

MINISTRY OF HEALTH

KENYA HEALTH FACILITY CENSUS REPORT

Towards achievement of universal health coverage

SEPTEMBER 2023



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PREFACE



The goal of the health sector as outlined in the social pillar of Kenya's Vision 2030 is to provide equitable and affordable healthcare to all citizens. The Kenya Health Policy 2014-2030 outlines the direction that the sector is taking to ensure significant improvements are made in the overall status of health in Kenya in line with the Constitution of Kenya 2010, the country's long-term development agenda, Vision 2030 and global commitments such as the Sustainable Development Goals (SDGs). Kenya has made significant progress towards the achievement of

Universal Health Coverage (UHC) by ensuring that delivery of health care services at all levels of the health system, is equitably distributed and adequately supported with access to quality products.

In line with Kenya's Vision 2030 and the Sustainable Development Goals, The Government of Kenya through the Bottom-Up Economic Transformation Agenda (BETA) has committed to providing Universal Health Coverage (UHC) as part of socio-economic transformation by providing equitable, affordable and quality health care of the highest standard to all Kenyans.

As the country draws the roadmap towards accelerating implementation of the BETA Health Agenda, determining the level of service availability and readiness across the sector is paramount. The findings from this Health Facility Census 2023, will be instrumental in informing planning, guiding investments and consequent management of available resources to maximize on outputs, both at the National and County level.

We look forward to working collaboratively across the national and county governments, partners, and all other stakeholders to ensure successful implementation of the findings as we work towards our vision of a healthy, productive and globally competitive nation.

Nakhumicha S. Wafula E.G.H. Cabinet Secretary Ministry of Health

FOREWORD



The Kenyan Constitution provides an overarching legal framework to ensure a comprehensive rights-based approach to health services delivery. The Ministry of Health remains committed to supporting provision of equitable, affordable and quality health services at the highest attainable standards to all Kenyans. In



addition, The Government proposes a paradigm shift in investments from the largely curative approach to focus on preventive and promotive health care.

The Country has made considerable progress in managing its health system, driven in part, by strengthened mechanisms to support data collection and use across the healthcare ecosystem. The Facility Census 2023 aimed at providing baseline information on service availability, readiness of health facilities to deliver services, availability of human resources and health infrastructure across all health facilities and in turn provide a framework to inform investments to address critical gaps in health service availability and readiness.

It is my hope and wish that stakeholders in the health sector will find value in adopting the findings and recommendations captured herein to strengthen Kenya's health system to realize full potential and quality service delivery. Evidence estimates that by integrating the generated results into the strategic development agenda, Kenya will monitor, and scale up its interventions in pursuit of Universal Health Coverage (UHC) and on course to realization of Sustainable Development Goals (SDGs).

Ms. Mary Muthoni H.S.C. Principal Secretary, State Department for Public Health and Professional Standards

Mr. Harry Kimutai, C.B.S. Principal Secretary State Department for Medical Services

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I wish to recognize the effort of the Directorate of Health Standards, Regulation and Quality Assurance and the Division of Health Sector Monitoring and evaluation for their tireless efforts in steering the entire process to completion. I particularly appreciate officials from the Kenya National Bureau of Statistics

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I also applaud the following institutions for their valuable support during data collection and analysis; Kenya Medical Practitioners and Dentists Council (KMPDC), Kenya Health Professions and Oversight Authority (KHPOA), Nursing Council of Kenya (NCK), Pharmacy and Poisons Board (PPB), National Health Insurance Fund (NHIF), National Syndemic Diseases Control Council (NSDCC) and the Clinical Officers Council (COC).

The Health Facility Census, 2023 was made possible through technical and financial support from our development partners to whom we are very grateful. I extend my special thanks to WHO and UNICEF for their immense support.

I also acknowledge all the health facility managers and in-charges across the country for facilitating data collection in their health facilities. Lastly, I would like to take this opportunity to thank all those who in one way or the other participated and contributed in making the Health Facility Census, 2023 successful.

Dr. Patrick Amoth, E.<mark>B.S.</mark> Ag. Director General f<mark>or Health</mark>

ACRONYMS AND ABBREVIATIONS

A&E: Accident and Emergency ALS: Advanced Life Support **BGA**: Blood Gas Analysis **BLS**: Basic Life Support **BP**: Blood Pressure **CEMA**: Centre for Epidemiological Modeling and Analysis CHU: Community Health Unit **COC**: Clinical Officers Council **COHO:** Community Oral Health Officer **CPAP**: Continuous Positive Airway Pressure GoK: Government of Kenya EHIS: Electronic Health Information System ENT: Ear, Nose and Throat FP: Family Planning HDU: High Dependency Unit HIV: Human Immunodeficiency Virus ICU: Intensive Care Unit **IOPA:** Intra Oral Periapical **IPC**: Infection Prevention and Control **KEPH:** Kenya Essential Package for Health **KHPOA**: Kenya Health Professions Oversight Authority **KMPDC:** Kenya Medical Practitioners and Dentists Council **KNBS**: Kenya National Bureau of Statistics **KMHFL:** Kenya Master Health Facility List MCH: Maternal and Child Health MoH: Ministry of Health MRI: Magnetic Resonance Imaging **NBU:** New Born Unit NCDs: Non-Communicable Diseases NCK: Nursing Council of Kenya **NEMA:** National Environmental Management Authority NGO: Non-Governmental Organization **NHIF:** National Health Insurance Fund **NSDCC**: National Syndemic Diseases Control Council **OPG**: Orthopantomogram **ORS**: Oral Rehydration Salt PCNs: Primary health Care Networks **PDT**: Pregnancy Diagnostic Test PHC: Primary Health Care **PPB:** Pharmacy and Poisons Board **SOPs**: Standard Operating Procedure SPSS: Statistical Package for Social Sciences **TB**: Tuberculosis **UHC:** Universal Health Coverage **UNICEF:** United Nations Children's Fund UoN: University of Nairobi WHO: World Health Organization

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EXECUTIVE SUMMARY

The Kenya Health Facility Census 2023, targeted 14,366 health facilities; 12,384 facilities, across all counties, were fully assessed translating to 101% coverage. Public, private, faith-based/non-governmental organizations health facilities accounted for 47%, 46% and 8% of the assessed health facilities respectively. All Level 6 facilities were government owned while most of Level 4 (49%) and Level 5 (44%) were privately owned.

A total of 2,633 facilities did not appear in the **Kenya Master Facility List**, most of them being new; 12 facilities were duplicated in the KMFL (some of these are facilities had moved to new locations and had gotten new KMFL codes) and many facilities claimed they were misclassified in the KMFL. A number of facilities had mismatched names or were misplaced between Counties. To arrest these issues, the Kenya master facility list needs to be updated.

Overall, only 40% of all facilities were **accredited by NHIF.** Across levels of care, NHIF accreditation was highest in government level 2 facilities (57%). NHIF accreditation varied across the counties with only 10 Counties having more than half of their facilities accredited, while 12 counties had less than 25% of their health facilities accredited. There's an urgent need to accredit health facilities with NHIF, especially primary facilities.

Over eighty percent of the facilities had a **reliable power and water source**; 87% reported national grid as their main source of power while 45% of facilities used piped/municipal council water supply. Half of the facilities (51%) lacked access to **functional ambulances**. Furthermore, 84% of facilities were accessible by road all year round. More than two thirds of facilities (69%) did not use any **electronic healthcare information system (EHIS)** with 62% among those who had an EHIS using integrated/end-to-end systems. Investments should be made to iincrease facilities connected to piped water from 45% and ensure all weather access to all facilities. Further, all facilities should have power back-up systems in place.

Overall, forty-seven percent of facilities had **disability friendly infrastructure** however only 4% of the facilities had all the tracer disability friendly infrastructure including; - Ramps/lifts, wheelchair, disability friendly washrooms and disability friendly maternity beds. Ramps/lifts were the most reported (82%) while disability friendly maternity beds were least readily available at 7%.

Provision of disability friendly infrastructure in health care facilities should be prioritized in all facilities.

Overall, 90% (11,147 of the 12,384) of all facilities provided at least one of the 16 **basic outpatient services**. Notably, only 2% of these health facilities offered all the 16 services. Availability of basic outpatient services was varied as outlined; Referral mechanism (100%); Management of communicable diseases (84%); Maternal child health services (83%); Management of non-communicable diseases (81%); Minor surgical services (73%); Immunization services (69%); Basic laboratory services (68%); Outreach services (64%); General emergency services (60%); Emergency obstetric services (60%); Maternity services (47%); Emergency obstetric care (33%); Obstetric and gynecological services (31%); Mental health services (17%); Dental services – extraction (12%); Physiotherapy (10%); and Rehabilitative services (6%). The readiness to offer basic outpatient services (defined as having all the necessary personnel, equipment and infrastructure requirements to offer a specific health service) was at 7%. Nearly all (97%) of the health facilities had the required personnel (at least a nurse, clinical or medical officer) to provide basic outpatient services. The main gaps were in the required infrastructure and equipment which were available in 77% and 15% of these health facilities respectively.

There is need to prioritize strengthening the capacity of health facilities to provide essential outpatient services through availing the requisite health personnel, health infrastructure/equipment and health products and technologies. Availability of basic equipment is especially a critical gap that needs to be bridged for quick gains.

Majority of health facilities that provided **specialized outpatient services** offered obstetrics/gynaecology (69%), paediatrics (61%), general surgery (57%) and internal medicine (57%). A minority of these facilities offered renal services (21%), cardiology (18%), neurology (15%), endocrinology (11%) rheumatology (11%) and cardiothoracic/vascular surgery (7%).

Less than half of the facilities in the country were offering **maternity services** with only a third of the facilities offering emergency obstetric care. Despite a majority of the facilities having adequate delivery beds and delivery packs, critical gaps were noted such as; only 40% of the facilities offered blood transfusion services while only 54% of the facilities had a source of oxygen.

Access to **newborn health services** in the country was low at 12%. Overall availability of equipment within facilities offering newborn services was good however only about half of the facilities offering newborn care had CPAP machines.

Investments are critically needed in equipment, supplies and human resource to deliver both basic and comprehensive maternity services and for newborn care (vacuum extractors, resustiares, Oxygen source, CPAP among others). This impacts negatively on maternal and newborn health outcomes and is a barrier to improving quality of care during and after delivery.

One in every five facilities assessed were offering **in-patient services**, the majority of which were medical and pediatric inpatient services at 85% and 69% respectively. Less than a third (27%) offered inpatient surgical services. Only 4% of facilities were offering inpatient services for oncology and psychiatric services.

A total of 381 facilities offered **critical care services**; 217 (1.8%) facilities provided High Dependency services (HDU) and 164 facilities provided Intensive Care services (ICU). Nationally, there are a total of 899 ICU adult beds, 196 ICU pediatric beds and 258 ICU neonatal beds. A total of 951 HDU adult beds and 275 HDU cots were reported. CPAP machines were the least unavailable critical care item while most services are provided by private facilities.

Investments in Critical care services should be scaled up especially in public facilities in consideration of the proposed chronic diseases fund, so that once established, patients can access quality critical care services within acceptable cost (Public Facilities).

Slightly over half of facilities were providing **pharmacy services** (57%) and of these, only a small proportion had the full basket of tracer medicines (6%) and tracer non-pharmaceutical supplies (15%). Average availability for tracer drugs and non-pharmaceuticals was 62% and 73% respectively. In terms of non-pharmaceuticals, solusets for fluids, sunction catheters and nasal prongs for oxygen delivery were not widely available in health facilities; only 40% of all facilities and 25% of the level 2 facilities had these items.

Investments need to be scaled up (at KEMSA) to ensure 100% availability of all tracer drugs and non-pharmaceutical supplies in all health facilities. This would prevent the inconvenience experienced when patients have to buy drugs and non-pharmaceuticals especially while admitted.

A half of the assessed facilities provided **laboratory services**; in terms of scope, 87% of facilities with a laboratory, offered basic lab services while 54% offered comprehensive laboratory services. Most basic laboratory tests (Stool for ova and cyst, HIV/AIDs, Blood glucose, Dipstick for urinalysis, Malaria, Urine test for pregnancy (PDT) were readily available while Sputum test for TB and full haemogram tests were available in less than half of the facilities. Notably, primary level facilities with a laboratory had most basic lab tests. The least available laboratory services were culture and sensitivity (14%), Lipid profile (28%), and Biochemistry (32%). Most facilities with laboratory services had the personnel needed while a third lacked the necessary infrastructure. Capacities to provide TB diagnosis services and full haemogram should be strengthened at PHC facilities. The scope of Xpert machines should be expanded to offer TB diagnostic services within regions/Counties. In secondary and tertiary facilities, necessary capacities to provide lipid profiles, Culture and sensitivity as well as molecular testing should be put in place.

Radiology services; Overall, availability of radiology services was 11%; Ultrasound and x-ray services were the most available with radiology services at 95% and 62% respectively. Specialized radiology services like PET and radionuclide scans were available in less than 5% of the facilities. Readiness to provide the basic, comprehensive and specialized radiology services was low at 21%, 1% and 5% respectively. To ensure quality PHC services, overall access to radiology services should be enhanced; particularly to increase availability of basic radiology services and enhance the readiness to provide the services. Further, there is need to reconsider policy direction in use of mammograms for screening of breast cancer; MRI services should be availed within geographical regions to ease access to the service, ensuring the MRI facilities are accredited with NHIF.

Renal services were available in only 2% of facilities. In addition, less than half (42%) of facilities providing renal services had all the necessary equipment, services and infrastructure. In view of the rising burden of NCDs in the country, kidney transplant and post-transplant services should be enhanced to reduce the burden of population needing dialysis, and improve quality of life for patients with renal failure.

Availability of **emergency services** in the country are at a precarious state as indicated by the census. For instance, only 5.8% of all facilities had accident and emergency unit while 49% facilities had access to an ambulance. A third of those with access to an ambulance could only access a BLS Ambulance. That said, all facilities reported to have referral services. Arrangements should be made for all facilities to access an ambulance, even on contract basis to facilitate an efficient referral process. Higher level facilities should be resourced to acquire at least an advanced life support ambulance (ALS) to enhance patient management.

For **specialized services**, fewer lower-level facilities were found to offer ophthalmology(eye), ear, nose and throat, rehabilitative and mortuary services compared to higher level facilities. There is need to Improve on the availability and access to specialized and sub specialized medical services in the secondary and tertiary hospitals. This will also market Kenya as a preferred destination for inbound medical tourism

In regards **to health workforce**, it was noted that access to health workers such as nurses and clinical officers was greater than other cadres such as pharmacists and dentists. In addition, health workforce was inadequate and below the WHO recommended norms per population. This could have a negative effect on access to quality health care and more so for understaffed cadres such as dental and pharmaceutical staff, and hamper the formation of multidisciplinary teams for holistic care. For efficient use of existing workforce, capacities of existing staff should be enhanced to leverage on their availability to provide better quality care. This includes also enhancing staff welfare including better enumeration and work

environment. In addition, consideration should be made on the effect of engaging skilled health professionals as casual workers on health outcomes.

The density of **primary health care facilities** nationally was high at 2.4 per 10,000 population. High availability of basic outpatient services was reported; Rehabilitative services, physiotherapy and mental services were the least readily available. Basic equipment like BP machine, weighing scale, examination couch, thermometer and stethoscope were available in most PHC facilities. On the other hand, most level 2 facilities lacked Oxygen cylinder and flow meter/oxygen concentrators, Nebulizers, Pulse oximeter, Examination light, Foot stepper, Updated and well stocked emergency tray, Privacy screen, Stadiometer Pedal bins and Drip stands.

A third (36%) of level 2 facilities and 79% of 3 facilities were providing laboratory services. PDT, Malaria and Dipstick for urinalysis were available in almost all level 2 and 3 facilities that provided laboratory services while sputum test for TB and hemogram were available in only a third of level 2 facilities and 55% and 47% of level 3 respectively.

Availability of most tracer drugs was lowest in level 2 facilities. More than half of level 2 facilities did not have benzypenicillin injection, insulin, metformin and magnesium sulphate. Drugs for the management of mental health conditions were missing in most primary facilities; carbamazepine was only available in 32% of level 2 and 45% of level 3 facilities. Drugs for management of non-communicable conditions and oxytocin for labor & delivery, were available in less than half of level 2 facilities while availability in level 3 was moderate (about 2 of every 3 facilities had these drugs). Whereas most non pharmaceutical commodities were available in most PHC facilities, only 4% of level 2 facilities and 18% of 3 had all the tracer non pharmaceuticals.

For effective primary healthcare services, equipment and supplies that are key in delivery of basic services should be provided in primary facilities. These must include the radiology equipment and maternity. In addition, human resource should be revamped in the primary facilities as this presents a threat in the delivery of Universal Health. Each facility should have (in addition to a nurse), at least a clinical officer/medical officer and a laboratory. Innovative ways of using/sharing specialist services at primary facilities should be explored as the country continues to train more specialists. Linkage of Community Health Units (CHU) to health facilities should be enhanced to attain at least 90% in the PHC facilities linked, leveraging in addition on the private sector to support community health.

Results database & dashboard; A database with readiness status for each facility/ sub/County and County available on this link; https://cema.shinyapps.io/kenya-hfa-app/.

This results dashboard has the following features;

- Displays summary of specific health services at National and County levels including availability and readiness for each service.
- For each service, geographical distribution of facilities offering the services (County and subcounty).
- Detailed table of facilities offering each service in each County, their readiness and gaps in Human Resources, equipment and infrastructure.
- Gaps at National, County and facility level.

INTRODUCTION

1.1 BACKGROUND

The Kenyan Constitution provides an overarching legal framework to ensure a comprehensive rightsbased approach to health services delivery. It provides that every person has a right to the highest attainable standard of health, which includes reproductive health and medical emergency care. The strategic direction for the health sector in Kenya has been defined through the Kenya Health Policy (KHP) 2014-2030 and the Kenya Health Sector Strategic Plan (2018-2023), in line with the Kenya Vision 2030 and the Bottom-up Economic Transformative Agenda (BETA). A Health Systems Thinking Approach has been introduced to guide health sector investments and intervention to maximize on the overall sectoral inputs; presenting a paradigm shift from managing disease and illness to an emphasis on ensuring a healthy population.

The Ministry of Health is committed to supporting provision of equitable, affordable and quality health services at the highest attainable standard to all Kenyans. This will ensure access to quality and affordable health services in line with the Constitution and thus accelerate the attainment of Universal Health Coverage (UHC).

1.2 HEALTH STATUS

Kenya faces a triple burden of disease where communicable diseases still dominate all causes of morbidity and mortality with infectious diseases and injuries contributing more than half of the deaths but with an estimated 39% due to non-communicable diseases. It is projected that in the coming years the share of deaths from noncommunicable diseases and injuries will continue to increase^[1].

1.3 OVERVIEW OF KENYA'S HEALTH SYSTEM

The Constitution of Kenya 2010 established a two-tier health system; the national and county. The National level deals with health policy, national referral hospitals, capacity building and technical assistance to the Counties. The County Departments of Health are responsible for managing county health facilities and pharmacies, managing ambulance services, promoting primary health care, licensing and control of undertakings that sell food to the public, veterinary services (excluding regulation of the profession), cemeteries, funeral parlours and crematoria, refuse removal, refuse dumps and solid waste disposal, and health workforce recruitment and deployment.

1.4 UHC ASPIRATION

The Government of Kenya is committed to implementing Universal Health Coverage (UHC) as part of the government economic transformation plan. This will ensure that all individuals and communities in Kenya have access to quality essential health services without suffering from financial hardship.

The Government through the Ministry of Health has prioritized provision of primary health care including a focus on Community Health Promoters within the community level. This is in order to shift the focus of health sector investment to preventive and promotive health care. It is thus intended to strengthen the primary health care system including its governance with the establishment of Primary Care Networks (PCNs) and facilities organized in a hub and spoke model. These will be linked with the higher levels of the health system for a seamless continuum of care.

1.5 THE PURPOSE OF THE HEALTH FACILITY CENSUS

To ensure that Kenyans access health care from facilities that have all the necessary requirements to provide this care is crucial for success of Universal Health Coverage. In addition, proper functioning of the Primary Care Networks and their linkage to higher levels of care for a seamless continuum of care is imperative. The health facility census was carried out to determine what health services are offered within each health facility in each location and region, including additional resources and services facilitating their delivery.

1.5.1 Objectives:

1) To enumerate all the public, faith-based and private health facilities in Kenya

2) To determine specific health service availability and readiness across the country's network of health facilities

3) To develop a comprehensive database of all health facilities with the health services they provide and their readiness to provide those services

4) To determine the status and the gaps in health system inputs (human resource for health, infrastructure, amenities, tracer commodities, and equipment) to serve as the basis for improving provision and quality of healthcare services in the country.

^[1] Ministry of Health (2015). Kenya STEPwise Survey for Non-Communicable Diseases Risk Factors Report 2015

METHODS/METHODOLOGY

2.1 CENSUS ORGANIZATION

The Kenya National Health Facilities Census was carried out between 14th and 29th August 2023. The census aimed to capture all the 14,366 public, faith-based organizations and private health facilities from across the 47 counties in Kenya whose details were available on the Kenya Master Health Facility List (as per 1st August, 2023).

The census teams were organized through a national coordination team (10 coordinators each covering 3-6 Counties) and County level data collection teams. Each County team (managed by one supervisor) was further divided into sub-County teams that carried out the enumeration tasks and the administration of the census questionnaires. Each sub-County team was assigned a defined number of health facilities (taking into consideration the level of care of the health facilities to manage team workloads). In total, 564 enumerators collected the data. In addition, the census teams worked with the county officials to identify and enumerate any additional health facilities that were not in the Kenya Master Facility List (KMHFL).

2.2 HEALTH FACILITY DATA COLLECTION

A health facility census and assessment questionnaire were developed focusing on the following main areas:

- 1) *Facility identifiers* including the name of the health facility, KMFL code, Kenya Essential Package for Health (KEPH) level, geocodes, and administrative location (ward, sub-County, County); ownership; NHIF registration/accreditation status
- 2) Facility basic amenities/enablers including electronic health information system, water sources, power supply and backup facilities, sanitary, transport systems and ambulance, staff housing and call rooms, security mechanism
- 3) Infection Prevention and Control (IPC)
- 4) Available Human Resource for Health including number and cadre of staff
- 5) *Primary Health Care services* including facility link to community health units, and basic outpatient services offered
- 6) Specialized Health Services provided
- 7) Availability of equipment required to provide the health services
- 8) *Availability of infrastructure* needed to provide the health services

The questionnaire was digitized using the KoBocollect software and pre-loaded onto tablets to allow for electronic data collection. A total of 14,366 health facilities in the Kenya Master Facility List were loaded and formed the census target across the country. All the data collection teams were trained on these tools before the start of the census. For efficiency of data collection, the tool was split into three sections; Administrative, Clinical and Specialized sections. This allowed for up to three data collectors to concurrently administer the tool at each health facility. At each health facility, the questionnaires were administered to facility administrators or their representatives. The data were transmitted electronically to a central server for storage and analysis.

2.3 DATA ANALYSIS APPROACH

The three datasets (administrative, clinical and specialized) for each facility were merged, and all the data variables examined and cleaned prior to the analysis.

The initial analysis determined the proportion of target health facilities that were enumerated, and the number of new health facilities not in the KMFL list. The number of health facilities that had complete data was determined and formed the basis of the subsequent analysis. Descriptive analysis of the variables related to each of the eight focus areas listed in the section above were conducted. These results were presented in tables and graphs.

Analysis of availability of health services was calculated as the proportion of the total health facilities surveyed that reported offering specific health services (e.g., outpatient visits, immunization services, comprehensive maternal services, renal services etc.) at National, County and sub-County level.

To determine readiness to offer each essential or specialized health service, the minimum personnel, equipment and infrastructure requirements for each service were determined. Each component required to offer the specific health service was given equal weight, and a cumulative availability of those components was determined. The tracer indicators used to assess in each area is indicated in each assessment area. The service readiness was calculated as a percentage of the required service components that were available. This was calculated for every service per health facility, per County and Nationally.

Analysis of Human Resource for Health data included estimation of access (per 10,000 population) to specific cadre of health personnel. The population numbers were based on the 2019 Kenya Population Census data. Health facility density estimates (per 10,000 population) also used the 2019 Census data. Data cleaning, analysis and graphics were completed using multiple data and statistical software including Excel, SPSS, STATA and R.

FINDINGS

3.1 HEALTH FACILITY CENSUS COVERAGE

The health facility census targeted 14,366 health facilities which appear in the Kenya Master Health Facility List (KMHFL). A total of 14,883 health facilities were visited translating to 104% coverage. Sixty-three facilities in the Kenya Master Facility List lacked identification codes (KMFL code) while 2,633 were missing in the Kenya Master Facility List. A total of 203 facilities denied access to their premises. Out of those assessed, 12,384 (83%) health facility had reports uploaded to the server and were defined as complete (having all the 3 assessed sections). A total of 736 (5%) health facility reports were incomplete (missed 1 or 2 of the three assessed sections) and 1,560 (10%) of the total assessed facilities were closed at the time of assessment. The national coverage of the census is summarized in table 1 below.

Table 1: National Summary; Facilities Targeted Over Facilities Assessed, Closed & Denied Access

Facility census National coverage						
Target Facilities	14,366					
Coverage (Total facilities assessed)	14,883 (104%)					
Facilities Completed (with 3 sections complete)	12,384 (83%)					
Incomplete facilities	736 (5%)					
Facilities Closed	1,560 (10%)					
Facilities denied access	203 (1%)					
(%) Assessment Completion	83%					

Among the 47 counties, Nairobi and Nakuru had the highest number of targeted health facilities at 1,319 and 645 respectively, while Isiolo and Lamu had the least, at 82 and 71 respectively. All counties achieved an overall completion rate of over 70% except Bomet county where about half (49%) of facility reports were successfully uploaded. Despite the overall high completion rate across the counties, some counties had a high number of incomplete assessment reports such as Machakos (85), Bomet (81), Nairobi (76), Kericho (33) and Nakuru (27). The completion rate in 19 counties was more than 100%. As shown in table 2 below.Table 2: County Summary; Facilities Targeted Over Facilities Assessed, Closed & Denied Access

County	Target Facilities	Coverage (Total facilities assessed)	Facilities Completed (with 3 sections complete)	Incomplete facilities	Facilities Closed	Facilities denied access	(%) Assessment Completion
Bomet	206	188	100	81	6	1	49%
Kericho	286	261	204	32	24	1	71%
Machakos	494	505	359	85	48	13	73%
Meru	591	539	432	23	80	4	73%
Turkana	283	251	218	25	8		77%
Kitui	447	427	346	17	61	3	77%
Makueni	355	350	278	14	54	4	78%
Narok	221	224	178	21	24	1	81%
Taita Taveta	136	126	111	2	13		82%

County	Target Facilities	Coverage (Total facilities assessed)	Facilities Completed (with 3 sections complete)	Incomplete facilities	Facilities Closed	Facilities denied access	(%) Assessment Completion
Isiolo	82	82	67	2	13		82%
Nyeri	452	489	370	22	93	4	82%
Nairobi	1319	1367	1081	80	143	63	82%
Kiambu	748	754	621	4	112	17	83%
Siaya	293	266	246	1	18	1	84%
, Kirinyaga	230	236	194	6	36		84%
Garissa	206	210	174	6	30		84%
Mandera	216	205	185	11	8	1	86%
Nandi	256	247	220	7	18	2	86%
Nakuru	645	686	557	26	81	22	86%
Muranga	387	473	335	8	113	17	87%
West Pokot	179	160	155	4	1		87%
Homa Bay	406	392	352	13	27		87%
Kisii	296	290	258	14	15	3	87%
Laikipia	220	220	192	9	19		87%
Trans Nzoia	195	189	173	8	8		89%
Tharaka Nithi	202	191	180	6	5		89%
Samburu	142	155	127	7	21		89%
Mombasa	378	443	341	21	73	8	90%
Bungoma	283	282	256	11	13	2	90%
Migori	334	376	304	12	53	7	91%
Uasin Gishu	283	292	258	7	21	6	91%
Lamu	71	76	65	8	3		92%
Embu	211	212	194	4	14		92%
Wajir	175	178	161		17		92%
Busia	188	184	174		10		93%
Baringo	296	306	277	10	19		94%
Tana River	96	108	90	4	14		94%
Marsabit	147	147	139		8		95%
Kajiado	352	405	333	26	38	8	95%
Nyandarua	194	254	185	24	42	3	95%
Kilifi	394	435	377	29	26	3	96%
Kakamega	362	372	354	6	11	1	98%
Nyamira	202	224	199	5	16	4	99%
Elgeyo Marakwet	147	152	145	1	6		99%
Kisumu	373	443	380	21	41	1	102%
Vihiga	155	209	174	1	32	2	112%
Kwale	232	302	265	12	24	1	114%

Of 14,883 facilities assessed 82% had a KMFL code and 63 (0.4%) did not have a code; 2,633 facilities were not found in the KMFL Master list, most of these were new.

3.1.1 Distribution of assessed facilities by KEPH Level

Majority of the assessed health facilities were level 2 (71%), while level 6 facilities formed the least proportion (Figure 1). Public facilities consisted of 47% of assessed facilities while private and faithbased/non-governmental organizations accounted for 46% and 8% of the total health facilities assessed respectively. All Level 6 facilities were government owned while most of Level 4 (49%) and Level 5 (44%) were privately owned (Figure 2).



Figure 1: Facility by KEPH Level

Figure 2: Facility Identification by Ownership (N = 12,375)

3.1.2 Facility Identification by Ownership

Figure 3 below shows ownership distribution by level of care. Government owned facilities form majority of Level 2 (47%) and Level 3 (48%) facilities, while private were the majority among Level 4 (49%) and Level 5 (44%) facilities. All Level 6 facilities were government owned.



Figure 3: Facility Identification by Ownership and KEPH Level



Level 2 Level 3 Level 4 Level 5 Level 6

Figure 4: Facility Identification by KEPH Level and Ownership

Figure 4 above shows KEPH levels of care distribution by ownership. Government owned facilities constitute of 4172 (72%) Level 2 facilities, 1217 (21%) Level 3, 376 (7%) Level 4, 14 Level 5 and 5 Level 6 facilities. Distribution of levels of care within privately owned facilities are almost similar to government owned facilities with 4036 (72%) Level 2 facilities, 1116 (20%) Level 3. However, private sector seems to own more Level 4 facilities (478) compared to public sector (376). It was also noted that only the public sector offers care at KEPH Level 6.

Recommendation

- The Kenya Master Facility list (KMFL) should be updated to clean up facilities with more than one KMFL code (i.e. KMFL code in KMFL list and that reported by the facility are different) and update facilities to current location/County. Non - existent facilities should be removed while official names should be updated for facilities that changed their official names. The geo-location for facilities that shifted from one location to another should be updated.
- The KMFL should be updated to include all facilities countrywide including new facilities that are not yet registered. Alternatively, the system should be linked with operationalization and registration systems within the boards and councils so that a health facility cannot operate before they are registered and have an MFL code.
- Facilities KEPH Level should be revised to allocate facilities to the correct levels based on prerequisite guidelines and qualification criteria. These guidelines need to be updated and shared among all accrediting /registering bodies.

3.1.3 Facility NHIF accreditation by Ownership

Overall, only 40% of facilities were NHIF accredited with 45% og government facilities accredited to NHIF. Only a third Private facilities were accredited by NHIF. figure 4.



Figure 5: Overall facilities NHIF accreditation and by Ownership

Across levels of care NHIF accreditation was highest in government level 2 facilities (57%) while a third of public level 3 facilities were accredited. Accreditation was generally higher in non-governmental and faithbased facilities in higher levels of care (levels 3 upwards). Only 44% and 36% of private and nongovernment/FBOs facilities were accredited, as shown in figure 6.



Figure 6: NHIF accreditation by Ownership and KEPH Level

Ten counties had more than half of their facilities accredited by NHIF. On the other hand, twelve counties had less than a quarter of their PHC facilities accredited by NHIF as in figure 7 below.



Figure 7: Percentage PHC facilities per county accredited by NHIF

3.2 BASIC AMENITIES

Basic amenities relate to the extent to which the physical conditions of a health facility provide favorable conditions for delivery of healthcare services. These amenities formulate the prerequisite fundamental requirements for functionality of healthcare facilities, and their absence, inequity distribution or poor condition greatly impacts on quality and coverage of healthcare delivery.

Assessed areas included availability of adequate, legible and accurate signage to the facility, patient and staff toilets with hand washing facilities, reliable water, reliable power supply, communication infrastructure and reliable transport network.

Average, availability of basic amenities was 69%; Most facilities had a reliable power source (89%) while mobile signal and accessible roads were available in 84% of facilities each. About a third of facilities did not have a reliable transport system while availability of power backup was also generally low at 41% as shown in the (figure 8).

Provision of disability friendly infrastructure and connection to piped water in health care facilities should be prioritized across all Counties.



Figure 8: Overall facilities basic amenities (N = 12,375)

3.2.1 Water Supply

Overall, average availability of reliable water source was 83% with Piped/Municipal Council water being the major source (45%). 4% of facilities reported surface water (River, Lake, Well) as their main source of water. A summary of sources of water supply in facilities is shown in the figure 9 below.

The census found that 30% of all government facilities (1715), 6% of non-governmental facilities (55) and 7% of private facilities (377) have no reliable source of water as shown in figure 9 below.



Figure 9: Availability of water supply (N = 12,375)



Figure 10: Facilities without reliable water supply by ownership

Availability of safe water supply (borehole, piped/municipal council water) was 67% as summarized in the figure 11 below.



Figure 11: Availability of safe water supply (N = 12,375)

3.2.2 Power source

Average availability of a reliable power source was 89% across all facilities. National grid was the main source of power while only 13% of facilities reported using solar energy as the main source of power as shown in figure 12.





3.2.3 Disability-Friendly Infrastructure

Overall, 47% of health facilities had disability friendly infrastructure with only 4% having all assessed disability friendly infrastructure domains including; ramps/lifts, wheelchair, disability friendly washrooms and disability friendly maternity beds. Ramps/lifts were the most available (82%) while disability friendly maternity beds were least reported (7%) (Fig 10).



Figure 13: Availability of disability friendly infrastructure

Most facilities across all levels had a ramp or a lift; Most other disability infrastructure was more available on higher level facilities compared to lower-level facilities (Table 3).

		KEPH Level				
lte m	Total	Level 2	Level 3	Level 4	Level 5	Level 6
Ramp /lifts	81.9	81.7	79.0	87.8	90.9	100.0
Disability friendly washrooms	14.8	9.1	14.9	34.7	54.5	100.0
Disability Friendly Maternity beds	6.9	2.1	7.9	21.7	42.4	80.0
Wheelchair	54.1	43.3	62.5	78.7	81.8	100.0

Table 3: Availability of disability friendly infrastructure by level of care

3.2.4 Access to an ambulance

Of the total health facilities assessed, about half reported having access to functional ambulances. BLS ambulances were the most accessible (64%) while ALS ambulances were accessible in only 13% of facilities (figure 14).



Figure 14: Availability and access to functional ambulances

3.2.5 Electronic Health Information System (EHIS)

Only a third of facilities had Electronic Health Information System (EHIS) at the time of assessment, with 62% of these having an integrated/End-to-end system. Program service specific EHIS were available in 38% of facilities as shown in (figure 15).



Figure 15: Availability of electronic Health Information System (EHIS)

Conclusion

- Overall, less than half of the facilities were NHIF accredited.
- Over eighty percent of the facilities had a reliable power and water source. However, 8%, 4% and 2% reported spring, well water and water vendors being their main water sources and only 45% used piped/municipal council water supply.
- Half of facilities lacked access to functional ambulances and most of those with access was to the basic life support ambulance (BLS).
- Most (69%) of the facilities did not have an electronic health information system but where present, the system was mostly integrated across the various departments in the health facility.
- Only 4% of the facilities had all disability friendly infrastructure assessed including; Ramps/lifts, wheelchair, disability friendly washrooms and disability friendly maternity beds.

Recommendations

- Provision of disability friendly infrastructure in health care facilities should be prioritized as more than 50% of facilities reported not having any disability friendly infrastructure; only 4% had all items:
- All facilities should be connected to piped water to increase from 45% to 100% piped water access
- All hospitals should have an Advanced Life Support-ALS (and/or higher) ambulance

3.3 OVERALL AVAILABILITY OF SERVICES IN HEALTH FACILITIES

This section summarizes availability of basic and specific services that were assessed. Overall, almost all facilities (91%) reported providing basic outpatient services. Pharmacy and laboratory services were available in about half of the facilities (55% and 49%) respectively. Overall availability of other services in the facilities was quite low. Only 16% of health facilities assessed offered inpatient care, 5% offered newborn care services, 3% had rehabilitative services, 2% offered critical care services and less than 1% of the facilities offered specialized radiology services as shown in figure 16.





3.3.1 Basic Outpatient Services

Basic out-patient services range from health promotion, disease prevention, treatment of both communicable and non-communicable diseases, rehabilitative and palliative services. The scope of basic outpatient services assessed during the census included; referral mechanisms; management of communicable conditions; maternal child health; management of non-communicable conditions; minor surgical services; immunization; basic laboratory; outreach services; general emergency services; maternity services; emergency obstetric care; mental health; dental services and rehabilitative services. The tracer indicators used to assess readiness to provide basic outpatient services are summarized in table 4 below.

Domain	Tracer Items					
Services	Immunization services, Maternal Child Health/Family Planning (MCH/FP)					
	Management of Communicable Diseases (HIV/AIDS, TB, Upper Respiratory					
	diseases, Diarrhoea), Management of non-communicable Diseases (Diabetes,					
	Hypertension), Obstetric & Gynaecological management services					
	General Emergency Services including Trauma, Minor Surgical services					
Human Resource	(Any of) Nurse, Clinical officer, medical officer					
Infrastructure	1 Consultation or Treatment room; Hand wash basin with running water and soap					
Equipment	Weighing scale, Stadiometer, Blood pressure machine, Pulse oximeter,					
	Thermometer, Stethoscope, An examination couch covered with macknintosh, A					
	privacy screen, An updated and well stocked emergency tray					
	Examination light, Drip stand, Pedal bins, Oxygen cylinder and flow meter/oxygen					
	concentrator					

Table 4. Tracer items needed to provide Basic Outpatient Services

Out of 12,375 health facilities assessed, 11,147 (90%) reported to be offering basic outpatient services. However, only 2% (183) were offering the entire package of basic outpatient services. Majority of health facilities offered between 6 to 10 basic outpatient services (55%); 23% (2,606) offered between 11 to 15 basic outpatient services and 20% offered between 1 to 5 basic outpatient services. All health facilities reported to have a referral mechanism in place for continuum of health care. Immunization services were available in 69% (7,758) of health facilities, basic laboratory services in 68% (7,670) and maternity services in 47% (5,310). Minority of health facilities offered rehabilitative services (6%), dental extraction (12%) and mental health (17%). A summary on availability of basic outpatient services is illustrated in the chart 14 below.



Figure 17: Availability of Basic out-patient services

Basic outpatient services readiness

Majority of health facilities that reported to have been offering basic outpatient services had the requisite equipment; 88% had a weighing scale; 86% had a BP machine; 85% had an examination couch covered with a mackintosh and 84% had a thermometer and stethoscope. About one third of these facilities (32%) had a source of oxygen. At least one medical officer/Nurse/Clinical Officer was available in 97% of those facilities offering basic outpatient services. The readiness to offer basic outpatient services in all facilities was at 7% as summarized in the figures 18 and 19 below.









Conclusion: Majority of health facilities provided the following basic outpatient services; management of both communicable and non-communicable diseases; MCH/FP; immunization, basic laboratory; minor surgeries and outreach services. However, a minority of assessed health facilities provided key essential basic outpatient services including maternity, mental health, dental and rehabilitative services. The capacity of assessed health facilities to offer basic outpatient services was found to be extremely low.

Recommendation: The Government and key stakeholders to priorities strengthening the capacity of health facilities to provide essential outpatient services through availing the requisite health personnel, health infrastructure/equipment and health products and technologies.,

3.3.2 Specialized Services

Specialized health services are provided by specialist medical/dental practitioners, usually through referral from primary health care providers. The following specialized health services were assessed during the census; obstetrics/gynaecology services, paediatrics, internal medicine, general surgery, ENT, ophthalmology, orthopaedic surgery, dermatology, urology, neurology, critical care services, renal, cardiology, immunology, plastic and reconstructive surgery, endocrinology and organ transplant.

The tracer indicators used to assess readiness to provide specialized services are summarized in table 5 below.

Sservice/Domain	Human resource	Infrastructure	Equipment	
1. Specialized paediatric services	Paediatrician			
2. Internal medicine	Physician			
3. General surgical	General surgeon			
4. Obstetric &	Obstetrician/	A Consultation or Treatment		
Gynaecologic services	gynaecologist	room	Basic equipment as defined in basic	
6. Orthopaedic – including	Orthonaedic surgeon	Hand wash basin with running	out-patient services	
club foot clinic	or thopacule surgeon	water and soap		
8. Cardiology	Cardiologist			
9 Neurology	Neurosurgeons or			
5. Neurology	Neurologist			
11. Nephrology/ Renal	Nephrologist			
services	Renal nurses			
17. Oncology services				
	Medical Oncologist	A Consultation or Treatment		
Chemotherapy	Oncology pharmacists	room Hand wash basin with running	Basic equipment as defined in basic	
Radiotherapy	Clinical/Radio-oncologist	water and soap	out patient services	
	Nuclear medicine Physicist	Radiotherapy bunkers	PET Scan Radionuclide scan	
Surgical oncology	Surgical oncologist	Isotope therapy isolation rooms		
Surgical offeology		Brachytherapy suite		
18. Organ transplant		Theatre		
		A Consultation or Treatment	Basic equipment as defined in basic	
	General surgeon	room	out-natient services	
		Hand wash basin with running		
		water and soap		

Table 5: Tracer items needed to provide specialized services

Figure 20 below shows that of all health facilities assessed, 1,452 (12%) offered specialized out-patient services. All the 23 types of specialized health services were offered in only 5 health facilities (0.3%). Out of the facilities offering specialized services, majority (69%) offered less than eight types of specialized services while 9% offered above 13 types of specialized health services. Majority of health facilities offered obstetrics and gynaecology services (69%); paediatrics (61%); general surgery (57%) and internal medicine (57%). Only a small proportion of health facilities were offering specialized eye care services (45%), critical care services (22%), cardiology (18%), endocrinology (11%) and cardiothoracic/vascular surgery (7%).



Figure 20: Outpatient services readiness

Conclusion: Majority of health facilities that reported providing specialized services offered obstetrics/gynaecology, paediatrics, general surgery, and internal medicine services. Sub-specialized health services were offered in a minority of these facilities e.g., urology, renal, cardiology, neurology, endocrinology, rheumatology and cardiothoracic surgery.

Recommendation: The Government and key stakeholders to improve on the availability and access to specialized and sub specialized medical services in the secondary and tertiary hospitals. This will also market Kenya as a preferred destination for inbound medical tourism.

3.3.3 Pharmacy Services

Availability of drugs and non-pharmaceutical commodities is critical for effective quality and complete care, especially in primary facilities. The census assessed availability of pharmacy services, hours in day pharmacy services are available, licensing of the pharmacy as well as availability of tracer commodities (drugs and non-pharmaceuticals).

About a half of facilities (57%) had pharmacy services and only 6% and 15% had all tracer drugs and non-pharmaceuticals respectively as shown in figure 21.



Figure 21: Availability of pharmaceutical services

3.3.3.1 Tracer Drugs

The mean availability of tracer drugs was 62%. Among the most available drugs were Nystatin oral suspension, Tetracycline Eye Ointment, Amoxicillin Capsules, Adrenaline Injection, Metronidazole Tablets, Sodium chloride solution, ORS Co-Pack and ORS, Hydrocortisone Injection, Albendazole Tablets and Paracetamol tablets.

Mental health drugs (Midazolam and Fluoxetine) were the least available with less than a quarter of facilities having them in stock. Midazolam injection was equally unavailable with only 23% of facilities having it in stock. Notably, 3 of every 1000 facilities that reported having a pharmacy did not have any of the tracer drugs as shown in figure 22.


Figure 22: Availability of pharmaceutical supplies (Tracer drugs) (n=6985)

Conclusions

Nearly half of health facilities do not provide pharmacy services and the vast majority of those who offer the service did not have the whole basket of tracer drugs. Average availability of tracer drugs, nevertheless was fair at 62% representing an increase of 24% from 44% in the 2018 Health facility assessment. Drugs for management of non-communicable conditions (hypertension and diabetes), mental health, labour and delivery as well as basic antibiotics were unavailable in most primary facilities.

Recommendations

- All facilities that provide outpatient and/ or inpatient services need to provide pharmacy services.
- Drugs for management of mental health conditions should be given attention especially at primary facilities to increase access to mental health services.
- Availability of drugs for management of non-communicable conditions should be improved in primary facilities

• Primary facilities should be stocked with key basic drugs including oxytocin to improve labour outcomes as well as basic antibiotics.

3.3.3.2 Tracer non-pharmaceuticals

The mean availability of non-pharmaceuticals was 76% with latex gloves, safety Boxes and syringes being among the most available (all in more than nine of every ten facilities).

Nasal Prongs for oxygen delivery, suction catheters and solusets were the least available non-pharmaceuticals, all found in just below a half of health facilities. Four of every 1000 facilities that reported having a pharmacy did not have any of the tracer non-pharmaceuticals as shown in figure 23.



Figure 23: Availability of non-pharmaceutical commodities in health facilities with a Pharmacy (N=6985)

Conclusions

Although average availability of non-pharmaceuticals was good, only a few facilities had the whole basket of the tracer items. The most unavailable items were solusets for fluids, sunction catheters and nasal prongs.

Recommendations

Investments need to be scaled up to increase availability of non-pharmaceutical supplies in health facilities, especially at the primary level. All facilities should always have all the items available in stock to provide quality and effective care. This would also prevent the inconvenience experienced when patients have to buy non-pharmaceuticals for their management.

3.3.4 Laboratory Services

Diagnostic services including laboratory services are central to providing the right care at the right time. All facilities offering comprehensive services (non-stand-alone) are expected to have laboratories suitable for their level of care. The Facility census assessed availability of laboratory services, the class of the laboratory as well as the types of diagnostic tests available in the facility.

Laboratory services were classified as basic or comprehensive. where basic includes availability of malaria test, urinalysis, blood glucose, urine test for pregnancy, sputum (TB test), HIV test, full hemogram, stool for ova and cyst tests; and comprehensive which include (in addition to the basic tests; blood typing and cross matching culture and sensitivity; Biochemistry; lipid profiles and Molecular testing.

The tracer indicators used to assess readiness to provide laboratory services are summarized in table 6 below.

Domain	Tracer Items
Services	Basic Laboratory Services
	Availability of malaria test, urinalysis, blood glucose, urine test for pregnancy, TB, HIV, full
	hemogram, stool for ova and cyst)
	Comprehensive Laboratory Services
	Availability of malaria test, urinalysis, blood glucose, urine test for pregnancy, TB, HIV, full
	hemogram, stool for ova and cyst; Blood creatinine; blood typing and cross matching; Culture
	and sensitivity; Biochemistry; lipid profiles; Molecular testing
Human Resource	Laboratory Technologist/ Medical Laboratory Technician
Infrastructure	Specimen collection area, Cold room, Hand wash basin with running water and soap
	Pathology services
Human Resource	Pathologist
Infrastructure	Autopsy kit

Table 6: Tracer items needed to provide laboratory Services

Figure 24 below shows that a half of all facilities had a laboratory while a half of facilities with a mortuary had pathology services. Of the facilities that had a lab, 87% had basic lab services while 54% had comprehensive lab services.



Figure 24: Proportion of facilities with Laboratory and pathology services available (N=6185)

3.3.4.1 Basic laboratory services

Approximately a quarter of facilities with a laboratory (24%) had all the assessed basic laboratory services while the average availability of basic laboratory services was 83%. Among the most available basic lab services were urine test for pregnancy (PDT), Malaria, Dipstick for urinalysis, Blood glucose and HIV/AIDs while below half (48%) had sputum tests for TB diagnosis and full hemogram as shown in figure 25.



Figure 25: Availability of basic lab services among facilities with a laboratory (N=6185)

Readiness to provide basic laboratory services

Among facilities that were providing laboratory services, 12% met the readiness criteria for basic laboratory services including having all the tests, infrastructure, equipment and human resource needed to provide the service.

Overall, the readiness score was highest for laboratory personnel (87%), relatively low for laboratory infrastructure (42%) and very low for services (18%) as shown in figure 26.



Figure 26: Readiness to provide basic lab services among facilities with a laboratory

Availability of Sputum (TB Test) and full haemogram tests, cold room and specimen collection area were the items that were least available in most facilities, consequently reducing readiness of facilities to provide basic laboratory services as shown in figure 27. As such, whereas reported basic laboratory service availability was found to be 50%, basic laboratory service readiness was noted to be 12%.



Figure 27: Readiness to provide basic lab services among facilities with a laboratory

3.3.4.2 Comprehensive laboratory services

The mean availability of comprehensive laboratory services among facilities with a laboratory was 64%. The least available services were Culture and sensitivity (14%), Lipid profile (28%), and Biochemistry (32%) Figure 28.



Figure 28: Availability of comprehensive laboratory services among facilities with a laboratory (N=6,185)

Readiness to provide comprehensive laboratory services

A total of 3824 facilities provided comprehensive laboratory services (31% of all facilities that offer laboratory services), out of which only 4% were ready to offer comprehensive lab services. Comprehensive services availability had the least score at 4% while a half of facilities had the required infrastructure to provide lab services. Almost all facilities with lab services (92%) had the personnel needed to provide the service (Figure 29).



Figure 29: Readiness to provide comprehensive lab services among facilities with a laboratory

Figure 30 below shows that Readiness to provide comprehensive laboratory services was 4% (in comparison to reported comprehensive laboratory service availability at 31%). It also presents the constituent resources required to offer comprehensive laboratory services. While personnel were available in the majority of facilities providing comprehensive laboratory services, limited availability of tests such as molecular testing, culture and sensitivity and lipid profiles tests (11%, 23% and 45% respectively) limited readiness of laboratories to provide comprehensive services.

In addition, about 7 of every 10 facilities had a cold room and a specimen collection area while almost all facilities had a laboratory technician or laboratory technologist.



Figure 30: Readiness to provide comprehensive laboratory services among facilities with a laboratory

Availability of laboratory services in primary health facilities

Overall, 5207 of PHC facilities (level 2 & 3) and 941 level 4 hospitals provided laboratory services consisting of 36% and 79% of levels 2 and 3 respectively. In addition, 97% of level 4 facilities had laboratory services. Within these facilities, most basic laboratory services were available with almost all facilities having tests for Stool for ova and cyst, HIV/AIDs, Blood glucose, Dipstick for urinalysis, Malaria and Urine test for pregnancy (PDT). TB and full haemogram were the least available tests in all PHC facilities.



Figure 31: Basic laboratory services in PHC facilities

Conclusion

Half of the facilities assessed did not provide any laboratory service but of those who provided, the majority had most of the basic laboratory services available. Among basic laboratory services, full hemogram and TB diagnostic tests were not widely available. Comprehensive laboratory services were however not available in many facilities especially lipid profiles and culture and sensitivity tests. Cold rooms and specimen collection area was a gap in a third of facilities providing comprehensive laboratory services compared to the higher-level facilities.

Recommendations

All facilities providing comprehensive care should be facilitated to provide laboratory services.

Capacities to provide TB diagnosis services and full haemogram should be strengthened at PHC facilities while in secondary and tertiary facilities, necessary capacities to provide lipid profiles, Culture and sensitivity as well as molecular testing should be put in place.

3.3.5 Maternity Services

Health facility preparedness is essential for delivering quality maternal and newborn care, minimizing morbidity and mortality by addressing delays in seeking skilled care, reaching appropriate facilities, and receiving emergency care. The health facility census revealed that only 40% of the facilities (4958) across all the KEPH levels were offering maternity services. Amongst the facilities offering maternity services, their ability to offer basic and comprehensive maternity services was assessed based on the service availability, equipment and human resource availability.

The tracer indicators used to assess readiness for maternity services are summarized in table 7 below.

Table 7: Tracer items needed to provide Maternity Services

Domain	Tracer Items				
Services	Basic Maternity Services;				
	Basic-assisted vaginal deliveries; emergency obstetric care				
Human Resource	Nurses; clinical officer or medical officer				
Infrastructure	Consultation room; post-natal ward; Hand wash basin with running water and				
	soap				
Equipment	Delivery bed; Maternity or post-natal beds; vacuum extractor; delivery packs,				
	Emergency tray , source of oxygen				
Domain	Tracer Items				
Services	Comprehensive Maternity Services;				
	Caesarian section; blood transfusion; assisted vaginal deliveries; emergency				
	obstetric care				
Human Resource	Nurses; clinical officer or medical officer				
Infrastructure	At least one theatre or maternity theatre, post-natal ward; Hand wash basin with				
	running water and soap				
Equipment	Delivery bed; Maternity beds; vacuum extractor; access to a blood bank; delivery				
	packs Continuous Positive Airway Pressure (CPAP) Machine, source of oxygen				

Basic Maternity Services Availability

Forty percent of facilities were offering basic maternity services. Of these, almost all had oxygen (97%), a delivery bed (98%), delivery packs (98%) and a nurse available (99%). On the other hand, emergency obstetric care service was only offered by a third of facilities while slightly above half had emergency tray and vacuum extractor available. Only 10% of these facilities had a clinician (medical officer or clinical officer).

Overall, 27% of facilities offering basic maternity services had all the tracer items needed to provide the service. Personnel was the rate limiting factor for this service.

13% of facilities had all the equipment required to offer basic maternity services while 1% of the facilities had none of the equipment. Majority of the facilities had delivery packs (92%) and delivery beds (86%). However, only above half (54%) of the facilities offering maternity services had an oxygen source and only 32% had a vacuum extractor as seen in the figure below.



Figure 32: Basic Maternity Care (n=4960)

Figure 33: Basic Maternity

Services Readiness

The readiness to provide basic maternity services was quite low at 4% compared to reported basic maternity availability of 40% with huge gaps in equipment availability (16%). Human resource availability was 63%. Overall readiness to provide maternity services was 15% as illustrated in figure 34.

Figure 34: Readiness to provide basic maternity services

Comprehensive Maternity Services Availability

Only 5% of the facilities offering maternity services had all the equipment required to provide comprehensive maternity services. Of the facilities that offered maternity services,18% reported to be conducting caesarian sections, only 42% had blood transfusion services and very few (16%) had CPAP machines figure 35 below.



Figure 35: Comprehensive Maternity Care (n=4958)

Comprehensive Maternity Services Readiness

The readiness to provide comprehensive maternity services was only 5% revealing the critical infrastructure, basic amenities and human resources gap that compromise the quality of maternal services being offered. Only 21% of the facilities offering comprehensive maternity services had a gynecologist while only 63% had a maternity theater figure 36 below.



Figure 36: Comprehensive Maternity Services Readiness

To ensure mothers are provided with quality care during and after delivery, it is important that service delivery guidelines and infection prevention is adhered to. Of the facilities that provided maternity services, more than 90% had SOPs for managing common obstetric emergencies and infection prevention guidelines. For proper waste management, almost all of these facilities had placenta pits or a macerator (91%), safety boxes (99%) and practiced waste segregation (96%). Nearly all of the facilities offering

maternity services had hand washing (97%) and ablution facilities (98%) within the maternity unit (Figure 37 below.





Conclusion

Whereas reported basic maternity services availability was found to be 40%, basic maternity services readiness was noted to be very low with significant gaps in availability of equipment. Readiness to provide comprehensive maternity services was also very low with notably inadequate maternity beds and specialist health workforce. In addition, key resources such as oxygen supply and resciscitaires were noted to be inadequate.

Recommendation

It is necessary to make urgent investments in resources such as the required health workforce and equipment including resuscitaires in order to increase the service readiness to offer both basic and comprehensive maternity services.

3.3.6 Newborn Health Services

In Order to improve the survival of newborns, it is essential that health facilities have newborn units that can provide high quality immediate newborn care at birth.

The tracer indicators used to assess readiness for newborn health services are summarized in table 8 below.

Domain	Tracer Items
Services	Newborn unit as proxy to the newborn services
Human Resource	Paedetrician, Medical officer, Nurse
Infrastructure	Newborn unit
Equipment	Incubator, Neonatal cots, Phototherapy machines, Resuscitaire, Suction machine
	Ambu bags, CPAP

Table 8: Tracer items needed to provide newborn health services

Newborn Unit Services Availability

Out of all the health facilities assessed that had maternity services, only 12% had provided newborn care services.



Figure 38: Newborn Unit Services Resource Availability

Newborn Unit Service Readiness

Majority of the facilities providing NBU services had most of the required equipment including suction machines (94%), resuscitaires (83%), phototherapy machines (81%) and incubators (94%) and ambu bags. However, just above half of these facilities had CPAP machines (56%). Most facilities had medical officers (85%) and nurses (99%) but only 41% had paediatricians (Figure 39 below).



Figure 39: Newborn Unit Service Readiness and availability

The readiness to provide newborn health services was quite low (22%) since only about 40% of the facilities had all the requisite equipment and personnel to provide the service (figure 40 below).



Figure 40: Newborn Unit Service Readiness

Conclusion

Both reported newborn care service availability and readiness were found to be very low with this related to suboptimal health workforce and equipment.

Recommendation

It is necessary to increase the availability of newborn services as well as the readiness to offer newborn care in order to increase access to these services such as with investment in the required health workforce and equipment. In the unique context of maternal and child health, investment in maternal health care must be complemented by the required newborn health care.

3.3.7 In Patient Services

These are services required for clients who may require longer term care, health interventions or monitoring. Only 20% (2148) of the facilities assessed were offering in-patient services. This is consistent with the fact that the majority of the health facilities in Kenya are primary health facilities offering outpatient consultations and referring cases that require admission to secondary care hospitals.

The tracer indicators used to assess readiness for inpatient health services are summarized in table 9 below.

Table 9: Tracer items needed to	provide inpatient health services
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In patient service	Human resource (must have all)	Infrastructure	Equipment
Medical ward as a proxy for Medical inpatient services	Medical officer/physician, Nurse	Either medical male ward or medical female ward, sluice room, hand wash basin, Toilets/ sanitary facilities	Inpatient beds
Sugical ward as a proxy to surgical inpatient services	Medical officer, General Surgeon, Nurse	Either surgical male ward or surgical female ward, sluice room, hand wash basin, Toilets/ sanitary facilities	excluding delivery beds, Oxygen, Suction machine
Paediatric ward as a proxy to paediatric inpatient services	Medical officer/paediatricians, Nurse	Either Paeditaric medical or paediatric surgical ward, sluice room, hand wash basin, Toilets/ sanitary facilities	
Orthopaedic ward as a	Orthopaedic surgeon,	Either Orthorpedic male or orthopedic	

In patient service	Human resource (must have all)	Infrastructure	Equipment
proxy for orthopaedic services	Medical officer, Nurse	female ward, sluice room, hand wash basin, Toilets/ sanitary facilities	
Gynaecological ward as a proxy to gynae. inpatient services	Gynaecologist, Medical officer, Nurse	Gynaecological ward, sluice room, hand wash basin, Toilets/ sanitary facilities	
Psychiatry ward as a proxy to the service	Nurse, Psychiatrist, Medical officer	Psychiatry ward, sluice room, hand wash basin, Toilets/ sanitary facilities	
Oncology services	Oncologist Specialist, oncology Nurse	Oncology ward, sluice room, hand wash basin, Toilets/ sanitary facilities	
Burns Unit/ward	Medical officer, General Surgeons, nurse	Burns Unit, sluice room, hand wash basin, Toilets/ sanitary facilities	
Isolation ward	Nurse, Medical officer/physician/clinical officer	Isolation Ward, sluice room, hand wash basin, Toilets/ sanitary facilities	

A total of 139,113 inpatient beds are available across different categories as shown in table below:

No. of beds per level of care						
	Total	Level 2	Level 3	Level 4	Level 5	Level 6
Number of functional in- patient beds (Excluding delivery beds)	100,827	6920	22908	57453	9262	4284
Number of Functional Cots	7,918	463	1618	4481	554	802
Number of Emergency Casualty beds	3,556	277	938	2067	216	58
High Dependency Unit (HDU) Beds	919	8	32	32 696		18
Maternity Beds	18,655	1278	4999 10674		1476	228
Delivery Beds	3,768	431	1475	1694	145	23
Isolation Beds	3,470	205	637	2155	381	92
ICU Adults beds	899	5	5 20 53		221	115
ICU Pediatric beds	196	3	1	128	39	25
ICU Neonatal beds	258			164	65	29
Overall total	140,466	9,590	32,628	80,050	12,524	5,674

Table 10: Number of beds per level of care

The most commonly offered inpatient service were medical services (85%) and pediatric services (69%). Less than a third (27%) of facilities offered inpatient surgical services, Oncology inpatient services (4%) and psychiatric inpatient services (4%) were amongst the least available services (Figure 41).

Assessment of IPC in the inpatient wards revealed that most of the facilities had safety boxes (96%), colour coded bins (90%) and appropriate footwear (82%). However, only 76% of the inpatient wards had IPC protocols in place. 90% of the inpatient wards had sanitary and hand washing facilities.



Figure 41: Availability of inpatient services

20% of all assessed facilities offered inpatient services with the most available being medical inpatient services and the least available being oncology and psychiatric inpatient services.

It is necessary to increase the availability of inpatient services for oncology and psychiatric services but overall to obtain data on disaggregated need for inpatient services to invest in the required services.

3.3.8 Critical Care Services

Critical care is the medical care provided to patients that are critically ill with life-threatening injuries or illnesses. During the health facility census, the provision of critical care services was assessed focusing on the availability of ICU and HDU services including the availability of the infrastructure and equipment needed to provide critical care. Additionally, availability of theater facilities was also assessed.

The tracer indicators used to assess readiness for critical care services are summarized in table 11 below.

Critical care (ICU, HDU)	Human resource	Infrastructure	Equipment
HDU services	Physician, Critical care	Room set aside for Critical care	HDU adult beds HDU cots,
	nurse, Medical officer		Patient monitor, Oxygen source,
		Nursing station	Infusion pump, Ripple mattress,
			Emergency trolley
Functional ICU	Physician, Critical care	Hand wash basin with running water and	ICU adult beds, ICU cots, Patient
as a proxy to ICU	nurse, Medical officer	soap	monitor, Piped Oxygen Supply,
services			Infusion pump, Ripple mattress,
			Emergency trolley, CPAP,

Table 11: Tracer items needed to provide critical care services

Critical care (ICU, HDU)	Human resource	Infrastructure	Equipment
			Ventilator
Theatre services	General Surgeon Theatre Nurse Anaesthisiologist /CO Anaesthetist	Functional theatre (at least one) Pre-operative area & Post-operative area Receiving area has adequate lighting Staff scrub area; Sluice room Hand wash basin with running water and soap	Backup oxygen

217 facilities reported that they provide High Dependency services and 164 facilities provided Intensive Care services as part of critical care services. Amongst the facilities offering HDU services, about 95% (206) have an emergency trolley, 96% (209) have patient monitors and 97% (211) have a reliable oxygen supply. However only 71% (153) of the facilities offering HDU services are able to do blood gas analysis (BGA).

Amongst the facilities that have ICU services, all of them have patient monitors and a reliable source of oxygen. 98% (161) of the facilities have ventilators and 98% (161) have emergency trolleys. 145 (88%) facilities have CPAP machines and 161 (98%) have intubation sets.



Figure 42: Availability of HDU Equipment (n=217)



Figure 43: Availability of ICU equipment (n=164)

Table 12: Critical care beds in government owned facilities by level of care

No. of HDU/ICU beds	Level 4	Level 5	Level 6
HDU adult beds	154	41	31
HDU cots	23	9	6
ICU Adults beds	104	120	166
ICU Pediatric beds	12	16	32
ICU Neonatal beds	2	17	46
Total	295	203	281
Grand Total			779

The government owned hospitals reported having a total of 779 critical care beds. The distribution of the critical care beds (HDU and ICU) within the government owned hospitals is summarized in the table 12 above with Level 6 facilities having the highest numbers of ICU beds and Level 4 facilities having the highest numbers of HDU beds.

Theatre services

Overall, 8% of facilities provided theatre services with the vast majority having general theaters. Maternity theaters were available in half of facilities providing theatres services. The least available theatres were paediatric, ENT and ophthalmic theaters. Most theatres had all the infrastructure needed including pre and post-operative areas and sluice facilities. @ of every 10 facilities did not have at least three dedicated staff to theatre.



Figure 44: Availability of theatre services

Conclusion

Overall, there were few facilities offering critical care services with a lower availability of paediatric beds when compared to adult beds and less than optimal availability of all required equipment in both HDU and ICU.

Recommendation

It is necessary to increase the availability of critical care services for both adult and paedaitric services with requisite investment in all the necessary equipment.

3.3.9 Dental Health Services

Through the Kenya National Oral Health Policy 2022-2030, the Ministry of Health seeks to promote oral health, prevent oral diseases by integration and strengthening of health systems capacity to provide oral health services. The health facility census sought to assess the availability of dental services which included the assessment of the services provided by health facilities, the availability of the human resource, infrastructure and equipment needed to provide the services.

The tracer indicators used to assess readiness for dental health services are summarized in table 13 below.

Dental services	Human resource	Infrastructure	Equipment
Extractions	COHO/Dentist	Consultation/extraction room	
Fillings	Dentist/conservative dentist	Conservative room	Fixed chair/mobile chair; Extraction forceps
Full mouth scaling	Dentist/periodontist	Hand wash basin with running water and soap; Periodontic room	Dental chair; restorative set
Root canal treatment	Dentist/endodontist	Endodontic room	
Dentures	Dental/prosthodontist	Drocthotic room, dontal lab	
Dental implants	Periodontist	Prostiletic room, dental lab	
Disimpactions	Dentist/Maxillofacial surgeon	Consultation room	
Intermaxillary fixation	Dentist/Maxillofacial surgeon	Minor Theatre	
Age assessment	Dentist		
		Theatre	
Major surgical procedures	Maxillofacial surgeon and pathologist	Hand wash basin with running water and soap;	
		Periodontic room	
Minor surgical procedures	Dentist		Surgical kit

Table 13. Tracer items needed to provide dental health services

Out of the health facilities assessed, 1,542 (13%) facilities reported that they provide Dental Services. 99% (1527) of the facilities offering Dental Services reported offering dental extractions, 89% (1371) offer dental fillings, 87% (1,338) offer full mouth scaling, 84% (1298) offer root canal treatment, 61% (933) offer age assessment services, 38% (578) offer intermaxillary fixation, 73% (1,129) offer dentures, 73% (1,131) offer minor surgical procedures and 71% (1,089) offer disimpaction. However, only 17% (267) of the facilities offer major surgical procedures and 29% (449) offer dental implants (Figure 45 below).



Figure 45: Proportion of dental services offered

Of the facilities offering dental services, 92% (1,412) had functional dental chairs with accessories (water connection; compressor) while 70% (1,073) had fixed chairs for extractions (no water/compressor). 95% (1,460) of the facilities offering dental services reported having equipment for extraction (full set of extraction forceps and elevators) while only 78% (1,201) had an emergency tray. 96% (1,472) had hand wash basins with running water and soap as shown in figure 46 below.



Figure 46: Dental equipment and supplies

It was generally reported that there was a total of 1,395 dental officers and 1,193 Community Oral Health Officers (COHO). However, only 2% (255) of the health facilities assessed had access to a dental specialist.

Conclusion

There was a low reported availability of dental services in assessed facilities with less than 1 in 5 of these facilities performing major dental surgical procedures. There was minimal access to the services of dental specialists in the assessed facilities.

Recommendation

It is necessary to scale up access to dental services for both minor and major procedures with increased investment in the required resources including health workforce particularly dental specialists.

3.3.10 Radiology Services

Radiology services are a useful tool in the screening, diagnosis and management of various health conditions including maternal-child health, infectious and noncommunicable diseases. In this assessment, availability of diagnostic equipment in facilities was assessed based on the presence of x-ray equipment namely OPG, CT-Scan, X-ray, Ultrasound, MRI, Mammography, IOPA, Fluoroscopy, radionuclide scan, endoscopy and colonoscopy.

The tracer indicators used to assess readiness for radiology services are summarized in table 14 below.

Table	14:	Tracer	items	needed	to	provide	radiology	services
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Radiology	Human resource	Infrastructure	Equipment
Basic Radiology services (X-ray; Ultra sound)	Radiographer Sonographer	Radiology Unit Dark room	Ultrasound machine X-ray machine either fixed or portable
Comprehensive Radiology services (X- ray; Ultra sound; CT Scan; Fluoroscopy; MRI Mammography; Endoscopy; OPG; IOPA)	Radiographer Sonographer Radiologist	Radiotherapy bunkers Radiology Unit Dark room	Ultrasound machine X-ray machine, either fixed or portable, CT scan slicer, OPG machine, IOPA machine, Endoscopy tower MRI(3T)
Specialized radiology services; (, PET scan; Radionuclide scan)	Radiologist Nuclear medicine physician	Radiology Unit, Dark room Radiotherapy bunkers	PET scan machine Radionuclide scan machine

Overall, only 11% of facilities provided radiology services; of these, ultrasound services were most readily available at 95%. X-ray services were available in almost two thirds of facilities (62%). Less than one fifth of facilities provided IOPA services, CT-scan, OPG, colonoscopy and mammography at 17%,16%,14% and 10% respectively. MRI and fluoroscopy were the least readily available imaging services while radionuclide scans were not available in any of the facilities as in figure 47 below;



Figure 47: Availability of Radiology Services (N=1,326)

Availability of radiology equipment was varied with x-rays available in almost all (83%) facilities and nearly one in every 6 facilities (59%) had an x-ray machine. Less than a fifth of facilities had CT Scan slicer, endoscopy tower and OPG machine at 15% and 12% respectively. The least readily available equipment was MRI, PET and radionuclide scanner as in the figure 48 below:



Figure 48: Availability of Radiology Equipment (n=1332)

One in ten facilities (11%) provided basic radiology services (x-ray and ultrasound). The readiness to provide basic radiology services among these facilities was assessed based on availability of all the tracer items that included the radiology services (x-ray and ultrasound), availability of radiology equipment (x-ray and ultrasound machine) and personnel(radiographer) was 21%. Basic radiology services were most readily available at 58%. Three out of ten facilities providing basic radiology services (31%) had all the personnel while almost half of facilities (49%) had all the equipment.



Figure 49: Readiness to provide basic radiology services

Less than a tenth (4%) of facilities in the country provided comprehensive radiology services (X-ray; Ultrasound; CT scan; Fluoroscopy; Mammography; Endoscopy; MRI; OPG; IOPA). The readiness to provide comprehensive radiology services among these facilities that provided comprehensive radiology services was also very low (1%). This was assessed based on availability of all the tracer items that included availability of radiology services (X-ray; Ultrasound; CT scan; Fluoroscopy; Mammography; Endoscopy; MRI; OPG; IOPA), availability of radiology equipment (Ultrasound machine, X-ray machine either fixed or portable; CT scan slicer; OPG machine; IOPA machine, Endoscopy tower and MRI) and personnel (radiologist and radiographer). Only 2 and 3% facilities respectively, had all the tracers for comprehensive radiology services and equipment respectively as shown in figure 50 below.



Figure 50: Readiness to provide comprehensive radiology services

Less than one percent of facilities in Kenya provided comprehensive radiology services (PET and radionuclide scans). The capacity of these facilities to provide specialized radiology services was equally low at 5.4%. This was assessed through establishing the availability of all tracers including specialized radiology equipment (PET scan & radionuclide scan machine); specialized radiology services (PET and radionuclide scans) and the requisite personnel (radiologist and nuclear medicine physician). All tracers for specialized radiology services were available in almost a quarter (24%) of facilities while all tracer equipment and personnel were available in 19% and 8% of facilities respectively as in the figure 51 below.



Figure 51: Readiness to provide specialized radiology services

Conclusion

• Of all facilities offering radiology services, ultrasound and x-ray services were the most available services while specialized radiology services like PET and radionuclide were least available.

• Readiness to provide basic, comprehensive and specialized services was low indicating low availability of the radiology services, equipment and personnel necessary to provide the various radiology services.

Recommendations

- To ensure quality PHC services, overall access to radiology services should be enhanced; particularly increase availability of basic radiology services and enhance the readiness to provide the services.
- In view of low breast cancer screening rates (13% KDHS 2022), better screening approaches for screening of breast cancer, and investments made within the MES project, there is need to reconsider policy direction in use of mammograms in health facilities
- To increase access to MRI services within geographical regions, there is need to ensure geographical spread to ease access to the service (ensuring the MRI facilities are accredited with NHIF)

Renal Services

An increase in the burden of NCDs with kidney failure as a sequelae has seen an increase in the demand for renal services (diagnosis, management and treatment of complications for patients with kidney impairment and/or disease). The assessment sought to establish the availability of renal services and capacity of facilities to provide renal services.

The tracer indicators used to assess readiness for renal services are summarized in table 15 below.

Domain	Tracer Items
Services	Dialysis (Renal) services
Human Resource	Physician/Nephrologist, Medical Officer, Nephrology nurse
Infrastructure	Consultation room, Treatment room, Isolation room, Dialysis arrow water plant Room, Hand wash basin with running water and soap
Equipment	Dialysis bed, Dialysis machine, Oxygen Source, ECG, Suction Machine, Defibrillator Endotracheal tubes, Laryngoscope, Bag valve mask

Table 15	5: Tracer i	items ne	eded to	provide	renal	services
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Among the assessed facilities, renal services were available in only 2% of the facilities translating to very low availability. Among the facilities that provided renal services, availability dialysis services and equipment like dialysis machines and beds were assessed. Dialysis services were readily available in facilities providing renal services at 85%. Nine out of ten facilities providing renal services had dialysis machines and dialysis beds as seen in figure 52 below.



Figure 52: Availability of Renal Services

The readiness to provide renal services among facilities that reported having renal services was assessed based on availability of all the tracer items that included personnel (physician/nephrologist, medical officer and nephrology nurse), infrastructure (consultation room, treatment room, isolation room, dialysis arrow water plant room and hand wash basin with running water and soap) and equipment (dialysis bed, dialysis machine, oxygen source, ECG, suction machine, defibrillator, endotracheal tubes, laryngoscope and bag valve mask).

Overall readiness to provide renal services was 42%; all facilities providing renal services had all the tracer equipment while almost three quarters (71%) had all the tracer infrastructure. Tracer personnel was least readily available with only half of the facilities having all the required personnel as seen in figure 53 below.



Figure 53: Availability and Readiness to provide Renal Services

Medical officers were available in all the facilities providing renal services while nephrology nurses and physicians or nephrologists were available in almost three quarters (72%) and 64% of the facilities respectively as seen in figure 54 below.



Figure 54: Availability and Readiness to provide Renal Services

During the census, it was found that availability of renal services amongst the government owned hospitals increased from level 4 at 11%, to 79% at level 5 and 80% at level 6. Most of the dialysis services offered by government hospitals were noted in Level 5 (57%) and Level 6 hospitals (40%).



Figure 55: Government hospitals offering renal services

Conclusion

- Overall availability of renal services was low
- Less than half of facilities providing renal services had all the necessary equipment, services and infrastructure to provide the service
- All facilities providing renal services had the necessary infrastructure to provide the services

Recommendations

- With the increasing burden of non-communicable conditions, kidney transplant and posttransplant services should be enhanced to reduce the burned of population needing dialysis, and improve quality of life for patients with renal failure.
- In view of the rising burden of NCDs in the country, there is need to increase availability of renal services
- The number of nephrologists/physicians and renal nurses in the facilities providing renal services need to increased

ENT, eye care, rehabilitative services and mortuary services

The government's goal of realizing Universal Health Coverage aims to promote access to the required quality health services. This includes access to ophthalmology(eye), ear, nose and throat health services. The objective is to manage preventable morbidity and mortality related to trauma, communicable and non-communicable diseases in this context.

Rehabilitative health services are also critical for re-skilling or restoring abilities that may have been lost due to illness and injury such as that those that follow trauma, cardiovascular events such as stroke or even childbirth This aims to restore dignity, independence as well as continuation of activities of daily living, learning, social and economic engagements.

Often neglected are mortuary services that are required after mortality events. These are closely associated with pathology services in the context of post-mortems to query cause of death. These are critical to augment morbidity data that is critical for facility level, sub-national as well as national level planning for health systems strengthening.

The tracer indicators used to assess readiness for ENT, eye care, rehabilitative services and mortuary services are summarized in table 16 below.

Domain	ENT tracer Items				
Services	ENT unit as a proxy to ENT services				
Human Resource	ENT surgeon				
Infrastructure	Audiology room, Minor Theatre, Operating Theatre, Ear Mould lab, Hand wash				
	basin with running water and soap				
Equipment	Audiomentry Set, Autoscope				
Domain	Eye care tracer Items				
Services	Eye unit as a proxy to eye services				
Human Resource	Nurse-ophthamology, Optometry technologist (HD) / CO-				
	ophthalmology/Ophthalmologist				
Infrastructure	Consultation, Procedure room, Glazing Room, Operating Thetre, Refraction room				
	Hand wash basin with running water and soap				
Equipment	Slit Lamp, Opthalmoscope, Retinoscope, Tonometer, Keratometer, Trial Frames				
	(for both adults and children), Foreign body Remover/scoop				
Domain	Rehabilitative services tracer Items				
Services	Physiotherapy				
Human Resource	Physiotherapist				
Infrastructure	e Consultation room, Treatment room, Recreation room, Devices fabrication roor				
	Hand wash basin with running water and soap				
Equipment	Parallel bar, Standing aid, Exercise mat, Hand therapy devices, Squeeze balls				

Table 1	16: ⁻	Tracer	items	needed to	provide	ENT,	Eye care,	rehabilitative	services and	l mortuary	services
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MINISTRY OF HEALTH

Domain	ENT tracer Items
Domain	Orthopaedic Therapy tracer Items
Services	Orthopaedic Therapy
Human Resource	CO orthopaedics /Orthopedic technologist/ Orthopedic trauma technologist
Infrastructure	Consultation room, Orthopaedic trauma unit, Orthopaedic technology workshop
	Prosthetic area, Hand wash basin with running water and soap
Equipment	

Figure 56 below shows that ENT and eye services were largely available in hospitals while few dispensaries and health centers (30 to 40%) had these services. Rehabilitative services were notably not available in dispensaries despite this being a key service. Hardly any facilities in Levels 2 and 3 reported offering mortuary services.



Figure 56: Proportion of specialized services (ENT, Eye, Rehabilitation, Mortuary) available per level of the health system

Conclusion

The census findings suggest that there is a low level of availability of ENT, ophthalmology and rehabilitative services at the Primary Health Care level which does not align with the government agenda for health with resultant unmet need. In addition, there is a sub-optimal availability of mortuary services within the primary healthcare facilities.

Recommendations

There is need to increase investment for provision of ophthalmology, ENT, rehabilitative and mortuary services within primary health facilities with consideration of the disease burden. This could include policies that incentivize provision of the same within the private sector with consideration of factors affecting access including financing.

3.2.12 Emergency Services.

Accident and emergency services

Accident and emergency are vital and critical services that prevent loss of life and initiate action towards restoration of normal healthy life. The tracer indicators used to assess readiness for emergencies services include, availability of an accident and emergency unit, referral mechanisms and access to an ambulance (BLS or ALS).

Out of these 166 (2.3%), 138(5.9%) and 4(80%) were level 2, 3 and 6 respectively. For emergency services, 100% of all the facilities that offer Basic Outpatient services had referral mechanisms across all the levels. Of the 49% of the facilities that had access to an ambulance, 31% could access a BLS Ambulance, 9% could access both BLS and ALS while only 6% had access to ALS ambulance only.

Discussion and conclusion

Summarily, the status of emergency services in the country are at a precarious state as indicated by the census. For instance, only 5.8% of all facilities had accident and emergency services while 49% facilities had access to an ambulance. A third of those with access to an ambulance could only access a BLS Ambulance. We are however in a good place as it pertains to referral services where the service is 100% available in all facility levels.

Recommendation

The facilities should ensure that they have arrangements to access an ambulance even on contract basis to allow for faster access in times of need. Higher level facilities should be resourced to acquire an ambulance so as to support the lower-level facilities.

3.3.11 Infection prevention and control (IPC)

Infection prevention is paramount to both the patients and health care providers and a critical part of quality and safety. The IPC practices were observed to be lowest in level 2 facilities and improved in the higher levels of care. Availability of IPC guidelines were observed in 61%, 78%, 88%, 91%, and 100% of level 2, 3, 4, 5 and 6 facilities respectively. The fact that these guidelines lacked in 39% and 22% of level 2 and 3 facilities respectively means a high risk of infections.

Waste segregation allows for different types of waste to be handled in the most effective and sustainable manner. Medical waste was found to be segregated into 3-color coded bins which existed in 88%, 94%, 98%, in level 2, 3, and 4 facilities and 100% in level 5 and 6 facilities. Safe boxes are a critical part of medical waste segregation and promote safety while handling sharps.. Availability of safety boxes at all relevant service points was observed in 94%, 97%, and 98% of level 2, 3, and 4 facilities respectively and 100% of level 5 and 6 facilities.

Securing medical waste appropriately before disposal prevents tampering of the same by unauthorized persons and promotes safety of the handlers and the community. Availability of a secured holding area for medical waste was found in 57%, 74%, 87%, 88%, and 100% of level 2, 3, 4, 5 and 6 respectively. The eventual waste disposal needs to conform to prescribed standards for environmental sustainability. Availability of incinerator/microwave was observed in 14%, 28%, 43%, 62%, and 60% of level 2,3,4,5 and 6 respectively. For those that did not have an incinerator, a waste management contract with a company

approved by NEMA existed in 48%, 53%, 66%, 85%. and 50% of level 2,3,4,5, and 6 respectively. The summary of these findings is tabulated in figure 57 below.



Figure 57: Infection prevention control

3.4 HEALTH WORKFORCE

Health workforce is the only living pillar in the health system that instrumentalizes all other health system resources for service delivery to promote optimal health outcomes. It is essential to have the required health workforce in terms of numbers and required skills to deliver health services and meet the dynamic disease burden.

There are various cadres within the health workforce including nurses, medical doctors, dentists, pharmacists, clinical officers, laboratory staff and rehabilitative staff within which groupings there are also sub-specializations to meet client health needs. Multidisciplinary health worker teams are required to attend to the entire scope of care required by any one patient.



Figure 58: Health workforce access per 10,000 people (medical officers, dental officers, pharmacists, nurses and clinical officers)

The census enumerated access to health workers of different cadres and specializations within health facilities across the country. Figure 59 above represents the density of core cadres (access) within the country. As per census findings, health worker access was lowest for dental officers followed by pharmacists, general medical officers, clinical officers with greatest access to nursing cadres.

3.4.1 Availability of core health workforce

Only 12 Counties have the required core health worker numbers per population (Nurse, Clinical officer, Doctor); The national average is less than the WHO recommended ratio (Figure 60).



Figure 59: Core Health workforce access per 10,000 people (medical officers, dental officers, pharmacists, nurses and clinical officers)

3.4.2 Health worker Terms of Employment

Beyond the production of the health workforce, there are additional factors that affect access to required services within the health system. Health worker recruitment and employment determines client access to health services.



Figure 60: Health worker enumeration by terms of employment (national level)

Presents the census data on specified terms of employment for health workers aggregated at national level. The findings presented indicate that most health workers (92840) enumerated in the census have been engaged on permanent and pensionable terms. This is followed by health workers recruited on contract terms (86443) with the least number of health workers being employed as casual skilled professionals.

Among health workers enumerated as contract staff, 6542 health workers were reported to be engaged under the UHC contract which aims in line with the Health Sector Strategy to increase the numbers of health workers to improve service access. It was also reported that 17, 878 health workers were noted to be contract workers engaged by different employers including the County governments and non-governmental organizations.

Discussion and conclusion

The census findings suggest that there is minimal access to dental health workers and pharmacists in comparison to general medical officers, clinical officers and nurses across all health facilities in the country. However, the data does not enable the development of conclusive health workforce policy due to inability to calculate health worker densities per a specific population.

The data collected during the facility census suggests that the majority of health workers in the sector are employed on permanent and pensionable terms followed by health workers recruited on contract terms with the least number of health workers employed on casual terms. However, it is suggested that data on terms of employment should be considered together with the actual terms of engagement related to activity hours if it is to be related to output and hence health outcomes.

Recommendations

• There is need to obtain more health workforce data to enable the consideration of health worker density within the health system. This could be obtained through primary surveys or triangulation of existing data sources in consideration of the fact that the census did not consider service

availability of health workers in more than one facility in the context of dual practice as well as practice on locum basis hence inability to interpret as absolute numbers.

- In addition, there is a need to consider the utility of health worker ratios particularly at national level in planning as they may not consider factors such as work hours and varying scopes of practice between the different cadres and specializations.
- It is recommended that the role of various forms of employment in health outputs and outcomes should be determined. In addition, consideration should also be made of the terms of engagement for the different terms of employment to relate this to health worker productivity and performance.
- Further, consideration should be made on the effect of engaging skilled health professionals as casual workers on health outcomes.
- Capacities of existing staff should be enhanced to leverage on their availability to provide better quality care
- This includes also enhancing staff welfare including better enumeration and work environment
- To ensure quality health services are accessed at the primary health care levels, PHC facilities should be adequately resourced with the right human resource including at least one nurse, clinical officer laboratory staff and a pharmacy staff.
- Innovative ways of ensuring specialist services are accessed at lower-level facilities should be explored as the country continues to train more specialists.

3.5 PRIMARY HEALTH CARE

One of the key outputs in the UHC is to increase the use of the health care services in order to improve health outcomes in the population. Primary Health Care (PHC) is envisaged as the gateway to attaining Universal Health Coverage (UHC). The establishment of Primary Health Care Networks (PCNs) is expected to help achieve this objective by scaling up and improving delivery of primary health care. To achieve this objective, there is a need to have an equitable coverage of PHC facilities in the country. In addition, these facilities must be well resourced to deliver the basic health care services. The health facility census provided critical findings that will help inform the status of these fundamental areas and plan efficiently on the PCNs.

3.5.1 Ownership of primary health care facilities

The private and faith- based sector makes a significant contribution in health care, and strengthening partnership and collaboration in the sector is critical towards enhancing quality and safety of care. Majority of level 2 and 3 health facilities were government owned at 47% and 48% respectively while majority of level 4 health facilities (49%) were privately owned as illustrated in the figure 61 below.



Figure 61: Facility ownership, PHC

3.5.2 Distribution of primary health care facilities

The UHC requires that the health care benefits are distributed equitably on the basis of need and not ability to pay. As such, the distribution of the level 2 and 3 facilities as well as the hub need to be in such a way that they are able to meet the needs of the community in terms of accessibility.



Density of Level 2 facilities

Density of Level 3 facilities

Density of Level 4 facilities

Figure 62: Distribution of the primary health facilities in Kenya

From figure 62 above, there were 8,806 level 2 health facilities, 2,559 level 3 and 971 level 4 health facilities in Kenya. Majority of the Level 2 facilities were in Nairobi, Kiambu, Nakuru and Meru counties while Wajir, Mandera, Tana River, Isiolo and Lamu had the least number of Level 2 health facilities. Level 3 facilities were more in Nairobi, Homa Bay, Kisumu, Kiambu and Kakamega counties. The density of primary health care facilities nationally was 2.4 per 10,000 population. Bomet, Narok and Bungoma counties had the lowest facility density at 1.1, 1.4 and 1.4 per 10,000 population respectively while Nyeri Tharaka Nithi and Lamu had the highest facility density at 4.4, 4.3 and 3.9 per 10,000 population respectively. The density of primary health care facilities for all counties is illustrated in the figure 63 below.



Figure 63: Density of primary health care facilities

The availability of basic amenities including reliable water source, mobile signal, access by road and reliable electricity was evaluated. These support and affect access to health care services, and were observed to be fairly well available. These were best available in level 4 and least available in level 2 facilities as outlined in the chart below.



Figure 64: Availability of basic amenities, PHC
3.5.3 NHIF Accreditation of primary health care facilities

Health care financing has been recognized as one of the health systems strengthening pillars. NHIF is the key health insurance provider in the country. Of all primary health care facilities empanelled and contracted by NHIF to provide services, 55% were public facilities while 38% were private facilities. However, the majority of level 4 health facilities accredited by NHIF were private facilities (48%) as shown in the chart below.



Figure 65: Primary health care facilities Accredited by NHIF

3.5.4 Linkage to Community Health Units

More public facilities were linked to community health units (CHUs) compared to private facilities and linkage was higher in lower-level facilities. A good number of private level 4 facilities (22%) are linked to a CHU.



Figure 66: Primary Health Care facilities linked to community health Unit (CHU)(s)

Facilities linked to a community Unit by facility ownership

Among the support that is offered to the Community Health Units by the health facilities they are attached to; community outreach and communication dialogue days were the most. The support is less among the level 2 and 3 as shown in the chart 60 below.



Figure 67: Support offered to CHUs linked to the Health Facilities

3.5.5 Basic Outpatient Services in primary health care facilities

One of the key outputs of the PHC is to provide essential health services. The extent to which 16 basic outpatient services were offered was evaluated for primary health care facilities. 88% of the level 2 facilities, 93.0% of level 3, and 97% of level 4 facilities reported offering basic outpatient services. The most available services included management of both communicable and non-communicable diseases, MCH/FP and immunizations services. Least available included rehabilitative, physiotherapy and mental health services. Only 14 % of level 4 health facilities offered the entire package of basic outpatient services while 1% and none of level 3 level 2 facilities respectively offered the entire package of basic outpatient services as shown in the figures 65 below.



Level 2 Level 3 Level 4



Of the government owned PHC facilities, 89% of level 2 facilities and 98% of level 3 facilities offer immunization services as shown in the figure 69 below.



Goverment facilities offering Immunization services among facilities with basic outpatient services





Figure 70: Range of Basic Outpatient Services provided by the primary health care facilities.

3.5.6 Availability of outpatient medical equipment in primary health care facilities

The average availability of basic outpatient equipment was at 86%, 94% and 99% in level 2, level 3 and level 4 health facilities. Basic equipment like BP machine, weighing scale, examination couch, thermometer and stethoscope were available in most PHC facilities. On the other hand, most level 2 facilities lacked Oxygen cylinder and flow meter/oxygen concentrators, Nebulizers, Pulse oximeter, Examination light, Foot stepper, Updated and well stocked emergency tray, Privacy screen, Stadiometer Pedal bins and Drip stands.as shown below.



Figure 71: Availability of outpatient medical equipment in primary health care facilities

Amongst the government owned facilities availability of equipment had glaring disparities from the lower to higher levels of care. Level 2 facilities had the largest gaps in availability of equipment reporting unavailability of oxygen equipment in 74% of facilities as opposed to a lack of oxygen equipment in only 15% of Level 4 facilities as shown in the graph below.



Figure 72: Proportion of government facilities without basic Equipment by level of care

Basic Maternity Services and Equipment in primary health care facilities

Basic maternity services that are expected in the PHC facilities include assisted vagina delivery, labour management and management of complications during pregnancy. Majority of primary health care facilities had delivery packs, emergency trays and delivery beds. However, a minority of them had an oxygen source, CPAP machine and were able to offer blood transfusion. Cesarean sections were done in 72% and 10% of level 4 and 3 facilities respectively. The findings are shown in the figure 73 below.





The census found that 12% of government owned level 3 facilities were not offering maternity services as shown in the figure 74 below. This is an area that should be strengthened in line with UHC and improving access to health services. The 2% of level 4 government facilities not offering maternity services were found to be specialized hospitals.



■ Facilities offering Maternity Services ■ Facilities without Maternity Services

Figure 74: PHC Government facilities offering maternity services



Figure 75: Availability of basic maternity equipment in PHC

Basic Radiology Services and Equipment in primary health care facilities

Basic radiology and imaging services (X-rays and ultrasound), are required for effective primary care of patients and access to basic imaging equipment are integral to achieving UHC. 91% of Level 2 facilities offered Ultrasound while only 46% offered X ray. The trend is replicated in Level 3. In both levels, the Ultrasound is more readily available compared with X ray. The services were readily available in level 4 facilities at 97% and 81% for U/S and X-ray respectively. The availability of basic radiology and imaging services in primary health care facilities is illustrated below.



Figure 76: X-ray and ultrasound services in PHC facilities

3.5.7 Human Resource for Health in primary health care facilities

The delivery of UHC is highly dependent on the efficient delivery of primary health care services. Besides medical equipment, human resource is a fundamental resource for the success of the PCNs and ultimately the UHC. The assessment of health workforce in level 2 and 3 focused on the availability of at least one clinician, (either a clinical officer or a medical officer), nurse, laboratory staff, radiographer, COHO/Dentist and Pharm tech/pharmacist.

Nurses were the most available cadre at 80%, 94% and 99% in levels 2, 3 and 4 respectively. The least available cadre was radiographers and dental personnel. Only 1 % of level 2 facilities had all the requisite health cadres, 2% of level 3 and 36% of level 4 as illustrated below.





Figure 77: Core medical staff in PHC

In response to the UHC agenda, there should be at least 3 nurses per level 2 facility to provide basic quality health services. The table 17 below shows that only the county of Nairobi had more than 50% of their level 2 facilities manned by at least 3 nurses.

			Absolute Number	Percentage %
			Level 2 facilities with less than 3	Level 2 facilities with less
	County	Total	Nurses	than 3 Nurses (%)
1.	Nairobi	66	28	42.4
2.	Mombasa	40	27	67.5
3.	Kiambu	81	61	75.3
4.	Nakuru	158	127	80.4
5.	Bungoma	124	101	81.5
6.	Uasin Gishu	113	94	83.2
7.	Kisumu	72	61	84.7
8.	Trans Nzoia	59	50	84.7
9.	Lamu	36	31	86.1
10.	Wajir	72	62	86.1
11.	Meru	130	112	86.2
12.	Kakamega	125	108	86.4
13.	Busia	74	64	86.5
14.	Garissa	50	44	88
15.	Bomet	70	62	88.6
16.	Isiolo	28	25	89.3
17.	Nyeri	107	96	89.7
18.	Kisii	83	75	90.4
19.	Taita Taveta	52	47	90.4
20.	Migori	118	107	90.7
21.	Muranga	121	110	90.9
22.	Kilifi	118	108	91.5

Table 17: Proportion of Level 2 facilities with less than 3 nurses by county

			Absolute Number	Percentage %
			Level 2 facilities with less than 3	Level 2 facilities with less
	County	Total	Nurses	than 3 Nurses (%)
23.	Siaya	113	104	92
24.	Tharaka Nithi	100	92	92
25.	Turkana	136	126	92.6
26.	Machakos	99	92	92.9
27.	Tana River	45	42	93.3
28.	Kericho	122	114	93.4
29.	Vihiga	52	49	94.2
30.	Laikipia	70	66	94.3
31.	West Pokot	116	110	94.8
32.	Embu	80	76	95
33.	Nandi	121	115	95
34.	Nyamira	66	63	95.5
35.	Narok	71	68	95.8
36.	Kajiado	85	82	96.5
37.	Kwale	143	138	96.5
38.	Baringo	183	177	96.7
39.	Mandera	62	60	96.8
40.	Makueni	112	109	97.3
41.	Elgeyo			
	Marakwet	92	90	97.8
42.	Nyandarua	54	53	98.1
43.	Kitui	180	177	98.3
44.	Marsabit	69	68	98.6
45.	Homa Bay	11	11	100
46.	Kirinyaga	43	43	100
47.	Samburu	50	50	100

For provision of quality primary health care services, the level 3 facilities should have at least 3 nurses, 1 clinical officer and a laboratory technician at the bare minimum. 26 counties have all the required staff, i.e. at least 3 nurses, at least 1 clinical and at least 1 laboratory technician in each of their level 3 facilities. Kisumu, Samburu, Wajir and Homabay counties seem to have amongst the highest HR gaps in their level 3 facilities as shown in the table 18 below.

			Absolute Number	Percentage %
			Level 3 Facilities with less than 3	Level 3 Facilities with less
			Nurse & No Clinical officer & No Lab	than 3 Nurse & No Clinical
	county	Total	Tech	officer & No Lab Tech (%)
1.	Bomet	12	0	0
2.	Busia	14	0	0
3.	Elgeyo	25		
	Marakwet	25	0	0
4. E	Embu	13	0	0
5. C	ISIOIO	8	0	0
0.	Kericho	9	0	0
/.	Kiambu	28	0	0
8.	Kirinyaga	23	0	0
9.	Kitui	54	0	0
10.	Kwale	9	0	0
11.	Laikipia	8	0	0
12.	Lamu	2	0	0
13.	Machakos	27	0	0
14.	Meru	28	0	0
15.	Mombasa	12	0	0
16.	Nairobi	38	0	0
17.	Nandi	13	0	0
18.	Nyandarua	26	0	0
19.	Nyeri	23	0	0
20.	Taita			
21	Taveta	18	0	0
21.	Tana River	2	0	0
22.	Inaraka Nithi	1/	0	0
23	Trans	14	0	0
	Nzoia	18	0	0
24.	Turkana	10	0	0
25.	Uasin			
	Gishu	18	0	0
26.	West			
	Pokot	8	0	0
27.	Makueni	45	1	2.2
28.	Muranga	23	1	4.3
29.	Migori	20	1	5
30.	Vihiga	19	1	5.3
31.	Kilifi	14	1	7.1
32.	Kajiado	22	2	9.1
33.	Nakuru	33	3	9.1
34.	Baringo	25	3	12
35.	Siaya	32	4	12.5
36.	Kakamega	52	8	15.4

Table 18: Proportion of Level 3 facilities with less than 3 nurses, 1 clinical officer and 1 laboratory technician by county

			Absolute Number	Percentage %
			Level 3 Facilities with less than 3	Level 3 Facilities with less
			Nurse & No Clinical officer & No Lab	than 3 Nurse & No Clinical
	county	Total	Tech	officer & No Lab Tech (%)
37.	Nyamira	39	6	15.4
38.	Narok	25	4	16
39.	Bungoma	18	3	16.7
40.	Garissa	20	4	20
41.	Mandera	18	4	22.2
42.	Kisii	36	9	25
43.	Marsabit	22	6	27.3
44.	Kisumu	60	24	40
45.	Samburu	23	13	56.5
46.	Wajir	26	15	57.7
47.	Homa Bay	185	117	63.2

Basic Laboratory services in primary health care facilities

The basic laboratory services include the availability of the following tests; malaria test, urinalysis, blood glucose, urine test for pregnancy, TB diagnosis test, HIV test, full hemogram, and stool test for ova and cyst. The most available tests in the PHC facilities were PDT, Malaria and Dipstick for urinalysis with more than 94% of Level 2 and 3 offering the tests. The least available tests in level 2 and 3 facilities were full haemogram and TB diagnosis tests. Level 4 facilities had more than 98% availability of all tests required at basic laboratory except TB diagnosis test and hemogram at 70% and 86% respectively.



Figure 78: Basic lab services in PHC

3.5.8 Pharmacy services in primary health care facilities

Pharmaceutical commodities were least available in level 2 facilities. Some basic injectable antibiotics were missing in about a half of level 2 facilities including benzylpenicillin and gentamicin while oxytocin injection, which is key in the management of labour and delivery process was only available in 46% of level 2 facilities. Similarly, drugs for management of non-communicable conditions (amlodipine, metformin and insulin for hypertension and diabetes management respectively), were available in less than a half of level

2 facilities. Level 3 facilities also had a low availability of these NCD commodities. Preparedness to manage mental health was similarly very low in primary facilities with carbamazepine available in only a third of level 2 facilities and 45% of level 3 facilities.

Availability of amoxicillin capsules, metronidazole, ORS, nystatin and normal saline and paracetamol was high across all levels of facilities. The least available commodities in level 2 facilities were Midazolam Injection (12%), Olanzapine (13%), Fluoxetine (14%) and Premixed Insulin (17%). Commodities least available in level 3 facilities were Fluoxetine and Olanzapine (each 24%), Midazolam Injection (25%) and Premixed Insulin (37%). Most level 4 hospitals had almost all tracer drugs but had relatively lower availability of Fluoxetine (56%) and Olanzapine (55%).

There was low availability of loratadine tablets in levels 2 and 3 respectively at 29% and 38%. The most available commodities across all levels were Paracetamol Tablets, Albendazole Tablets, Hydrocortisone Injection and ORS Co-Packs figure 79.



■ Level 2 (n=4063) ■ Level 3 (n=1950) ■ Level 4 (n=936)

Figure 79: Availability of pharmaceutical tracer commodities

While most non pharmaceutical commodities were available in most PHC facilities (levels 2 & 3), nasal prongs and suction catheters were available in only about a third of PHC facilities. Only 4% of level 2 and 18% of level 3 facilities had the full basket of tracer non-pharmaceutical commodities. A half of level 4 facilities had all tracer items in stock. Solusets for fluids were available in 4 of every 10 PHC facilities while maternity pads were available in about a half of level 2 & 3 PHC facilities as shown in figure 80.



■ Level 2 (n=4063) ■ Level 3 (n=1950) ■ Level 4 (n=936)

Figure 80: Availability of non-pharmaceutical tracer commodities

Discussion and conclusion

From the census, the density of facilities in several counties was wanting with 1 facility for every 10,000 people while the national was at 2.4 for every 10,000 people. This means that the community is having to travel far to access the health facilities or they have to wait for long to get the services due to overcrowding. The availability of personnel in the PHC facilities is key and a vehicle towards achieving UHC. Unavailability may lead to low trust of the community towards the facilities (Ministry of Health, May 2021). Also, it alludes to the few basic outpatient services that were being delivered at these levels. Investing in PHC is a strategy that can attain better health outcomes at reduced cost as compared to over emphasis on disease specific or hospital-based care. In addition, weak linkage was observed between health facilities and the community as observed with low linkage of facilities to CHUs and the limited outreach services across the levels. Mental, dental and rehabilitation services availability was low across the different KEPH levels, while generally, the majority of the facilities did not offer all the basic outpatient services. Both pharmaceutical and non-pharmaceutical supplies were noted to be least available in PHC facilities, which may lead patients to seek care from higher level facilities.

Recommendations.

In light of these, it is recommended that:

- 1. The human resource should be revamped in the PHC as it presents a threat in the delivery of Universal Health Coverage. Relevant personnel should be available including at least a clinical officer/medical officer and a dental staff in each of the facilities.
- 2. The equipment and supplies that are key in delivery of the basic outpatient package should be provided in the PHC.
- 3. To enhance quality UHC and availability of healthcare at PHC levels, it is essential that basic radiology equipment such as X-rays and ultrasound are placed at the PHC levels .
- 4. Since the country is gearing towards reducing maternal mortality and morbidity, it is essential that investments are done at PHC facilities to have the requisite personnel, commodities, equipment and appropriate referral mechanism to provide quality maternal and newborn services during and after pregnancy.
- 5. CHU linkage to the health facilities should be enhanced to at least 90% in the PHC facilities; as well as leverage on the private sector to support CHUs.

LIMITATIONS

- 1. Training for the large number of data collectors was done within a limited time virtually. This may have impacted the capacity of the data collectors to collect high quality data.
- 2. There are no existing norms on the various services assessed. This necessitated development of the service package during the report development of this census based on the facility checklists, Human resource norms and standards, the KEPH among other documents.
- 3. The levels of care used in this report was mis-matched for many facilities. Despite extensive cleaning of the data, there are still some facilities that may have had an incorrect level of care.
- 4. Data on human resource assessed access rather than actual number of health workers due to staff working (and consequently being reported) in several health facilities. Data on actual numbers would be useful to determine actual numbers and calculate actual density of health workers per population.

OVERALL CONCLUSIONS

For UHC to be achieved, access to efficient, quality services are critical especially in Primary care facilities

- Once Kenyans have an insurance coverage and are empanelled to a primary care network (PCN), there's need to ensure that the care they access in health facilities is of the highest quality possible at each level
- Readiness of health facilities to provide health care services was is mainly threatened by inadequate equipment and human resource
- Access to specialized services needs to be strengthened for effective PHC and specialized services
- Scale up of empanelled by NHIF is critical at all levels
- Quality of services need to be established to address the disconnect between high coverage and poor performing Impact indicators (Maternal mortality, neonatal mortality)-Availability, work conditions and competencies of health workers, quality of clinical records, patient perceptions among others



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