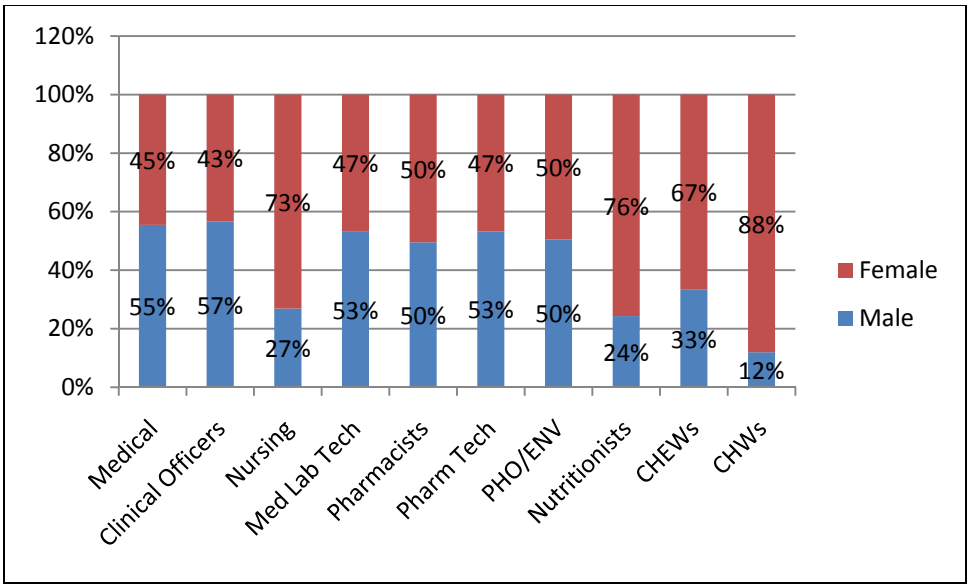
Findings suggested occupational and task segregation in some training institutions. Occupational segregation by gender is a pervasive and widely documented form of gender inequality in which women and men are expected to work in culturally defined occupational roles (Anker 1997; Anker et al 2003). Women are concentrated in marginal, lower-status, and/or less well-paid caring occupations, such as nursing and teaching, horizontally segregated from men who are typically concentrated in technical, managerial, or strength-based jobs such as physicians, managers and police officers.

Student body. Because the qualitative results suggested occupational and task segregation, the PNA team analyzed the quantitative data to assess patterns of occupational segregation.

[30] PNA results are consistent with other available data from Kenya, including the 2000 National Gender and Development Policy, the National Commission on Gender and Development's October 2006 Desk Survey on Gender Issues in Kenya, and findings from other studies. For example, see Onsongo, Jane, "Gender Inequalities in Universities in Kenya" in Gender Inequality in Kenya, Eds. Creighton, C. and Yieke, F.UNESCO, 2006; and Kabubo-Mariara, J., "Wage Determination and the Gender Wage Gap in Kenya: Any evidence of gender discrimination?" 2003.

Descriptive data show that within 42 training institutions sampled, and the 15,798 currently enrolled students based on total enrollment reported by sampled institutions, there was unequal distribution by gender in various career tracks (i.e., medicine, nursing, nutrition). Figure 51 shows the differences in the concentration of female and male students in key occupational programs. For example, there were more women enrolled in nursing (73%), nutrition (76%), and in CHW programs (88%), while more men were enrolled in medicine (55%) and clinical officer programs (57%). Percentages are based on data from those schools that provided a breakdown[31]. The data suggested that some occupations were "female jobs," with the most striking segregation appearing in the nursing and CHW occupations. A regulatory body director and a school director perceived this segregation observing, "Nursing is seen as a woman's occupation," and that a man is "lowering his dignity by taking it up."

Figure 50. Student Enrollment by Gender and Cadre



Faculty. Figure 51 shows that there are more male faculty (285) than female faculty (173) in 20 nursing schools that reported faculty and staff levels. This may seem surprising given the female profile of the nursing occupation, but this finding is consistent with other research that found teachers are more likely to be men than women as one progresses from primary to tertiary level (International Labour Conference 2009).

Figure 51 also shows men more heavily concentrated in five of eight faculty positions such as lecturer (66% versus 34%), senior lecturer (72% versus 28%) and professor (81% versus 19%). Women hold more tutor (58% versus 42%) and clinical instructor (66% versus 34%) positions.

Figure 51. Number of Faculty by Position and Gender in Nursing-Only Education Institutions

[31] Note: Some students self-identified as Community Health Extension Workers (CHEW).

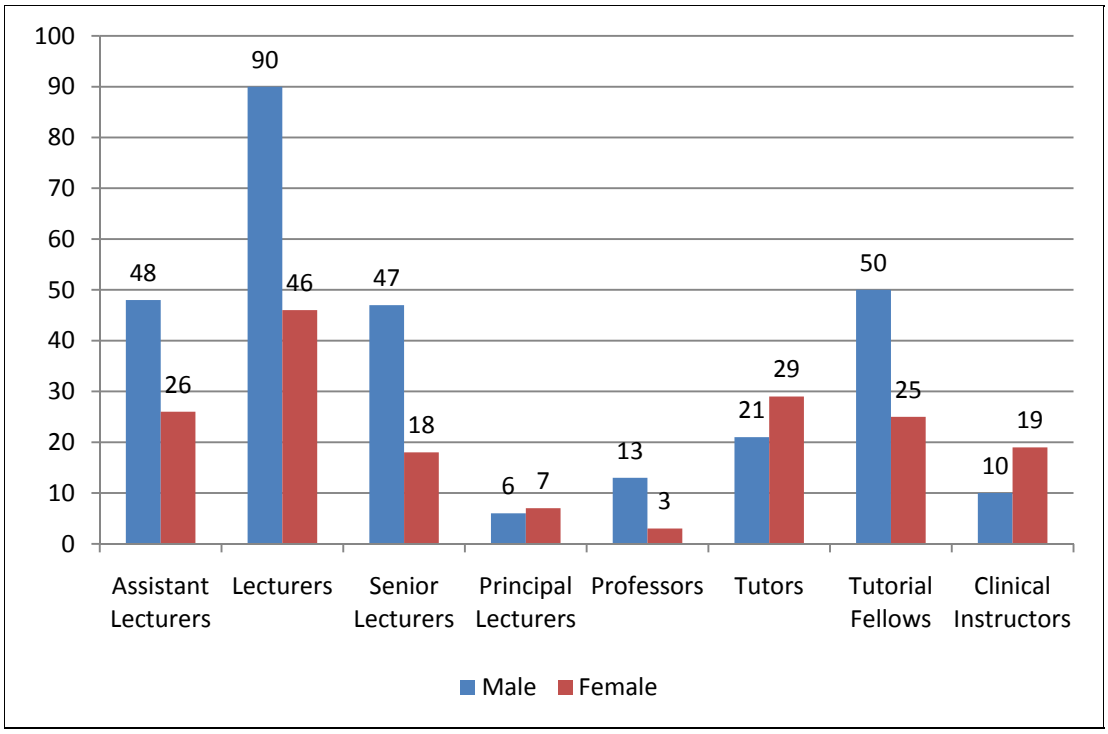
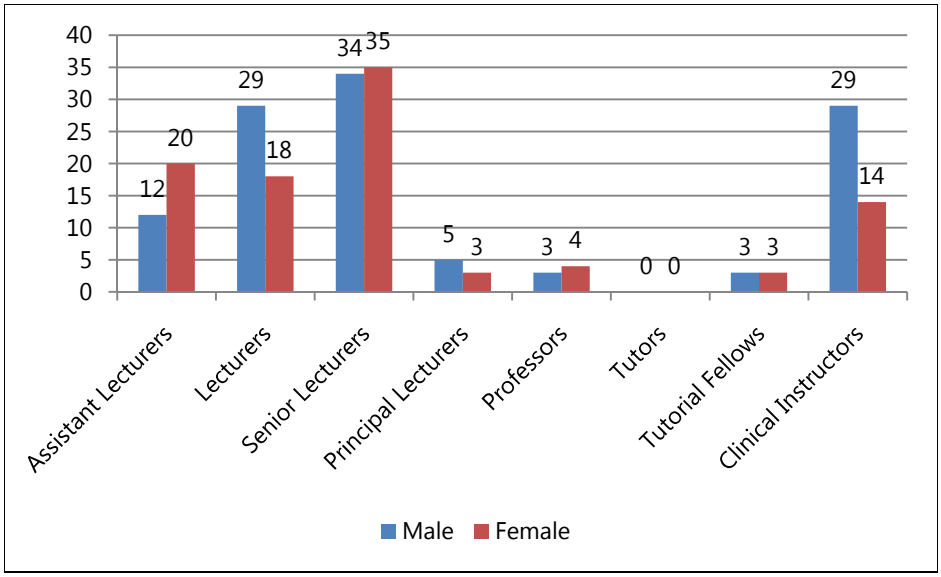


Figure 52 shows that in four clinical officer training institutions, men are more concentrated in lecturer (62% versus 38%) and clinical instructor (67% versus 33%) positions. Women are more heavily concentrated in the assistant lecturer position (63% versus 37%). The other positions seem to be "equal opportunity" jobs.

Figure 52. Number of Faculty by Position and Gender in Clinical Officer-Only Education Institutions



Sexual harassment

In the Kenya 2007 Employment Act, sexual harassment encompasses both *quid pro quo* and hostile environment sexual harassment (Republic of Kenya 2007). Kenya's Sexual Offenses Act addresses *quid pro quo* sexual harassment in educational institutions (Kenya Sexual Offences Act 2006).

Students' experience of sexual harassment. Despite a clear legal framework, female students participating in FGDs reported incidents of quid pro quo sexual harassment in educational institutions. Two categories of sexual harassment have been recognized in the laws and policies of several nations: hostile environment, which is conduct of a sexual nature that creates an intimidating, hostile or humiliating work environment for the recipient such as to change the terms and conditions of work; and quid pro quo, where a person's rejection of, or submission to, such conduct is used explicitly or implicitly as a basis for a decision that affects that person's job.

Students were asked to describe gender-related challenges in the learning environment, including sexual harassment. Some female students reported harassment by male faculty, especially during exams, stating, "there are 'sex engineered grades' whereby a male lecturer will require a student to perform sexual favors before being awarded a certain grade." Participants reported that some instructors requested female students to "give in" before they are assisted in their work and if the student did not comply, she would be given a failing grade. Female students who reported being harassed by male tutors also stated that they perceived there was no avenue for recourse. In some cases, students and also school directors reported that students had to pay a "demotion fee" which most cannot afford. Male participants reported being involved in "love triangles" and being bullied or harassed by male lecturers who were interested in the same female students. Sexual harassment may be perceived as an unfair competitive advantage, as when a male student remarked, "Where there are ladies, favoritism must be there…a girl is favored since she can go to the extent of using herself."

Evidence from this assessment suggests that *quid pro quo* sexual harassment by male faculty is a problem for female students and constitutes unequal and detrimental treatment of women and an obvious roadblock to equal opportunity.

Pregnancy, family responsibilities, and discrimination

Discrimination based on pregnancy consists of exclusions, restrictions or distinctions made on the basis of pregnancy, childbirth, or related conditions. It often includes unwillingness to hire, promote, or retain female students or workers who may get pregnant and leave the workforce or require maternity leave and benefits (Newman 2009). Pregnancy discrimination may also be included in a larger category called "family responsibilities discrimination," in which discrimination occurs against workers who have family care giving responsibilities, such as mothers and fathers of disabled children and workers who care for family members (WorkLawLife). Indeed, it is difficult to separate the two forms of discrimination since exclusion from school or a job may be linked to the pregnancy as well as to the expectation of subsequent care giving responsibilities.

Students' and faculty experience of pregnancy and discrimination. During FGDs with students, there were reports in six of the 15 focus groups of the disruption to female students' studies caused by pregnancies. In some cases, students mentioned that female students had been forced to leave educational institutions or had experienced demotion and/or disruption of their studies. Quotes from students illustrate both the disruption and elements of discrimination:

"When the female student becomes pregnant, the attitude of the male lecturers is negative towards them."

"When [a female nursing students] gets pregnant, they will be given time off to deliver and nurse the baby for a few months, and then come back, but they have to pay the demotion fee of *Ksh* 50,000 (about $600) on return."

When asked about gender-based challenges that students face, 21 of 37 school directors mentioned pregnancy. Twelve of these suggested that pregnancy was "not a problem now" because "previously girls who got pregnant could not come back but now [they] do." Nine of these directors indicated, however, that pregnancy continues to be a major cause of disruptions for female students. Illustrative perceptions include:

"Girls who are pregnant have to leave when delivery is due while boys who impregnated them continue with studies" –school director, public middle-level institution.

"They become pregnant, and this hampers their learning and continuity with studies, and it affects practical lessons" –school director, public tertiary institution.

Faculty may also face discriminatory practices. As one mid-level school director noted, "They would rather employ a male lecturer than female because females need a lot of duty (i.e., maternity leaves)." Maternity leave poses long-term institutional challenges. A public institution school director notes that, "Female lecturers go for long maternity leaves and this provides some sort of shortages."

Students' and faculty experience of family responsibilities. The qualitative data suggested that some students and faculty face challenges related to family responsibilities, which may constitute direct or indirect discrimination. Female students stated that they had to manage family responsibilities, such as household duties and childcare, while also studying full-time, implying that they could not pursue educational opportunities under the same conditions as their male counterparts (or female students without children). Recall the experience of the female tertiary-level student who noted: "We have different roles. [When I go home] I make sure the baby is well-fed then asleep, husband taken care of…that affects my concentration…while he goes home he expects food [to] be ready."

The qualitative data suggested that balancing work and family obligations was also perceived as problematic by faculty, highlighted in the quotes below:

"As a woman, domestic responsibilities become a major hindrance to advance my training because I have to seek consent from my spouse to go back to school" –clinical preceptor, public middle-level institution.

"In most cases, women in this facility have not been interested in precepting; most times precepting is conducted by men. Most theories or classes start at 2 p.m., but most women instructors would be breaking off for the day. So women find it inconvenient to come back in the afternoon because they are busy preparing food for their families" –male clinical preceptor, rural health training facility.

"Women are disadvantaged because of commitments in caring for family" –a ministry respondent.

Conclusions. Results add further evidence that equal opportunity for education, occupation, and employment are constrained by gender in Kenya's health provider education system, including forms of discrimination based on pregnancy and family responsibilities, sexual harassment, and occupational segregation (Onsongo 2006; Kabubo-Mariara 2003). PNA results are consistent with other available data from Kenya, including the 2000 National Gender and Development Policy, the National Commission on Gender and Development's October 2006 Desk Survey on Gender Issues in Kenya, and findings from other studies. Recommendations are discussed below.

Discussion and Recommendations

On September 29, 2010, the stakeholder working group and invited guests met to review preliminary findings and recommendations from PNA Phase I and II. Mr. Kazungu Kambi, medical services assistant minister, opened the meeting on behalf of the Minister of Medical Services. The goals of the meeting were for participants to:

- Identify key priorities that must be addressed if the training system is to produce qualified, competent health workers who are able to provide quality services and deliver the KEPH to all citizens
- Identify an appropriate mechanism to coordinate the strengthening of the health training system
- Identify who must be involved in addressing these key priorities, and where Capacity Kenya—or other related programs and actors—can support this process to strengthen the health training system in Kenya
- Express their strong commitment to addressing these issues, and to supporting the process of strengthening the health training system in Kenya.

Dr. Anastasiah Kimeu presented key results from both phases of the PNA and recommendations from Phase II. Following this presentation, participants reviewed the key recommendations, discussed root causes of performance gaps, identified key recommendations, and developed preliminary action plans.

PNA data suggest that while much is going well in the health care and health care training sectors, several areas of concern and opportunity exist. These include:

- The observed performance of health care workers was not consistent with the expectations of the Ministries of Health.
- Linkages between stakeholders in the system are weak, which affects system efficiencies as well as the quality of training and service delivery.
- Resources currently provided to support health care and health care training systems are insufficient, especially in the areas of staff, health care facilities, supplies, and ICT (for PST, IST, and CPD). Resource insufficiency affects both the quantity and quality of health care provision and health care training.
- Curricula for health care training, while strong in many aspects, are not optimized and are not necessarily structured or standardized to deliver on national priorities such as KEPH.
- Clinical placements need to be strengthened in order to provide more practical and relevant experience for students.
- Faculty and clinical preceptors need more support, supervision, and training to perform their roles more effectively.
- Gender inequalities which exist in the health training system and have been observed elsewhere in the health care system, impact system effectiveness and need to be explored in more depth.

Each of these areas of concern is discussed below. Specific recommendations from the Stakeholder Working Group and Capacity Kenya follow discussion in each area.

Aligning performance of health workers with expectations

There are several important observations that can be made based upon the data collected as part of this study. First, the health workers observed as part of this study were not performing at levels desired by the Ministries of Health, though the health workers generally regard themselves as competent both technically and in overarching areas to provide services. Second, health workers reported having clear job expectations; however, fewer health workers reported having a written job description, and some indicated that they struggle with being overworked, which can result in taking shortcuts in service delivery. And finally, health workers are receiving a mix of formal and informal supervision, yet the quality of the supervision received somewhat mixed reviews, with some health workers participating in focus groups portraying the situation less favorably than was reported through quantitative data collection.

These observations, though not directly contradictory of one another, reveal a complex system in which health workers seek to deliver services amidst a variety of constraints. In doing so, they are likely making, consciously or otherwise, tradeoffs between the quantity and quality of care provided to Kenyans. For example, given the long queues and limited staffing, a health worker may consciously choose not to provide information on a method of FP that is considered to be

culturally unacceptable (i.e., male sterilization) or is not available at a particular facility (i.e., female sterilization). Similarly, the health worker may opt not to discuss with the client the benefits and drawbacks to continuing her/his current method or switching to a new method, or discuss with her/him their changing needs in FP, or talk about possible side effects from their current method. In order to balance the quantity of services being provided along with the quality of these services, health providers must apply judgment. These tradeoffs are inherent in any system with finite resources, and this balancing act is especially important for Kenya's health care system which faces shortages of health workers, particularly in hard-to-reach areas.

In this context, supervisors also have a critical role to play to in ensuring that health workers are making the appropriate trade-off decisions, providing as much quantity of services as possible without compromising quality beyond a certain limit. The extent to which the current supervision mechanism for health care workers—and by extension the goals and objectives of the Ministries of Health—is able to provide appropriate guidance to health workers in this area remains unclear.

Recommendation. The PNA Stakeholder TWG recommends that a group such as Capacity Kenya or another relevant project or organization, in collaboration with the Ministries of Health and other key stakeholders, undertake a more detailed examination of the supervisory process. Specifically, it is necessary to understand what supervisors and supervisees are discussing, the extent to which quality of care is being discussed, and how supervisors are supporting and advising supervisees to manage being overburdened and understaffed, among other things. We expect that a deeper understanding of the supervisory process will help guide the Ministries of Health on ways to improve supervision, and ultimately improve health service delivery.

Strengthening linkages between stakeholders in the health care training system

Data from the PNA suggests that important linkages necessary for the health care training system to function effectively need strengthening. Noted gaps include:

- Updating mission, vision, and values to match stakeholder needs; improving currency and relevancy of curricula
- Linking clinical practice and classroom training, involving a wider group of stakeholders in evaluating the academic program, involving faculty in managing the curriculum and budgets more effectively, linking theory and practice more effectively, transferring educational credits, and developing a set of harmonized training standards across the system.
- Involving faculty in managing the curriculum and budgets more effectively
- Linking theory and practice more effectively
- Transferring educational credits
- Developing a set of harmonized training standards across the system.

PNA findings also suggest that while some training institutions may have linkages with external stakeholders, including future employers, many faculty are not aware of these linkages and therefore not able to translate the benefits theses linkages offer into development and delivery of the educational program. As the Ministries of Health are the largest health employers in Kenya, weakened linkages between health training institutions and employers are especially concerning.

To narrow the gaps between the reported actual and the desired performance, the key actors (faculty, staff, MoMS, MoPHS, MOEST, CHE, regulatory bodies, professional associations, and future employers) need to work together more closely. Ensuring that there is a linkage between policy makers and new policies and the training institutions and regulatory bodies that need to develop the workforce to carry out those new policies is critical. For example, as part of the development of the KEPH, a mechanism is needed to ensure that the regulatory bodies, Ministry of Education, and training institutions translate this policy into their curricula and into their monitoring and evaluation. Data from the PNA suggest that this coordination did not happen effectively and, as a result, the KEPH has not been integrated into the curriculum as intended. It is also important that changes implemented in curricula are monitored and evaluated to ensure that the intended improvement in care delivery transpires.

Recommendations. The Stakeholder Working Group recommends establishing a mechanism for coordination of the health care training system to strengthen linkages, reduce duplication, increase standardization, and increase efficiency in the system. The National Health Training Strategy (NHTS draft 2008) calls for establishment of an Advisory Board to work with MOH and stakeholders. One possible way to accomplish this is through enactment of the draft National Health Training Policy (NHTP draft 2009). The draft NHTP highlights the fact that currently there is no coordinated and structured institutional framework for the management of health training institutions in Kenya and suggested the creation of the National Health Education and Training Authority (NAHETA). The main aims of this body are to standardize curricula, licensing, and admission criteria of basic and post-basic education and CPD; integrate research and ICT into health training and education; and institutional collaboration. It will be important that the creation of NAHETA, or of a similar coordinating mechanism, is done in close collaboration with the current regulatory bodies to so that their roles in the health care training system are not diminished. Rather, this coordinating mechanism should ensure that there is harmonization of standards of practice, accreditation of training facilities, and CPD since several cadres are trained at the same institutions and take the same CPD courses. Capacity Kenya is currently assisting with costing the draft NHTP and will report back to the Stakeholder Working Group once the costing is complete.

In addition to working with the coordinating body recommended above, health care training institutions should also develop or improve mechanisms for involving internal and external stakeholders in:

- Updating the training institution's mission/goals/objectives to ensure that they align with national priorities and with the goals of the institution's constituents

- Linking classroom training more closely to clinical practicum, including strengthening linkages between faculty and clinical instructors
- Evaluating the effectiveness of educational training programs against national policies and goals
- Involving faculty, students, and stakeholders in the overall program evaluation by increasing the acquisition and use of feedback from these groups. Where possible, involving faculty in administering the departmental budget.

Resourcing the health care and health training systems

Data from PNA respondents suggest that resources for health care delivery and health care training are insufficient, with middle-level institutions such as the KMTCs reporting being especially challenged. This finding is supported by previous studies, including the NHSSP II Middle-term Review Report (2007), which highlighted the need for increased resources to health training and to the health sector overall. PNA findings highlight shortages in faculty/clinical instructors, health care workers, equipment at training institutions and in clinical placement sites, ICT at training institutions, facilities (including classrooms and dormitories), safety hazards at some institutions, and funding to provide support for faculty and health workers and the health care system overall.

The *Norms and Standards for Health Service Delivery* (MoH 2006) and CHE guidelines for accreditation (CHE 2008) provide a framework to support investment in health care and health training respectively. The Norms and Standards refer to a minimum and approximate mix of HR and infrastructure required to serve populations. PNA data (I and II) suggest that institutions are not currently meeting all norms/standards.

Without adequate investments in health training, a snowball effect occurs. This starts in the classroom with faculty not having adequate resources for training in terms of skills labs and equipment, such as syringes, drainage tubes, bandages, gloves, etc. for students to practice routine procedures outside the clinical placement sites and video and other kind of recorded training materials to reinforce the lectures and demonstrations are unavailable. Without sufficient ICT, students' abilities to access information and study independently are negatively affected.

Students are then sent to clinical placement sites lacking adequate exposure and practice prior to clinical placement sites. Patients in health facilities are starting to refuse to have students practice on them without adequate supervision. And without sufficient faculty to adequately supervise the students do not gain the knowledge and expertise necessary to conduct assessments and clinical procedures. Many students end up fulfilling clinical roles on nights, weekends, and other shifts to fill in for clinicians rather than to receive proper mentorship, leaving the patients without proper expertise. This results in health care workers without the requisite skills to deliver quality clinical care.

Feedback from clients and from student focus groups reinforces what we know about human resource shortages affecting quality health care service for clients. Training for students needs to be improved and clients need to feel supported both by students and the qualified health professionals when both are providing services. Privacy is still a problem area in delivery of quality services. Clients commented about the lack of respect that health workers showed clients. They also mentioned a lack of fairness in wait times such as favoring friends and moving them to the front of the line. Management of health care facilities should be improved, which could improve wait times.

Recommendations

- Continue to work on developing health care workers, including CHWs, to reduce the health care worker shortage
- Prioritize the provision of ICT in health care training institutions
- Identify methods to centralize electronic educational materials (i.e., multi-site licenses) to increase availability in a more cost effective manner
- Foster educational learning networks to share resources and information
- Foster local and regional public-private partnerships to broaden resource base
- Ensure certification of distance learning for appropriate CPD across all cadres
- Where possible, publish curricula online for downloading and ease of sharing
- Conduct a precise forecast of inputs needed to achieve Vision 2030 in the health sector.

Updating and harmonizing curricula

PNA results suggest several areas of concern regarding management of the educational program. Phase I data showed that health workers are not currently performing according to expectations of the Ministries of Health. The NHSSPII (2007) introduced KEPH and noted that NHSSP I did not manage to make a breakthrough in terms of transforming the critical health sector interventions and operations to meet specific targets. Data from Phase II suggest that while students, faculty, and other stakeholders in the health care training system believe the curriculum is aligned to national health priorities, they do not fully understand KEPH or know whether the curriculum at their institution helps prepare students to deliver services according to KEPH.

Integration of the KEPH is just one aspect of curriculum renewal. Data also suggest that: curricula related to specific care protocols may not be consistent with current standards, different approaches to curricula at various institutions cause problems for clinical instructors trying to work with a variety of students, and there is little research regarding which areas of curricula need improvement. Furthermore, PNA respondents reported a disconnect between knowledge tested for graduation requirements and real-world performance. PNA phase I findings also indicate that most of the health workers surveyed had competency gaps in service areas such as FP and IMCI, and to a lesser extent HCT and Malaria CM.

Regulatory bodies in Kenya determine what should be in the curricula for several of the professions. Where schools follow a mandatory curriculum established by regulatory councils in Kenya, the WHO basic standard requiring training institutions to exercise more control over their own curriculum may appear to be in conflict with actual practice. However, not all of the regulatory councils have mandatory curricula. Closer linkages between the training institution and the regulatory bodies that are responsible for specific content are needed to close these gaps.

Another concern raised in the PNA is that curricula, especially for pre-service education, may not be adequately balanced with respect to theory, demonstration, and clinical teaching. Students need an appropriate mix of theoretical and practical learning in order to become proficient in providing health care. Some institutions may not be able to offer sufficient practical training because they lack the resources to ensure that equipment and faculty are available to mentor students in gaining practical skills. A study entitled "The Perceptions of Nurse Teachers, Student Nurses and Preceptors of the Theory-practice Gap in Nursing Education" (Corlett 2000) found gaps in the relationship between student, preceptor, and institution. This study suggested that one way to minimize the impact is with the "development of an innovative curriculum allowing closer sequencing of theory and practice…improving collaboration between clinical areas and education institutions in developing clinical preceptors [instructors] roles." PNA data confirms these findings.

Another concern raised by students is that the curriculum does not allow for assessment and subsequent mentorship as often as needed. Students expressed a desire to have more frequent assessments to more effectively assess their knowledge after each class.

PNA data also suggest that curriculum committees at health care training institutions are either absent or not functioning optimally. First, middle-level institutions may not have curriculum committees, and thus appropriate governance structures, in place to control and renew the curriculum. Second, responses from tertiary level participants just meet the threshold indicating further investigation is warranted into the use of curriculum committees at tertiary institutions. Third, responses from both tertiary and middle-level participants regarding involvement of faculty, staff, students, and external stakeholders all fall below the concern threshold, indicating that where curriculum committees are in place, they do not necessarily involve the broadened group of stakeholders needed to keep the curriculum in line with current health standards, community needs, and the expectations of future employers. Fourth, schools may not have a policy on academic independence.

These finding suggests that middle-level institution faculty/staff have limited opportunities to help renew the curriculum at their institutions or to test innovative teaching approaches.

Recommendations

- Establish curriculum committees in institutions that do not have one, and link to regulatory bodies and other stakeholders
- Involve faculty, students, regulatory bodies, and other stakeholders in the curriculum committee
- Work with regulatory bodies to establish standardized curricula for each cadre that cuts across institutions and training levels
- Consider harmonizing curricula for all cadres such that each cadre is exposed to the same information and is made to understand his/her role in providing care and/or go through training as a team (Stokowski 2011[32])
- Support regulatory bodies to publish current curricula on-line for adaptation by all training institutions and to participate in the assessment of teaching quality at the institutions that provide their membership
- Include national priorities, such as the KEPH, as a common unit in the curriculum
- Work with various actors in the system, including Ministries and health care employers and patient advocates, to ensure that curricula content is responsive to public health issues
- Capacity Kenya work with a coordinating committee or training institution and regulatory body to conduct a demonstration curriculum review.

Strengthening clinical placements

During the PNA, students, faculty and clinical instructors raised several concerns regarding the effectiveness of clinical placements. These included:

- A shortage of clinical faculty to supervise students during practica
- Students' lack of preparedness due to insufficient or outdated knowledge
- Resource shortages that prevented students from being able to practice and/or demonstrate skills during assessment and that prevented preceptors from being able to adequately teach necessary skills
- Clinical instructors who lack training in mentoring/precepting
- Inadequate or missing linkages between clinical placement sites and training center, including insufficient linkages between faculty who teach theory and clinical instructors
- A lack of coordination between faculty and clinical instructors for the purpose of assessing student progress.

[32] Stokowski 2011' "Overhauling Nursing Education" Medscape Nurses.

The clinical instructor is often a practicing nurse who is caring for patients in addition to having the responsibility to mentor student nurses doing their practical experience. Students stressed that clinical instructors were "very busy and therefore had less time for instruction" and that "the facility does not have enough doctors on board [which] reduces and limits the clinical experiences that could have been shared with students." Clinical instructors also reported receiving little training or supervision for their roles. This stress and lack of role preparation may lead clinical instructors to treat students with less respect that students expect.

Furthermore, faculty do not always prescribe particular skills/competencies that students are supposed to attain in each clinical practicum. Rather the practicum experience is often left to the particular clinical instructor. This practice leads to an uneven quality of experience and learning. In addition, students assert that there is some gender bias in the experience they have with male students getting more of the technical skills and female students getting more of the less technical skills such as bed-making and bathing patients.

Data from client exit interviews supported concerns that clinical practica need to be strengthened. Clients do not always consider students to be qualified health care providers, though much is being delegated to students. According to the Registrar, the NCK, clients no longer accept care given by inexperienced student nurses and want them to be better supervised and gain their practical experience elsewhere—such as a skills lab where they can acquire proficiency prior to practicing on actual patients.

Considered together, both quantitative and qualitative PNA data point to the need for clinical training to be organized in a more formal manner, for linkages between classroom and clinical faculty to be considerably strengthened, for clinical objectives to be standardized and shared, and for overall increased support to be provided to students during clinical rotations.

Recommendations

- Broaden the selection criteria and expand the number of clinical placement sites in order to expose students to levels one through three and other relevant health facilities. This includes giving students more exposure to and experience in rural health care centers if possible.
- Involve clinical instructors as faculty in students' practical skills training and disciplinary issues in the training institution
- Strengthen linkages between faculty and clinical instructors to improve student supervision at placement sites
- Integrate clinical instructor roles into their job descriptions, and include appropriate incentives for these roles
- Provide capacity building in mentoring/precepting for clinical instructors (related to recommendation #2 under Supporting Faculty and Clinical Preceptors).

Supporting faculty and clinical preceptors

Faculty members and clinical instructor play key roles in ensuring that students learn what is needed to provide high quality health care. PNA data indicates that faculty and clinical instructors both need more support to be effective in their jobs. Several areas of concern emerged under the faculty standard. These included shortages of faculty and clinical instructors, inadequate support for training for faculty and clinical instructors, insufficient mentorship and supervision for faculty, outdated or lack of written job descriptions, and a lack of faculty involvement in updating curricula and systems at some training institutions.

Recommendations

- Ensure that all faculty and staff have current job descriptions that accurately reflect their roles and adequate supervision
- Provide more mentoring and supportive supervision to faculty members and clinical instructors
- Increase training opportunities for faculty and clinical instructors in both content and teaching methods
- Ensure that all training institutions have requisite policies on faculty recruitment, retention, and participation in research, among others.

Nondiscrimination and equal opportunity between women and men in education and occupation

PNA findings suggest the need to take policy, program, and community action to decrease occupational segregation and sexual harassment, and to further study the existence of, and the intersection between, pregnancy and family responsibilities discrimination. Balancing family responsibilities and work appear to pose challenges to full participation for female students and faculty, a conflict that requires a life cycle, family-friendly, and woman-friendly perspective in health training policy and planning. It also appears that some willing male candidates may experience cultural and institutional obstacles entering nursing and other occupations that are seen as female-specific and these obstacles should be removed. Evidence of these gender constraints show the need to actively promote equal opportunity and treatment in health training institutions with respect to specific barriers to entry, performance, and retain students and faculty.

Recommendations. There are five broad recommendations:

- Health and education ministries, regulatory bodies, and training institution leaders should reach consensus on how equal opportunity and non-discrimination should be integrated into the health provider education system.
- The MOH should undertake a situational analysis to identify existing equal opportunity policies, and if they exist, create sector-wide awareness.
- Health Ministries should convene a task force to develop a plan to develop, revise, and implement non-discrimination and equal opportunity policies.

- These ministries should sponsor further research to document the forms and severity of sexual harassment, family responsibility, and pregnancy discrimination.
- The Ministry of Education should help foster understandings of gender equality into tomorrow's health workforce starting in primary and secondary schools.

Specific recommendations for each sub-area are also presented below.

Occupational segregation

- Eliminate gender stereotypes in curricula
- Develop institutional recruitment, admission, and retention policies to assure non-discrimination and equal opportunity to pursue and advance in all occupations
- Promote equality in recruitment, targeting male entry into "female" health occupations and vice versa
- Increase available dormitories for both male and female students
- Offer social support to men and women who choose "nontraditional" health occupations
- Ensure that male and female students demonstrate the same competencies prior to completion of training
- Develop a communication strategy to change societal beliefs about essential male and female traits, the relative value of "women's work," and men's equal sharing of family responsibilities
- Analyze the reasons for the concentration of men and women in certain faculty positions.

Sexual harassment

- Develop or apply policies and programs to protect students from sexual harassment, including zero tolerance and sanctions for faculty who practice *quid pro quo* sexual harassment
- Develop new, or enforce existing, codes of conduct that define and prohibit sexual harassment, including termination of faculty members who sexually harass students
- Orient students and faculty on sexual harassment
- Create a "safe space" to anonymously report sexual harassment without fear of reprisal
- Assess risk of sexual harassment and assault in hospital wards; implement prevention and response measures accordingly.

Pregnancy and family responsibility discrimination

- Through policy development or implementation, enable students and faculty with family responsibilities to engage in education and employment without discrimination and, to the extent possible, without conflict between work and family responsibilities

- End punitive policies or practices that target pregnant female students and introduce alternatives to reduce dropout rates
- Encourage male faculty and students to take paternity leave to relieve the burden of family responsibilities, taking into account cultural factors and expectations in educational and certification requirements such as bridging programs
- Engage with professional bodies in advocacy to ratify ILO conventions to ensure that maternity and family responsibilities are not sources of discrimination in access to education and employment
- Assure unbiased vocational counseling in high school
- Offer FP counseling services free of charge to all students
- Engage families and communities in support of girls' education and delayed marriage.

Other recommendations

Policy and Implementation. Data on the institutional policy environments with respect to equal opportunity, fair treatment and non-discrimination were not collected in the PNA, though a policy assessment is planned for 2011. It is important to note that Moi University established an Institute for Gender Equity, Research, and Development (IGERD), and attempted to mainstream gender in policy documents to ensure equal educational opportunities for students, faculty, and support staff in the University's strategic plan (2006-2014)[33]. This institute's achievements and challenges in policy-making around the issues discussed above, as well as better practices in policy implementation, should be included in the institutional policy assessment.

Curriculum content. There is currently little information about the extent to which health training curricula have incorporated the socio-economic, demographic, cultural, and gender drivers of health problems, national gender strategic priorities [34], or respond to documented public health problems such as gender-based violence or traditional practices that have an impact on health (i.e., female genital cutting). These are potential areas to include in the curriculum review recommended above.

[33] www.mu.ac.ke/igerd/index/html

[34] Republic of Kenya National Gender and Development Policy points to the need to address violence, abuse, the needs of adolescent mothers/ARH including FP in health services. Mainstreaming Gender into the Kenya National HIV/AIDS Strategic Plan 2000-2005 is another source of curriculum guidance, which includes a gender analysis tool.

NEXT STEPS

Action items to address issues raised in the Performance Needs Assessment, as recommended by stakeholders at the Stakeholder Working Group in September 2010, are included in Appendix G. Since that meeting, Capacity Kenya has been working with key stakeholders on some of the issues identified. To date, these actions have included:

- Facilitating the Ministries of Health to cost the implementation of the National Health Training Policy (NHTP) before submitting the policy to the Cabinet for approval. If approved, the policy will establish a mechanism designed to strengthen and improve learning and the sharing of resources for learning.
- Supporting the health professional bodies to review and develop core curricula guidelines. Capacity Kenya is supporting the Clinical Officers Council (COC) to review their core curriculum for BSc in Clinical Medicine. Capacity Kenya has also supported the development of the Kenya Nutritionists and Dieticians Institute (KNDI) core curricula guidelines for certificate, diploma and BSc programs. The aim of these efforts is to ensure harmonization and standardization of training.
- Facilitating health professional bodies to strengthen their CPD accreditation systems. Specifically, Capacity Kenya has supported the COC review its CPD accreditation guidelines.
- Supporting health professional bodies to develop strategic plans to improve their ability to carry out their mandates and provide support to their members. Capacity Kenya has facilitated the NCK, COC and KNDI to develop strategic plans. The project has also facilitated the development of strategic plans for Kenya Clinical Officers Association (KCOA), the Association of Kenya Medical Laboratory Scientific officers (AKMLSO), the Kenya Dental Association (KDA), the Kenya Medical Association (KMA), the Kenya Pharmaceutical Association (KPA) and the Pharmaceutical Society of Kenya (PSK).
- Facilitating health professional bodies to strengthen their human resources management (HRM) systems. Capacity Kenya is currently working with NCK and KMA to strengthen their HRM systems.
- Engaging the Ministries of Health, Ministry of State for Development of Northern Kenya and other Arid Lands, and other stakeholders to establish an educational approach that facilitates students' clinical rotations in remote and underserved regions in Kenya. This is an effort to increase clinical placement sites for students' rotations, with specific emphasis on levels 1-3 of the health system.
- Developing *e*learning methods as an innovative approach at the pre-service level, and supporting IST in resource scarce and remote areas of Kenya. Capacity Kenya has initiated an *e*learning program for FP and reproductive health at the KMTC Kitui Centre of Excellence (COE). This program will also support IST of students in remote areas, as well as CPD programs for health workers.

BIBLIOGRAPHY

Anker, R. 1997. "Theories of Occupational Segregation by Sex." *Int Labour Rev* 136(3):315-339.

Anker, R., H. Malkas, A. Korten. 2003. *Gender-Based Occupational Segregation in the 1990s*. International Labour Office.

Anti-Discrimination Commission. January 2007. Direct and Indirect Discrimination. Queensland, Australia: Anti-Discrimination Commission. Available at: http://www.adcq.qld.gov.au/Brochures07/direct.html. Accessed March 2. 2011.

BBC News Africa. October 7, 2010. "Hundreds of Kenyan Teachers Sacked Over Sex Abuse."Available at: http://www.bbc.co.uk/news/world-africa-11492499. Accessed March 1, 2011.

Corlett, J. 2000. "The Perceptions of Nurse Teachers, Student Nurses and Preceptors of the Theory-practice Gap in Nursing Education," *Nurse Educ Today.* Aug; 20(6): 499-505.

Gregory, R.F. 2003. *Women and Workplace Discrimination: Barriers to Gender Equality*. New Brunswick, New Jersey, and London: Rutgers University Press.

International Labour Conference, 98th Session. 2009. *Gender Equality at the Heart of Decent Work Report VI*. Geneva, Switzerland: International Labour Office. Available at: http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_105119.pdf. Accessed March 1, 2011.

International Labour Organization. Kenya: Ratification Status of Up-to-Date Conventions. Available at: http://www.ilo.org/dyn/natlex/country_profiles.ratifications?p_lang=en&p_country=KEN. Accessed March 2, 2011.

International Labour Organization. 2006. International Training Center, Gender Equitable Labor Standards Course. Turin, Italy.

Kabubo-Mariara, J. 2003. "Wage Determination and the Gender Wage Gap in Kenya: Any evidence of gender discrimination?" AERC Research Paper 132 African Economic Research Consortium: Nairobi, Kenya. Available at : http://www.aercafrica.org/documents/rp132.pdf. Accessed March 2, 2011.

Newman, C. 2009. "Conceptual and Practical Foundations of Gender and Human Resources for Health." Chapel Hill, NC: Capacity Project. Available at: http://www.capacityproject.org/images/stories/files/foundations_gender_hrh.pdf. Accessed March 1, 2011.

Onsongo, J. 2006. "Gender Inequalities in Universities in Kenya." In C. Creighton and F. Yieke, eds. *Gender Inequality in Kenya*. UNESCO. Available at: http://unesdoc.unesco.org/images/0014/001458/145887e.pdf. Accessed March 2, 2011.

Republic of Kenya, 2000. National Gender and Development Policy. Ministry of Gender, Sports, Culture and Social Services. Nairobi, Kenya: 4, 24.

Republic of Kenya. 2006. ACT NO. 3 of 2006—Sexual Offences Act Sexual Offenses. 24(4): 16. Available at: http://www.kenyalaw.org/kenyalaw/klr_app/frames.php. Accessed March 2, 2011.

Republic of Kenya, 2007. The Employment Act, Nairobi. Available at: http://www.hsph.harvard.edu/population/aids/kenya.labor.07.pdf. Nairobi, Kenya: 12, 370.

Republic of Kenya, Commission for Higher Education, 2008. Handbook on Processes for Quality Assurance in Higher Education in Kenya. Available at: http://www.che.or.ke/downloads/Handbook.pdf.

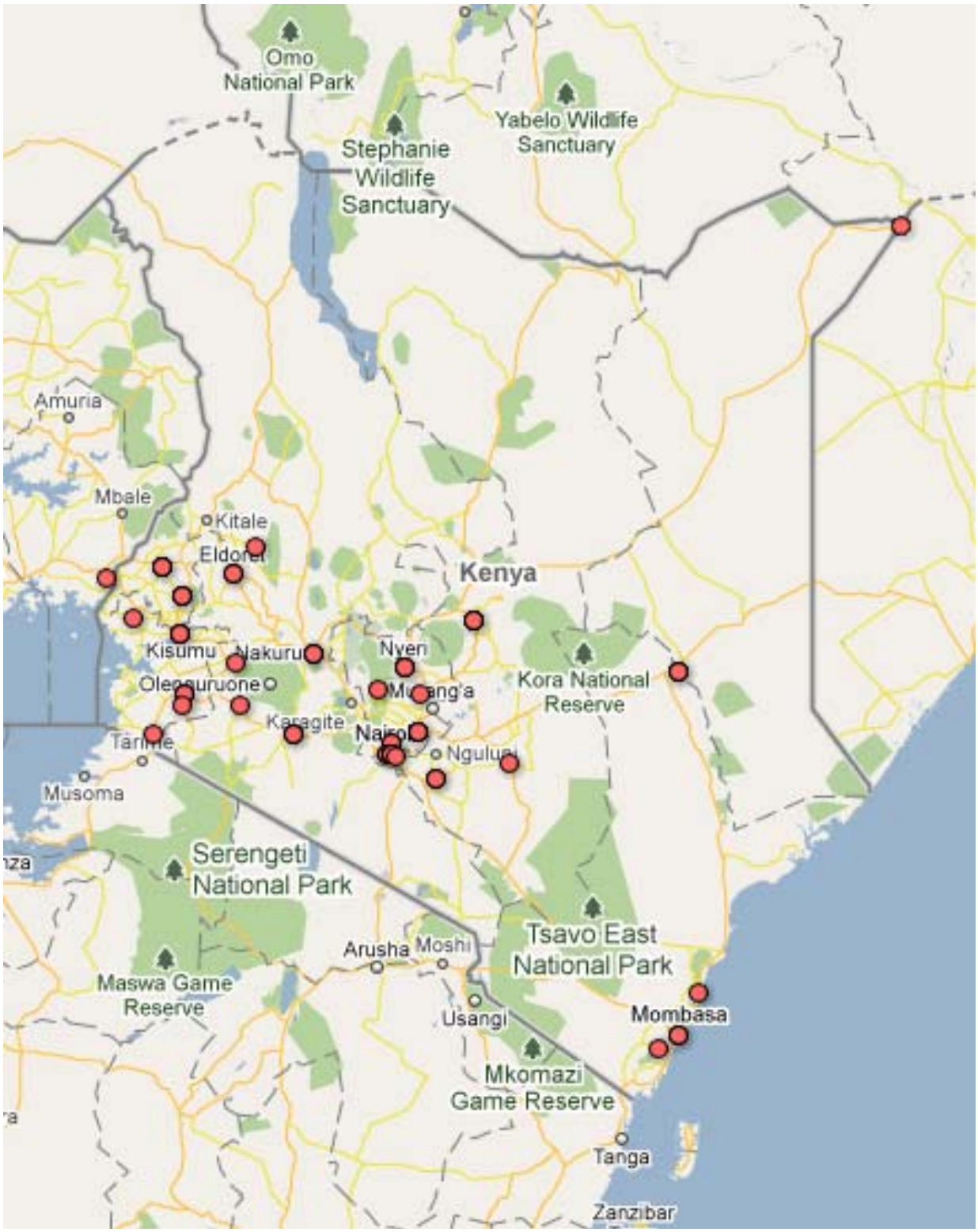
WorkLifeLaw, A Center of UC Hastings College of the Law. "Family Responsibilities Discrimination Fact Sheet." Available at: http://www.worklifelaw.org. Accessed March 1, 2011.

World Health Organization. 2001. "Transforming Health Systems: Gender and Rights in Reproductive Health." Geneva, Switzerland: World Health Organization. Available at: http://www.who.int/reproductivehealth/publications/gender_rights/RHR_01_29/en/index.html. Accessed March 2, 2011.

APPENDIX A: STAKEHOLDER WORKING GROUP MEMBERS

NO.	NAME	DESIGNATION	ORGANIZATION
1	Dr. Stanley Kiplangat	Health Services Manager	CHAK
2	Elizabeth Makokha	Principal	Nazereth College/KEC
3	Henry Nasengo	Registrar	KMTC- NAIROBI
4	Grace Odwako	HRDO	MoMS
5	Dr. Stephen Okeyo	Associate Prof.	GLUK
6	Theresa Odero	Director/ School of Nursing	UON
7	Dr. Julius Rogena	DMOH Machakos	MoPHS
8	Dr. Samson Wanjala	Snr Lecturer and Member MP&DB	UON/KMP&DB
9	Evangeline Mugoh	Senior Nursing Officer	NCK
10	Dr. B.O.N. Oirere	Senior Lecturer	KEMU
11	Dr. Joel Rakwar		JHPIEGO
12	Titus Munene	Training Manager	KEC
13	David Njoroge	ADHRD	MoPHS
14	Prof. Paul Ayuo	Dean MUSOM	Moi University
15	Ann Nduta Gathi	Dep. Principal	Kijabe
16	Alvin Njuguna	PHRMO/MOMS	MoMS- Nairobi
17	Mrs. Ruth Mworia	Dep. Registrar	KMTC - Nairobi
18	Dr. Deborah Okumu	DMOH	Kangundo District
19	Micah Kisoo	CCO	MoMS Nairobi
20	Titus Waita	HRMO	MoPHS / Nairobi
21	Dr. J. Machoki M'imunya	UON Representative	UON
22	Prof. Simon Kangethe	Associate Prof.	Moi University
23	Dr. Esther Ogara	Head CPD	MoMS Nairobi
24	Mary Nyamboki	Senior Nursing Officer	NCK
25	Dr. Frank Mwangemi	Asst. Director	FHI

APPENDIX B: MAP OF DATA COLLECTION SITES



APPENDIX C: LETTERS OF APPROVAL FOR DATA COLLECTION: PHASE I & II

MINISTRY OF PUBLIC HEALTH AND SANITATION
AND
MINISTRY OF MEDICAL SERVICES

Telegrams:"MINIHEALTH",
Nairobi
Telephone Nairobi 2717077
Email:
pphs@health.go.ke/ps@health.go.ke
When replying please quote

AFYA HOUSE
CATHEDRAL ROAD
P O Box 30016
NAIROBI

19th November 2009

REF No.: MPHS/DEV/1/2/34

The Provincial Directors of Medical Services and Public Health & Sanitation

Nyanza Province	North Eastern Province
Central Province	Eastern Province
Coast Province	Nairobi Province
Rift Valley Province	Western Province

District Directors of Medical Services & District Directors of Public Health & Sanitation

Taita Taveta District	Kakamega District
Mombasa District	Bungoma District
Nairobi District	Kisumu District
Meru District	Kisii District
Nyeri District	Keiyo District
Thika District	Mandera District
Garissa District	Narok District
Machakos District	Nakuru District

RE: PERFORMANCE NEEDS ASSESSMENT (PNA) –PHASE 1

The Ministry of Medical Services and The Ministry of Public Health and Sanitation (MoMS & MoPHS), Christian Health Association of Kenya (CHAK) and the Kenya Episcopal Conference (KEC) supported by Capacity Kenya/ IntraHealth International funding through the United States Agency for International Development (USAID), will conduct a country-wide Performance Needs Assessment (PNA) in public, private and Faith-Based Organization's health facilities and training institutions.

The assessment will be conducted in two phases. The first phase of PNA will target 67 health facilities at level 2-5 of KEPH that were randomly selected in all the provinces (see attached list) in 16 districts. The second phase will target pre-service and in-service training institutions, clinical placement sites and assessment of competences of health workers at levels 1 and 6.

The first phase of the PNA will be conducted from **30th Nov 2009 to 12th Dec 2009.** The health workers targeted in this exercise are; Medical Laboratory Technologists/Technicians, Nurses (Registered and Enrolled), Clinical Officers, Pharmacists, Pharmaceutical Technologists and Medical doctors.

The objectives of phase one assessment are to:

1. Identify competency gaps of health workers at select sites
2. Assess health worker views of their performance and perceived barriers or challenges
3. Identify key determinates of health worker performance
4. Establish perceived level of support that regulatory bodies provide to health workers

In order to address these objectives, data collection tools will include health facility audit, health provider survey, client-provider observation (HIV/AIDS-testing & counseling, IMCI, & Family Planning), Checklist on Essential Obstetric Care and Malaria case management. In addition key Informant interview and focus group discussions (FDGs) guides will be used.

We have taken appropriate measures to ensure the PNA complies with fundamental ethical principles of research as will be explained and demonstrated by our data collection teams. Kindly support and facilitate the research teams to access the health facilities/departments/units and health workers needed to successfully carry out this assessment.

Dr. F. Kimani
Director Medical Services -MoMS

Dr. S. Shariff
Director Public Health and Sanitation-MoPHS

CC. Mr. Samuel Kaloki
DD/HRM
Ministry of Public Health and Sanitation

Mr. A.A. Nyanchoga
DD/HRM
Ministry of Medical Services

Attached: List of health facilities and scheduled dates
Copy of PNA Protocol- phase 1

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegrams: "SCIENCETECH", Nairobi
Telephone: 254-020-241349, 2213102
254-020-310571, 2213123.
Fax: 254-020-2213215, 318245, 318249
When replying please quote

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: NCST/RRI/12/1/MAS/114

Date: 8th June, 2010

Anastasiah Nyamilu Kimeu
Capacity Kenya
P.o Box 66726-00800
Nairobi

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Kenya Performance Needs Assessment of Health Worker Training Institutions and Internship/Practicum Sites"*** I am pleased to inform you that you have been authorized to undertake research in ***All Districts*** for a period ending ***30th September, 2010.***

You are advised to report to the ***District Commissioners, the District Education Officers*** and ***the Medical Officers of Health in all Districts*** before embarking on the research project.

On completion of the research, you are expected to submit two copies of the research report/thesis to our office.

P.N.NYAKUNDI
FOR: SECRETARY
Copy to:

The District Commissioners
All Districts

The District Education Officers
All Districts

The Medical Officers of Health
All Districts

APPENDIX D: FACILITIES WHERE DATA WAS COLLECTED: PHASE I AND II

Phase I	
Health Facilities	**District**
Phase IA:	
Bungoma	Bungoma
Bungoma District Hospital	Bungoma
Khaoya Dispensary	Bungoma
Naitiri health centre	Bungoma
Al Gadhir Dispensary	Dagoretti
Kianjokoma health centre	Embu
Al Ansar clinic	Garissa
Al Farouq Dispensary	Garissa
Balambala Sub District Hospital	Garissa
Garissa Provincial General Hospital	Garissa
Iten District Hospital	Iten
Ileho Health Centre	Kakamega
Ingoste Dispensary	Kakamega
Kakamega District Hospital	Kakamega
St Elizabeth Mukumu Mission Hospital	Kakamega
Biretwa Health Centre	Keiyo
Chepkorio Health Centre	Keiyo
Keiyo District Hospital	Keiyo
Dreamland Health Centre	Kimilili
Irondi Dispensary	Kisii
Isecha Health Centre	Kisii
Itolo Nursing Home	Kisii
Kisii District Hospital	Kisii
Aga Khan Hosp-Kisumu	Kisumu
Lumumba Health Centre	Kisumu
Nyanza Provincial General Hospital	Kisumu
Kaviani Health Centre	Machakos
Machakos District Hospital	Machakos
Ngelani Dispensary	Machakos
Ashabito Health Centre	Mandera
Borehole Eleven Dispensary	Mandera
Mandera District Hospital	Mandera
Gatuanyanga Dispensary	Meru
Karandini Dispensary	Meru
Kibugua health Centre	Meru
Meru District Hospital	Meru
Mwonge Medical Clinic	Meru
St Michael Cheera Dispensary	Meru
Afya Njema Clinic	Mombasa
Coast Provincial General Hospital	Mombasa
Pandya Hospital	Mombasa
Ukumbusho Clinic	Mombasa
Mbagathi District Hospital	Nairobi
Avenue Nursing Home	Nairobi
Baba Dogo Health Centre	Nairobi
Dagoretti Health Centre	Nairobi

Phase I	
Health Facilities	**District**
Mater Hospital	Nairobi
Mutuini Health Centre	Nairobi
Nairobi women's Hospital	Nairobi
St Mary's Hospital-Langata	Nairobi
Dundori Health Centre	Naivasha
FITC Dispensary	Nakuru
Nakuru Provincial General Hospital	Nakuru
Narok District Hosp	Narok
Ntulele Dispensary	Narok
Olokurto Health Centre	Narok
Gichiche Health Centre	Nyeri
Kiamuya Dispensary	Nyeri
Nyeri Provincial General Hospital	Nyeri
Tumutumu PCEA Mission Hospital	Nyeri
Bura Mission Dispensary	Taita Taveta
Divine Mercy Mission Hosp	Taita taveta
Taita Taveta District Hospital	Taita Taveta
Moi Voi District hospital	Taita Taveta
Tausa Health Centre	Taita Taveta
Assumption Sisters (Kamarini)	Thika
Kirwara Health Centre	Thika
Ruiru Health Centre	Thika
St Augustine Dispensary	Thika
Thika District Hosp	Thika
Phase IB:	
Eldoret (Uasin Gishu) District Hospital	Eldoret
Moi Referral & Teaching Hospital	Eldoret
Karurumo RHTC	Embu
St Luke's Mission Hospital	Kinangop
Kabarnet District Hospital	Kabarnet
Kericho District Hospital	Kericho
St. Claire's Kaplong Hospital	Kaplong
Kapsabet District Hospital	Kapsabet
AIC Kapsowar Hospital	Kapsowar
Kijabe Mission Hospital	Kijabe
Kilifi District Hospital	Kilifi
Kisumu District Hospital	Kisumu
Chulaimbo RHTC	Kisumu
Kitui District Hospital	Kitui
Fidenza Mission Hospital (also known as Consolata Hospital)	Kyeni
Portreitz District Hospital	Mombasa
Murang'a District Hospital	Murang'a
Mathare DH	Nairobi
Nairobi Hospital	Nairobi
Aga Khan University Hospital	Nairobi
Nazareth Hospital	Nairobi
Consolata Hospital Ortum	Ortum
Siaya District Hospital	Siaya

Phase I	
Health Facilities	**District**
Tabaka Mission Hospital	Tabaka
Tenwek Mission Hospital	Tenwek
Tiwi RHTC	Kwale

Phase II		
Name of Training Institution	District	Level of Training Institution
Eldoret Polytechnic	Eldoret	Middle level
KMTC Eldoret	Eldoret	Middle Level
Moi University	Eldoret	Tertiary level
University of East Africa-Baraton-	Eldoret	Tertiary level
Karurumo Rural Health Training Centre	Embu	Middle level
KMTC Garissa	Garissa	Middle level
St Luke's school of nursing	K inangop	Middle level
KMTC Kabarnet	Kabarnet	Middle level
KMTC Kakamega	Kakamega	Middle level
KMTC Kapkatet	Kapkatet	RHTC
St. Clare's Kaplong	Kaplong	Middle level
Ol'lessos Tech Tr. Institute	Kapsabet	Middle level
AIC School of Nursing Kapsowar	Kapsowar	Middle level
Kijabe Mission School of Nursing	Kijabe	Middle level
KMTC Kilifi	Kilifi	Middle level
KMTC Kisii	Kisii	Middle level
KMTC Kisumu	Kisumu	Middle level
Chulaimbo Rural Health Training Center	Kisumu	Middle level
Great Lakes University	Kisumu	Tertiary level
KMTC Kitui	Kitui	Middle level
Fidenza School of Nursing	Kyeni	Middle level
Maseno school of nursing	Maseno	Middle level
Maseno University	Maseno	Tertiary level
KMTC Port Reitz	Mombasa	Middle level
St. Elizabeth Mukumu	Mukumu	Middle level
KMTC Murang'a	Muranga	Middle level
AMREF International Training Centre	Nairobi	Middle level
Avenue Nursing Home	Nairobi	Middle level
KMTC Mathare	Nairobi	Middle level
KMTC Nairobi	Nairobi	Middle level
Nairobi Hospital Cicely McDonnell School of Nursing	Nairobi	Middle level
St. Mary's Medical Training College	Nairobi	Middle level
Aga Khan University of EA.	Nairobi	Tertiary level
University of Nairobi	Nairobi	Tertiary level
Kings Medical College	Nyeri	Middle level
KMTC Nyeri	Nyeri	Middle level
Tumutumu PCEA School of Nursing	Nyeri	Middle level
Mt. Kenya University	Nyeri	Tertiary level
Consolata H. Ortum	Ortum	Middle level

Phase II		
Name of Training Institution	District	Level of Training Institution
KMTC Siaya	Siaya	Middle level
St. Camillus Tabaka	Tabaka	Middle level
Tenwek School of Nursing	Tenwek	Middle level
Tiwi Rural Health Training Center	Tiwi	Middle level

APPENDIX E: LIST OF STUDY TOOLS

Phase I

Health facility audit tool
Health provider survey
Key informant interview guide
Malaria case management assessment tool
Observation checklist for HIV testing and counseling
Observation checklist for IMCI case management
Observation checklist for FP counseling, case 1
Observation checklist for FP counseling, case 2
Observation checklist for laboratory diagnosis of malaria
FGD and key informant interview consent form
Informed consent form: client (IMCI, HIV, FP)
Informed consent form: medical laboratory health worker observation (malaria)
Informed consent form: health provider survey
Informed consent form: health worker observation (IMCI, HIV, FP)
Informed consent form: malaria case management assessment
Informed consent form: medical laboratory health worker observation
Health Provider Survey (Nutritionists, PHOs, PHTs, CHEWs, nurses, midwives)
FGD: community members
Interview guide: community health worker

Phase II

PNA Phase II Guideline Questions
Interview guide: client exit
Data collection tool for Directors of Medical Services
Data collection tool for Chairs/Secretaries of Professional Associations
Data collection tool for CEOs of Regulatory and Professional Organizations
FGD guide: students' perceptions on training
Informed consent form: training institutions and internship/placement sites
Informed consent form: clients
Institutional audit tool
In-depth interview guide: clinical instructors/preceptors
In-depth interview guide: school directors
Self-administered questionnaire for clinical instructors/preceptors
Self-administered questionnaire for faculty members
Self-administered questionnaire for school directors/principals/deans
Self-administered questionnaire for training coordinators
Self-administered questionnaire for students
Question List

APPENDIX F: ATTENDEES AT STAKEHOLDER MEETING ON SEPT. 29, 2010

No	Name	Organization	Email address
1	Dr Omondi Vitalis	DMOH Nairobi	tosednar@yahoo.com
2	David Njoroge	MoH	davidmathigi@yahoo.com
3	Dr. Alice Inyangala	MoH	kigadi54@yahoo.com
4	Dr. John Adungosi	FHI	Jadungosi@fhi.org
5	Francis Muthiri	ST. Mary's Langata	fmuthiri@yahoo.com
6	Irene Kimani	AKU	irene.kimani@aku.edu
7	Dr. Rose Misati	MOH	rkwamboka@yahoo.co.uk
8	Joseph Okweso	APHOK/ chairman	joarung08@yahoo.com
9	Linda Komen	Nutritionist/ MoPHS	komenlin@yahooc.om
10	Linda Komen	MoH	micahkisoo@yahoo.com
11	Elizabeth Makokha	Nazereth College/ KEC	elizabeth_makokha@yahoo.com
12	Patrick Njoroge	MoMS/HRM	patricknjoroge25@yahoo.com
13	Eddie Onjoro	Principal/S.O.N. Maseno	schoolofnursingmaseno@gmail.com
14	Titus Munene	Training Manager/KEC	tmaeti@yahoo.com/tmaeati@catholicchurch.or.ke
15	Prof. Okeyo Stephen	GLUK	olusokeyo@yahoo.co.uk
16	Dr. Samson Wanjala	KMPDB	wanajalasm@yahoo.com
17	Samuel Njoroge	DPHO Nrb/ MoPHS	sndumben@yahoo.com
18	Richard Maweu	PTC/PMOs Office Nairobi	maweur@yahoo.com
19	Benson Munyoli	HOD Nursing / KMTC Kitui	benmmuli2004@yahoo.com
20	Rose Kuria	ACNO/ MoMS HQ	kuriareosew2003@yahoo.com
21	Yumiko Nakahara	PFA/ JICA Kenya	Nakahara. Yumiko@jica.go.jp
22	Prof. I. O. Kibwage	Principal / CHS UON	principal-chf@uonbi.ac.ke
23	Dr. Pacifica Onyancha	SADMS/ MoMS	pacificaonyancha@yahoo.com
24	Dr. Ndinda Kusu	SPA/ MSH- SPS	nkusu@msh-kenya.org
25	Dr. James Machoki	UON	mmachoki@uonbi.ac.ke/mmachoki06@yahoo.com
26	Dr. Ochieng W.O.	Dir. BSS/ Pharmacy and Poisons Board	woguta@yahoo.com
27	Dr. Mwala Namasda	JKUAT	philnamasaka@yahoo.com
28	Dr. Betty Chirchir	Engender Health	bettychirchir@yahoo.com
29	Rosemary Ngaruro	CNO/ MoMS	rosemaryngaruro07@yahoo.com
30	Prof. Joash Aluoch	Dean/ School of Medicine - Maseno university	joashaluoch@hotmail.com
31	Isabel Ngugi	Director / Deloitte	ingugi@deloitte.co.ke

32	Dr. Hussein Osman	DMOH Garissa	hkorondo@yahoo.com
33	Solomon Satiah	DPHO Kakamega	mutinyis@yahoo.com
34	Catherine Muriuki	HRMO/ Min. of Labour	catewm08@yahoo.com
35	Mary Njeru	Ag Chairperson, Nursing , Baraton University	wam1njeru@yahoo.com
36	Masad Sheriff	Ds Director SUPKEM MHS	masadshrff@yahoo.com
37	Dr. Daniel Alushula	Med. Sup. Kakamega PGH	danielalushula@yahoo.com
38	Kimani Njoroge	Director / Deloitte	knjoroge@deloitte.co.ke
39	Maimuna.M. Itambo	DHRM / KNH	itambo@knh.or.ke
40	Dr. Jonah Maina	DRH	jonahmwangi@yahoo.com
41	Rosemary Kamunya	Senior Technical Advisor / JHPIEGO	rkamunya@jhpiego.net
42	Salome Assey	Legal Assistant	asseysalome@yahoo.com
43	Steve Gikunda	AMREF	steve.gikunda@amref.org
44	Evangeline Mugoh	SNO/ NCK	evangelinemugoh@yahoo.com
45	Margaret Njenga	RMOI / PGH Nakuru	rvpghnakuru@yahoo.com
46	B.O. Naftal Oirere	Senior Lecturer/ KEMU	bon_oirere@yahoo.com
47	Dr. Judith Bwonya	MoH	judithbwonya2009@gmail.com
48	Milka Kuloba	NO/ MoMS	kulobamilka@yahoo.com
49	Dr. Paul Ayuo	Prof. MUSOM	a_ayuo@yahoo.com
50	Sr. Celine Muojekwu	Principal/ Ortum Nursing School	ortumnursingsch010@yahoo.com
51	Jennifer Kiema	HR/ MoPHS	keimajeniffer@yahoo.com
52	Dr. Godrick Onyango	PDMS/ Kakamega	godrick66@yahoo.co.uk
53	Domnick Abungu	Principal/ AIC Kapsowar	abungudomnick@yahoo.com
54	Justus Kinyua	Principal/ Karurumo RHTC	jkinyuan@gmail.com
55	Dr. D. I. Mwangi	Dep. Admin/ Coast PGH	davemwa80@yahoo.com
56	Peter Waithaka	HRH Specialist/ ASAID Kenya	pwaithaka@usaid.gov
57	Symon Otieno	HRM / JKUAT	otieno@apd.jkuat.ac.ke
58	Dr. S. K. Ngugi	Chairman/ PSK	pskkenya@yahoo.com/ pskngugi@yahoo.com
59	Dr. T. Thiongo	PDPHS / Embu	jenthiongo@yahoo.com/easternpmo@yahoo.com
60	Philomena Maina	Chief Nurse / KNH	philomaina@yahoo.com
61	Isabella Segina	HR/ Nairobi Hospital	isegina@yahoo.com
62	Gladys Wandete	PNO / MoMs	gnwandete@yahoo.com
63	Samwel Kigen	SNO/ DOMC	kigensam@yahoo.com
64	Dr. Samuel Owino	SADMS/PGH Nyeri	samuelonganga@yahoo.com
65	Elizabeth Oywer	Registrar/ NCK	eoywer@nckenya.org
66	Dr. S. Ochola	PDHS / Nairobi	sochola@yahoo.com

67	Mrs. Mary Muchendu	Principal / Kijabe Hospital	prince.ksn@kijabe.net/adminassist_ksn@kijabe.net
68	Evanson Kagotho	Chairman/ KPA	kimkagotho@yahoo.com
69	Salome Kangangi	MoPHS	s.kangangi@yahoo.com
70	Josephat M. Yundu	DCMTC	yundumj@yahoo.com
71	Dr. Jonah Mwangi	Med. Sup./Thika PGH	jonahdoc@yahoo.com
72	Ruth Mutua	MoPHS	rmutua2007@yahoo.co.uk
73	Ruth Musyoki	P.O. / NASCOP	ruthmusyoki@rocketmail.com
74	Tom Aruya	ICT/ Kenya Nutrition and Dietetics Institute	info@nutritiondieteticskenya.org
75	Agnes Sitati	CNDAK	ansitati@yahoo.com
76	Fridah Omwangale	SPHO / MoPHS	fomwangale@yahoo.com
77	Dr. John Okoth	COD/Health Sciences/Masinde Muliro University	okoth_jm@yahoo.com
78	Dr. Leigh Shamblin	IntraHealth International	lshamblin@intrahealth.org
79	Chris Penders	IntraHealth International	cpenders@intrahealth.org
80	Katia Peterson	IntraHealth International	kpeterson@intrahealth.org
81	Dr Anastasiah Kimeu	Capacity Kenya	akimeu@intrahealth.org
82	June Mwende	Capacity Kenya	jmwende@intrahealth.org
83	Charles mito	Capacity Kenya	cmito@intrahealth.org
84	Daniel Kapsoot	Capacity Kenya	dkapsoot@intrahealth.org
85	Meshack Ndolo	Capacity Kenya	mndolo@intrahealth.org
86	Linah Vihenda	Capacity Kenya	lvihenda@intrahealth.org
87	Dr. Ndirangu Gathari	Capacity Kenya	gthari@intrahealth.org
89	Eunice Mutemi	Capacity Kenya	emutemi@intrahealth.org
90	Lydia Makendo	Capacity Kenya	lmakendo@intrahealth.org

APPENDIX G: ACTION PLANS DEVELOPED BY STAKEHOLDERS

Root Causes	Key Recommendations
Strengthening Institutional Linkages	
1. No policy structure to support linkages. 2. No coordinating mechanisms to facilitate the linkages. 3. Stakeholder engagement. 4. No defined career progression path. 5. No plan for HRD. 6. No bridging courses for career development.	1. Develop policy structure framework. 2. Develop coordinating mechanisms. 3. Design plan for HRD. 4. Design career progression path. 5. Need for more flexibility from established institutions for higher education in health. 6. System needs to create quality mechanisms because they don't exist. 7. Develop a joint regulatory body.
Strengthening Institutional Linkages	
<u>Stakeholder involvement</u> 1. Lack a forum where stakeholders meet 2. Lack of involvement of the consumer in developing the curriculum 3. Weakness in the regulatory framework 4. Lack of platform for accessing and sharing information at all levels (faculty, students, policy makers) <u>Accreditations and standards</u> 1. Lack of regulatory bodies in some cadres 2. Unclear linkage between the different regulatory bodies e.g. CHE 3. Lack of independence of the regulatory bodies from the institutions	<u>Stakeholder involvement</u> 1. Have an Interagency Coordinating Committee (ICC) where issues are discussed 2. Expanding the number of the major stakeholders in curriculum development .E.g. local government. 3. Providing a legal framework that binds stakeholder involvement. 4. Develop an online/virtual communication channel e.g. magazines, blogs/websites etc <u>Accreditations and standards</u> 5. Establish regulatory bodies where they do not exist. 6. Find out a mechanism for linking the different regulatory bodies so that they can harmonize their activities and becomes a legal binding process 7. Have an independent umbrella body to carry out the functions of the regulatory services
Clinical Placement	
1.Curriculum overload 2. Poor linkages between faculty members and clinical instructors. 3. Poor linkages between training institutions and health facilities. 4. Lack of uniformity and transparency in assessment. 5. Abuse of authority in assessments. 6. Favoritism on clinical placement sites. 7. Shortage and lack of well established training for clinical instructors.	1. Broaden the Selection criteria and number of clinical placement sites to expose students to levels 1-3 and other relevant health facilities including private institutions. 2. Strengthen faculty/clinical preceptor system linkages to improve on student supervision in placement sites. 3. Integrate clinical instructor's roles in job descriptions and include appropriate incentives
Curriculum	

Root Causes	Key Recommendations
1. Curriculum is not congruent with the current role expectations 2. Lack of clear training policy in the health field 3. Lack of supervision and leadership role in the graduates completing school 4. There are many challenges in curriculum implementation 5. Lack of monitoring and evaluation of the whole process 6. Lack of guidelines on periodic review of the curriculum	1. Curriculum should be standardized for all health institutions 2. Regulatory bodies to reinforce the use of curriculum 3. There should be guidelines on review of the curriculum e.g after every 3 years and be approved by the regulatory body 4. The syllabus should be very specific and standardized from the regulatory body and in corporate basic requirements 5. Introduce a quality management system 6. Regular monitoring and evaluation of the curriculum 7. Modify curriculum where problems have been identified 8. The curriculum to have a clause ensure protection of public from those unqualified medics 9. Put standards online so that stakeholders can have access to it 10. Conduct research on curriculum implementations
Faculty	
a) No staff development policy to guide on the trainings for the faculty. b) Inadequate resources for the faculty to receive training c) No mentorship programs and policies in place. d) The faculty may not be willing to be mentored e) The leadership at the institutional level does not make it clear to faculty on their job description. f) Shortage in staff leading to task shifting	➢ Ensure training institutions have requisite policies on faculty recruitment, mentorship, retention and participation in research. ➢ Ensure the job descriptions are given to the faculty. ➢ Increase the training opportunity to the faculty. ➢ Ensure there are national guide line and, ➢ Ensure that there are national policies apart from the institutional policies on job description of the faculty. ➢ Ensure that the regulatory bodies are doing their work.
Resources	
1. Disparity 2. Problems with regulations. 3. Inefficient use of health resources. 4. Segmentation. 5. Unhealthy Competition in learning institutions. 6. CPD is not regulated for some cadres/non existence.	1. **Increased ICT resources in middle level and strengthen Resources in Institutions.** 2. **Establish and Strengthen Of campus and improve on campus learning resources** 3. **Improve Integration have a structured database of learning Resources.** 4. Empower learning institutions to have bandwidth. 5. Improve parity in resourcing. 6. Establish CPD or Strengthen.

Root Causes	Key Recommendations
Gender	
1. Recommendation set #1: a. Inadequate Space and accommodation b. Institutional challenge such as lack of policies, inadequate staff c. Cultural orientations which do not allow the male nursing students to perform certain training 2. Sexual harassment caused by cultural orientations and lack of institutional policies to address 3. Regulatory bodies and institutions have not embraced gender imbalances	1. Recommendation set #1: o Provide adequate facilities o Build training institutions for males and females separately o Institutions to draw policies that are appropriate to both male and female students 2. Recommendation set #2 o Students should be given space to freely report and express their experiences regarding sexual harassment o Regulatory bodies and institutions should Standardize the curriculum and work place policies to protect students and health workers from sexual harassment to protect 3. Recommendation set #3 o Consider equal ratio of male and female in training and work place o Provide a flexible training system that allows health workers to attend training in the evening o Employ more health workers to enable them advance their training
Emerging Issues – 1	
1. Need to address non-monetary motivators 2. Attitudes of health workers 3. Ethical/legal issues 4. Curriculum development 5. Faculty development 6. Disconnect between training and HR needs 7. Lack of empowerment of regulating bodies 8. Quality improvement	1. i.e. housing, food availability, schools, etc as important issues impacting health worker motivation. 2. Empower workers, creating a positive working environment, mentoring and supervision 3. Aware of rights, roles, and responsibilities. Understanding of boundaries and scopes of practice 4. MoH involvement—recommendations from other groups 5. Training of faculty in teaching methodologies. Perhaps 'sistering' with foreign universities. 6. Evidenced based decision making. HRIS in order to collect, analyze, and share REAL TIME data. Partnership between MoH, regulators, and trainers in terms of focus and forecast HR needs. 7. Empower regulators to enforce polices and regulations. 8. Striving to achieve excellence (i.e. International

Root Causes	Key Recommendations
	standards of training, practice, and care)
Emerging Issues – 2	
1. Constitutional dispensation – Resource Implication **2.** Expansion of student population does not match resources -lack of foresight/poor planning, no proper guidelines **3.** Harmonization of curriculum across institutions/colleges e.g. Moi, Kenyatta, Nairobi, KMTC-Standardization of curriculum, rigorous training, laying down selection criteria **4.** Regulatory Bodies leadership and Management - role conflict **5.** Student placement in regard to new constitution, think through **6.** National institutions, where are they going to be placed **7.** orient professionals "majimbo" county governorship **8.** Transitional issues with the new dispensation e.g. funding **9.** Regulatory bodies be completely delinked from training institutions **10.** Remuneration issues	1. Constitutional dispensation –resource implication <u>Recommendations</u> • Ensure that systems are given time to mature • Proper planning and resource allocation • Gradual Phase out of current systems and structures, linkages 2. Expansion of student population does not match resources -lack of foresight/poor planning, no proper guidelines <u>Recommendations</u> • Improve infrastructure and human resources • Expansion of placement sites • harmonize criteria for student selection 3. Harmonization of curriculum across institutions/colleges e.g. Moi, Kenyatta, Nairobi, KMTC-Standardize curriculum, rigorous training, laying down selection criteria <u>Recommendations</u> • Apply a common approach to regulatory bodies and boards • Should pursue act of parliament 4.Regualtory bodies leadership and Management - role conflict <u>Recommendations</u> • Delink mixed roles • undertake regular curriculum review

APPENDIX H: MULTIVARIATE ANALYSIS OF CLIENT OBSERVATION

Variable	Family Planning	HIV Pre-Test	HIV Post-Test	IMCI	Malaria
Cadre (Default = Enrolled Nurse):					
Medical Doctor	--	--	--	.165 (.113)	.126* (.065)
Clinical Officer	--	--	--	.158*** (.058)	.013 (.065)
Registered Nurse	.001 (.085)	.118 (.085)	.014 (.064)	.031 (.064)	.027 (.060)
VCT Counselor	--	.232*** (.071)	-.061 (.062)	--	--
Training (Default = No Training):					
Medical Doctor	--	--	--	.076 (.115)	.075 (.049)
Clinical Officer	--	--	--	-.014 (.046)	.109 (.046)**
Registered Nurse	.144 (.126)	--	--	.338* (.191)	.076 (.046)*
Enrolled Nurse	.036 (.079)	--	--	-.129*** (.037)	.055 (.055)
Facility Ownership (Default = GoK):					
Faith-based	-.238*** (.085)	-.016 (.075)	-.076 (.084)	-.005 (.109)	.090 (.058)
Private	.255*** (.047)	.033 (.067)	.077 (.070)	.043 (.075)	-.142 (.053)
Facility Level (Default = Level 2):					
Level 3	.055 (.104)	-.216* (.112)	-.202*** (.053)	-.007 (.054)	-.029 (.043)
Level 4	-.072 (.093)	-.106 (.098)	-.160*** (.047)	-.075 (.066)	.014 (.038)
Level 5	.052 (.094)	-.109 (.097)	-.086 (.062)	.032 (.066)	-.105* (.055)
Other Covariates & Constant:					
New Client (FP only; Default = Returning Client)	-.018 (.061)	--	--	--	--
Constant	.516*** (.118)	.796*** (.104)	.956*** (.050)	.363*** (.037)	.620*** (.057)
Model Fit:					
Sample Size	50	55	49	73	110
R-squared	0.150	0.265	0.176	.320	.300
F-Statistic	4.83***	3.30***	4.64***	3.76***	3.77***

Notes:
1. Ordinary least squares regression computed using Stata version 5
2. Robust standard errors reported in parentheses
3. * = p<.10, ** = p<.05, *** = p<.01